

A review of the economic evidence on the determinants and effects of foreign direct investment

WELSH ECONOMY RESEARCH UNIT

Yr Uned Umchwil i Economi Cymru

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Summary

1	Introduction: Review of the economic evidence on the effects and determinants of FDI...	10
2	Stage 1 Review: FDI; theory, trends and determinants	13
3	Stage 1 review: Global FDI Trends.....	50
4	Stage 1 Review: UK and Regional FDI trends.....	67
5	Stage 2 Review: Impacts of foreign direct investment (introduction & issues).....	96
6	Stage 2. Impacts of FDI 1: Productivity spillovers, competition, trade and value chain effects	112
7	Stage 2 review: FDI impacts, evidence on employment, labour market effects, industrial relations and HRM/operational management	137
8	Stage 3 Review: Public support for foreign direct investment.....	165
9	Stage 3 review: Evaluation of intervention to support FDI	186
10	Conclusions and future research.....	207
11	References.....	216

Summary

Background

The Welsh Economy Research Unit of Cardiff Business School was commissioned by the Welsh Assembly Government to undertake a review of the determinants and impacts of foreign direct investment (FDI), and to review FDI-related policy interventions and their effectiveness. The research was undertaken in the period from December 2007-June 2008.

The study involved desk-based research drawing on official statistics, published economic and econometric research and previous evaluations of individual and combinations of public sector interventions to support inward FDI projects. The report contains a full bibliography of the references used, and a review of the statistical sources used to examine FDI trends, at Wales, UK and international levels.

The research project team benefited from the assistance of a steering group made up of staff from the Welsh Assembly Government Economic Research Advisory Panel and from International Business Wales. Both organisations assisted with access to statistical sources and to written reports, and the team are most grateful for this support.

The overarching aim was to bring together economic evidence on the factors influencing inward FDI flows and location decisions, to examine the direct and indirect economic effects of FDI, and to analyse the evidence relating to the embeddedness of inward foreign direct investors. In addition the review examined the evidence relating to the effects and cost-effectiveness (including the wider costs and benefits) of different types and combinations of public support provided to inward FDI projects, examining policy interventions across OECD countries.

The research proceeded in three main stages. In what follows there is an outline of what occurred in each of the stages, together with summary findings.

Stage 1 review of determinants and trends in FDI

The Stage 1 review comprised an analysis of the determinants of FDI inward flows. The review focused on the economic evidence on the factors influencing the nature and scale of inward FDI flows and the location decisions of inward foreign direct investors. This involved consideration of a range of location factors including the importance of production conditions, the role of macro and micro-economic conditions and policies, and the role of softer quality of life factors such as health and education services, housing, and access to facilities and amenities. The review of determinants was preceded by a brief review of the

theory of the multinational. This provided important context for the consideration and understanding of FDI location determinants.

A summary of some of the key determinants of FDI can be found in Table 1 below. This table also indicates where there is some research consensus on factors influencing FDI location decisions.

Table 1 Key determinants of FDI

Determinant/Variable	Expected direction of causation
Host market size/growth rate (actual and potential)	Positive
Labour costs	Negative, but significance may vary by measure used
Labour availability/levels of unemployment	Mixed - some research reveals an avoidance of locations with high unemployment and poverty levels. Expect direction to vary by industry
Flexibility of labour market and skills availability	Positive (may be more significant for particular economies or sectors)
Unionisation rates etc	Expectation of negative effects, but some studies have found insignificant or positive impacts
Tax conditions	Expected to differ by type of investment, and type of tax examined
Exchange rates (appreciation)	Impacts uncertain (negative)
Industry agglomeration	Positive (but significance may vary by sector)
Infrastructure	Positive, but significance may vary depending on whether hard or soft infrastructure, and by sector
Promotional agency expenditures	Positive, but may be difficult to identify/measure
Institutional conditions/quality	Positive, but may be difficult to identify/measure
Host country risk	Negative (but note different components of risk)
Industry revealed comparative advantage (relative exports over imports)	Generally positive (but significance may vary by sector). Also in some cases imports seen as a compliment to FDI as opposed to substitute
Industry competitive advantage	Positive
Financial incentives/grants	Positive, but generally viewed as secondary location factor

Stage 1 of the review continued to consider evidence relating to the embeddedness of inward FDI and examined factors that studies have shown to have impacted on the 'durability' of investments. Some of these findings are summarised below:

- Higher rates of foreign manufacturing firm exit have been connected to low past levels of industry profitability, relatively low levels of industry growth and low levels of net capital spending.
- Where FDI location has been strongly influenced by employment subsidies, their presence could be short lived.
- Foreign manufacturing firms have been more stable than domestic counterparts in times of poor domestic economic conditions.
- Research has found evidence that greenfield entrants may be characterised by lower failure risk compared with acquisition entrants; other factors influencing failure risk have been found to include plant size and levels of competition within the industry.

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- Levels of embeddedness have been linked with subsidiary status and function, skills and training demands of the local plant, levels of repeat investment, R&D activities and local supply characteristics.

The Stage 1 review then provided an analysis of the trends in international FDI flows, particularly focusing on Wales and the UK, and covering, for example, the country of origin of the inward FDI, the sector within which the inward foreign direct investments have occurred and the type and scale of such investments. The review of UK and Welsh data also compared key characteristics of foreign and domestic firms. The main conclusions in relation to FDI in Wales are as follows:

- The flow of new projects into Wales has been relatively steady in recent years. These projects show a sectoral and ownership diversity, but with an increasing importance of service sector projects. It appears that recent exits have been dominated by manufacturing firms. At the UK level, there is strong evidence of a trend towards more projects of a smaller scale, although for Wales no such trend was evident.
- The Welsh manufacturing sector as a whole has decreased in terms of both employment and output in recent years. However foreign-owned manufacturing employment has increased since 1995. Foreign-owned companies are an important part of the Welsh manufacturing sector, accounting for 50% of manufacturing gross value-added in 2005. In addition the generally higher average wages and productivity mean this is an important part of the local economy.
- The Welsh services sectors have generally been growing in terms of output and employment, this growth has also been evident in the foreign-owned component of this sector. The foreign owned services sectors has increased in both absolute and relative terms compared with the domestic sector.

Table 2 shows the most recent employment data for the foreign-owned sectors in Wales. In total, there were almost 133,000 employees in foreign-owned firms in Wales in 2007. The largest sector was production (manufacturing being the main component), followed by distribution, hotels, restaurants and transport. The report also contained details of country of ownership, and shows that the US still dominates the foreign-owned company stock, accounting for 36% of employment.

Table 2: Foreign enterprises active in Wales by broad industry.

	Employees
Production and primary sectors	66,265
Construction	3,160
Distribution, hotels, restaurants and transport	42,045
Financial and business services	17,110
Public administration, health and education	2,350
Other services	1,850
Total	132,785

Source: Inter-departmental business register (IDBR), Office for National Statistics.

Stage 2 review of effects of FDI

The objective of Stage 2 was to examine the evidence on the economic effects of inward FDI. The opening part of this section contained a typology of FDI impacts, and considered the linkages between expected impacts and theory. This was followed by a review of the extent to which the activities of the foreign sector can be associated with superior performance.

The review went on to examine specific areas of impact, and the main findings relating to these areas are given in Tables 3 and 4.

Table 3: Summary of impacts of FDI; spillovers, competition, trade and value chain effects

General productivity spillovers
• Studies have questioned existence of productivity spillovers; review found mixed results (some positive, others negative, and some with insignificant results). Study results are sensitive to specification and the measure of foreign presence used • There are difficulties in treating the foreign presence as homogenous; studies reveal that different types FDI have different impacts in terms of productivity spillovers • UK results have generally found evidence of positive productivity spillovers Determinants of scale and nature of spillovers shown to be linked to: • Motivation for FDI, and host economy characteristics • Technical capabilities of domestic firms – ability to benefit from foreign industry presence • Labour mobility issues (productivity in domestic firms shown to be positively effected when senior staff have previously worked within the foreign sector) • Some evidence of spillovers working both ways (from foreign to domestic, and from domestic to foreign) within R&D intensive sectors
Competition effects
• Research has found it difficult to identify the existence of competitive effects • Research concludes that FDI has a negative effect on domestic sector profitability. Negative competitive effects shown to outweigh positive spillovers in many cases • Competitive effects have been found to exist within the foreign-owned sector, and that these effects vary by industry activity and ownership • It is difficult to identify competitive effects at the regional scale
Trade effects
• MNEs are considered to be more trade intensive than domestic firms (more import and export intensive); trade intensity depends on industry and firm characteristics • Evidence that trade behaviour changes over time, for example, increases in local sourcing (and a consequent reduction in importing) over time • FDI can work to increase the exporting behaviour of domestic firms (export spillovers)
Buyer-supplier and value-chain effects
• Purchasing linkages are one transmission mechanism for the generation of productivity spillovers. The supply chain is an important route for knowledge transfer and increasing standards of products amongst domestic suppliers • Impacts are affected by the type of activity and purchasing requirements of the foreign owned sector. Foreign firms may exert a 'squeeze' on domestic firm margins. Where foreign firm purchases from domestic firms, the impact on profitability/productivity is unclear. • Where domestic firms purchase from foreign firms, they have been shown to benefit from scale and scope efficiencies offered by generally larger firms • Foreign firms generally found to have lower levels of local/regional purchasing linkages compared with domestic firms, although levels may change over time • Determinants of scale of local purchasing linkages have been found to be age (time), size, sector and entry mode

Some issues for Wales arising out of the points made in Table 3 include the following:

- There are certainly the potential for Welsh industry to benefit from both productivity and export spillovers from FDI. In order to maximise such potential benefits domestic industry could be encouraged to improve/expand their technical capacity to close the knowledge/technology gap with the foreign sector.
- Competitive effects may be difficult to identify within a Welsh spatial scale. The impacts could perhaps be best explored through selected case studies.
- A significant proportion of Wales' overseas trade will be directly (and indirectly) linked to foreign-owned companies.
- Relatively high levels of importing behaviour by the foreign-owned sector have implications for local purchasing patterns, and the potential benefits that can emanate from the supply chain.
- There could be scope for policy interventions to improve linkages to be focused on selected firms or sectors. In other sectors opportunities may be limited by the regional supply side and by the levels of autonomy which may prevent the local subsidiary from seeking local suppliers.

In relation to Table 4, some of the relevant issues for Wales are outlined below:

- There is a possibility that some negative employment and output effects may result from the global increase in M&As.
- Any increases in local purchasing propensities (see also Table 3) would add to the employment and output multipliers of foreign-owned industries in Wales.
- Average wages in the foreign-owned manufacturing sector in Wales exceed those of the domestic sector by around 36%.
- There is limited evidence of crowding-out impacts in the Welsh labour market as a result of FDI, however research would be needed to further assess this possible impact, as well as any impacts on wage inequalities.
- Wales has provided many opportunities for foreign-owned companies to transfer in elements of their own IR and HRM practices. This could be marketed to potential investors as a Welsh location advantage.

Table 4 Summary of impacts; employment and the labour market, industrial relations and management practices

Employment effects
• Greenfield entry mode has been found to have a relatively greater positive effect whilst M&As found to have more negative effects • Impacts depend on type of FDI and host economy characteristics e.g. subsidiaries with higher value-added characteristics found to have more positive employment effects • Limited country of ownership specific employment effects identified in research, but these are difficult to separate from other variables • Competitive effects may lead to negative domestic sector employment effects as a result of FDI. In addition the increase in FDI, may increase wages and then reduce employment • Indirect/multiplier effects vary by sector; foreign-owned sector employment multipliers found to be lower than those of the domestic sector
Labour market effects
• Foreign firms pay higher wages than domestic firms in similar sectors; the wage gap is linked to higher productivity, skills, greater worker effort, sector and size; once size is controlled for much of the wage gap evaporates • FDI may take around 2 years to have its full impact on the labour market • Increasing FDI can work to increase domestic wage inequalities • There is a possibility of wage spillovers to domestic sector (as local firms take-up new technologies etc, demand for skilled labour may increase, pushing up wages). Labour market impacts may vary by type of domestic firm, there is also the possibility of negative wage spillovers due to domestic sector crowding-out
Industrial relations effects
• Impacts evident where foreign firm IR practices are superior, and where trade unions are receptive to the adoption of new practices • Foreign firms may innovate in terms of IR practices which may then be copied by other foreign firms or domestic industries • Increasing FDI and growth in internationalisation has been connected to falling unionisation. Higher levels of IR institutions has been linked to lower levels of FDI
HRM and operational management practice effects
• Foreign firms may have access to a wide range of HRM and operational management techniques (including working practices, employment conditions and training) • These advantages, if passed on to the domestic industry, may lead to productivity gains • Some limits to the degree of transferability of practices to local environments • Much UK research has focussed on Japanese firms, who are found to have established innovative working practices amongst local subsidiaries, examples have included JIT and new buyer-supplier partnerships, and hybrid HRM practices • HRM practices can be a transmission mechanism for knowledge transfer

Stage 3 FDI policy review and evaluation

The Stage 3 review sought to build on the findings from Stages 1 and 2 and to examine the evidence relating to the impacts and cost-effectiveness of intervention to attract and retain inward FDI projects. This began with a review of the rationale for interventions based on the presence of different types of market failure.

The review described the various support measures that are available to attract inward FDI in the UK and overseas, before dealing with policy issues under the following heads;

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- the extent to which public supports and incentives for FDI are shown to be a location determinant;
 - the general effects of different types of intervention, and at different spatial levels, together with issues of waste and bidding wars;
 - evaluations of prior support frameworks and interventions, focusing on issues of cost effectiveness and highlighting cases of best practice in line with specific cases of market failure.

In relation to Welsh policy development, some issues arising from the review include:

- Whether types and levels of assistance should be more closely linked to potential benefits.
- Whether resources should be focused on functions rather than sectors of investment.
- Appropriate and tailored approaches to companies/functions may provide Wales with an important locational advantage.
- The links between changes in FDI stock, and policies toward the domestic sector are not always clear. Policy could be clarified to show how encouraging FDI could fulfil a range of different goals.
- There is a need to explore issues of comparative cost effectiveness of FDI policy with those of indigenous sector development.

The final element of the review draws conclusions for inward investment policy development in Wales, and shows where there are opportunities for further research into FDI in the Welsh case. These research opportunities include:

- The decision-making processes that foreign firms adopt in relation to a Welsh (or other) location.
- The determinants and impacts of foreign-owned services sector investment.
- The barriers to setting up HQ FDI functions in Wales, and potential policy interventions.
- How climate change issues may impact on FDI trends?
- How FDI trends effect regional imports and exports?

The development of the report has required the synthesis of large amounts of academic work, and other literature and reports. A full listing of the sources used in developing the report is provided. Moreover, there are additional appendices to this report detailing further materials relating to the Stage 2 review, and also statistical information on FDI.

1 Introduction: Review of the economic evidence on the effects and determinants of FDI

1.1 Background issues to the review

- 1.1.1 Cardiff Business School was commissioned to undertake this review of the economic evidence on the determinants and effects of foreign direct investment (FDI) during December 2007. The main elements of the research review were undertaken in the period December 2007 to May 2008.
- 1.1.2 This project is part of a wider programme of Welsh Assembly Government funded research, which has been developed to provide analyses of the issues and challenges facing the regional economy. In this respect a review of the determinants and effects of FDI is timely. At a regional level there are a number of key issues that contextualise the need for an up-to-date review of determinants and impacts, and resulting policy issues.
- 1.1.3 First, the structure of the Welsh economy has changed significantly since the late 1980s and early 1990s when the region was particularly successful in attracting foreign manufacturing capital. While manufacturing as a whole has shrunk in terms of its share of regional employment and more latterly output, the foreign-owned component of the regional manufacturing base remains a key contributor to regional employment, output and exports. This report will later provide supporting evidence for this conclusion.
- 1.1.4 Second, since the 1990s, there has been some thing of a shift away from the 'inward investment' model of development, and a growing focus on promoting indigenous growth, and the learning economy. The most recent economic development strategies, including *Wales: A Vibrant Economy* continue to highlight the importance of local enterprise, community capital, social networks, and endogenous development, and with perhaps less of an explicit focus on foreign direct investment. However, the use of resources to locate and embed foreign enterprise within the regional economy should be seen as complimentary to these goals.
- 1.1.5 Third, there is some uncertainty about the nature of the contemporary stock of FDI in Wales. Core official survey resources (e.g. *Annual Business Inquiry*) provide only a partial insight into levels of foreign ownership in the region, and the extent of foreign involvement in private services. Moreover, much of the 'determinants and impacts' research in the UK and EU regions has focused on manufacturing rather

than the services sector, and with a limited literature exploring the nature of services FDI, and how it differs from that in manufacturing. Then this is an opportune moment to re-appraise the nature of the FDI stock in Wales, and to give due consideration to the growing significance of FDI in the services sector.

- 1.1.6 Fourth, the review is contextualised on a growing body of research that has questioned the extent to which FDI causes positive impacts in host nations and regions. In particular this includes research that has questioned whether FDI actually causes productivity spillovers to the domestic sector, and then the extent to which these result from firm specific variables as opposed to foreignness. In addition foreignness is no longer seen as homogenous, with determinants and impacts varying by sector.
- 1.1.7 Fifth, and linked to the above, is that UK regions have seen some major reversals in the foreign manufacturing sector in the recent past. This includes in Wales the cases of employment losses at firms such as Sony, LG, Matsushita, and Halla. Selected exits, and the resulting employment losses, often in more needy parts of the Welsh economy, still serve to raise concerns for local policymakers about the appropriate use of resources, and the opportunity costs of funds used to incentivise inward investors, and resulting questions on the overall validity of FDI policy. Concerns have also followed from policy audits which have questioned the number of jobs created under regional interventions towards inward investors (see Driffield and Munday, 2000). However, it is noted in Wales, that employment in the foreign-owned manufacturing sector increased between 2000 and 2007, and sales in the same sector increased between 2000 and 2005 (see later Section 4).
- 1.1.8 Finally there has been a downturn in the amount of internationally mobile capital, and with an increase in cross border merger and acquisition (M&A) activity as a proportion of total FDI flows. There is now even more intense competitive pressure to attract foreign capital, and with development agencies now actively seeking new sources of FDI from lesser developed states.
- 1.1.9 Policy development at a regional level needs to be considered in the light of changing global conditions surrounding FDI, and with an understanding of the nature of the regional FDI stock and the factors that are changing the nature of that stock. Moreover, policy development in Wales may benefit from comparative analysis of developments in competing locations, and the different means through which public support is targeted on new and existing inward investors, and the cost effectiveness of such support.
- 1.1.10 This context inevitably means that this review of FDI determinants, impacts, and policy is wide ranging, with the research challenge being the effective synthesis of a diverse evidence base.

1.2 Structure of the report

- 1.2.1 The research proceeded in three main stages.
- 1.2.2 Stage 1 of the report comprises of a review of FDI theory, trends and determinants, as well as a data review of global and local FDI trends. These reviews can be found in Sections 2, 3 and 4 of the report.
- 1.2.3 Sections 5, 6 and 7 contain the Stage 2 review of FDI impacts. The impacts are reviewed under a series of headings which include; productivity spillovers, competition effects, trade effects, buyer-supplier effects, employment effects, labour market effects, industrial relations and human resource management effects.
- 1.2.4 In each part of the impacts review questions have been derived from the analysis that are relevant for Wales, and for future policy development.
- 1.2.5 Stage 3 of the report can be found in Sections 8 and 9. This stage provides a review of the various types of public support for FDI together with evaluations and other interventions to support FDI.
- 1.2.6 A final set of conclusions relating to regional research priorities following from the review is provided in Section 10. Following after this is a full set of references relating to this review and appendix tables.

2 Stage 1 Review: FDI; theory, trends and determinants

2.1 Stage 1 review objectives

2.1.1 In the Stage 1 review the focus is on trends and determinants of FDI. However this section begins with a theoretical and definitional review as this is important for the understanding of the determinants literature and the material in the Stage 2 review of economic and other impacts.

2.1.2 The Stage 1 review has the following objectives:

- To provide a definition of FDI and multinational enterprise;
- To briefly review areas of economic theory relevant to the study of the multinational enterprise and its outworkings;
- To provide a review of studies that have empirically considered the determinants of FDI at different spatial levels, but focusing on work that has explained the determinants of FDI flows into the UK and its regions;
- To examine research associated with the issue of the durability of FDI, and factors linked to greater embeddedness;
- To examine recent trends in global FDI stocks and flows (and forecasts of development)
- To focus in on FDI trends in the UK, and then trends in the sub-national development of FDI in the UK;
- To examine recent trends in FDI into Wales.

2.1.3 In meeting each of these objectives, the report seeks to make the findings of the review relevant to policy makers in Wales. In this vein at intervals during the Stage 1 review, boxed sections are introduced which tie the review findings to the particular Wales FDI context. The Stage 1 review is divided into three sections. This section deals with issues of definition, theory, determinants, and embeddedness. The next main section of the report treats with recent global trends in FDI, and with the fourth section of the report focusing on UK and Wales FDI statistics and trends.

2.2 Definitions

2.2.1 It is important in the context of this report to define the terms used. Defining FDI is however far from easy. Fundamentally the process of FDI involves the ownership of assets by foreign persons for the purpose of controlling the use of those assets. This then differentiates FDI from portfolio investment where ownership of part of an enterprise may not confer control. However, there is an issue of what control and

ownership actually represents. For example, effective control of an enterprise may result from having considerably less than 51% of the equity.

2.2.2 For the purposes of this report we adopt the OECD (1999) benchmark FDI definitions as follows:

“Foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity on one economy (“direct investor”) in an entity resident in an economy other than that of the investor (“direct investment enterprise”). The lasting interest implies the existence of a long term relationship between the direct investor and the investment and a significant degree of influence on the management of the enterprise. Direct investment involves both the initial transaction between the two entities and all subsequent capital transactions between them and among affiliate enterprises, both incorporated and unincorporated” (OECD, 1999, pp7-8) and further:

“OECD recommends that a direct investment enterprise be defined as an incorporated or unincorporated enterprise in which a foreign investor owns 10 % or more of the ordinary shares or voting power of an incorporated enterprise or the equivalent of an unincorporated enterprise” (OECD, 1999, p.8)

2.2.3 Quite what a significant degree of influence means is unclear. The OECD Benchmark definitions provide further details of what a direct investment relationship might entail.

2.2.4 FDI is undertaken in most cases by the multinational enterprise (MNE). A simple definition is taken here i.e. a multinational enterprise is one that controls income generating assets in more than one country. Again it is accepted that the appropriate definition of an MNE has been widely debated in the literature (see for example, Dunning, 1993).

2.2.5 The issue of the definition of FDI and MNE is important in the Welsh context. Typically FDI in the region has taken its most explicit form in terms of greenfield investments and joint ventures. Normally these can be easily tracked, particularly where investments are from manufacturing enterprises that have sought regional aid packages. However, it is unlikely that published statistics from sources such as the *Annual Business Inquiry* and others reveal the full extent of FDI in the local economy, particularly given the ‘10%’ share criteria in the OECD benchmark. More generally, tracing the impact of cross border M&A activity in the local economy can be very difficult. Indeed, often employees within firms do not have a perfect understanding of where ultimate holdings actually lay. Tracing patterns of FDI in elements of services industry can be particularly difficult.

2.2.6 Box 2.1 shows, in the light of the above discussion, the main issues for Wales. These will be returned to and discussed in section 4.

Box 2.1 Issues for Wales

- How much FDI does Wales actually have?
- Can we accurately record all FDI flows into the Welsh economy?
- Is foreign ownership of productive assets in the regional economy higher than we expect?

2.3 Theoretical perspectives on FDI

2.3.1 This part of the review briefly sets out some of the main theoretical perspectives relevant to the analysis of FDI and MNE.

2.3.2 First it is useful to set out what are expected to be the key motivations for wishing to engage in economic activity overseas. For firms these motives might include:

- Resource seeking motivations (i.e. to gain access to primary materials, specific types of labour, or technological expertise);
- Market seeking motivations (i.e. to sustain or protect an existing market; to engage in product adaptation; to reduce transactions costs of doing business remotely; to overcome tariff barriers);
- Efficiency seeking motivations (i.e. perhaps to gain the advantages of scale and scope economies);
- Strategic asset, capability seeking motivations (for example, gaining assets that complement the firm competitive position).

2.3.3 However, the firm may not have to engage in direct investment overseas to achieve the objectives set out above. There are a series of alternatives to direct investment including, for example, franchising, licensing, exporting, and strategic alliances. The theory of the multinational enterprise helps one to understand why firms might select the direct investment route. A brief review of the theory also is valuable for the following reasons:

- It is necessary before an analysis of trends in FDI flows can be undertaken, as it may aid the understanding of the main trend drivers;
- It is helpful in explaining both market entry and exit behaviour of MNEs;
- It helps to explain the organisational and international structures adopted by firms;
- It reveals the expected limits on the vertical and horizontal boundaries of the MNE;
- Theory helps in the understanding of the costs and benefits of attracting FDI for a host nation;
- Theory provides insights into how far government intervention might be successful in influencing MNE behaviour.

2.4 Theory: Market power approaches

- 2.4.1 The activities of a multinational enterprise are connected to market imperfections. In a perfectly competitive market, FDI would simply not occur because the enterprise investing overseas would attract extra costs not borne by incumbent domestic firms using the same technology and processes. Moreover, in a perfect market any advantages held by a foreign firm, perhaps in terms of specific technology and skills, would quickly disseminate to others firms in the market, eroding the competitive advantage of the innovating firm.
- 2.4.2 In this vein initial contributions to the theory of the MNE involved economists from an industrial organisation background. Here FDI was seen as a response of firms to domestic market conditions and opportunities in foreign markets. The direct investor then gained greater market power through the exploitation of a series of firm specific advantages. These 'specific advantages' also enabled the multinational firm to overcome the additional costs of both producing and competing abroad (Hymer, 1976; Kindleberger, 1969; Caves 1971).
- 2.4.3 These specific advantages or 'ownership' advantages might derive from a number of sources. These could result from specific technological knowledge, patents and perhaps expertise in terms of marketing, operations management, advertising etc. Additional sources of firm specific advantage might be access to capital sources, and managerial/entrepreneurial skills.
- 2.4.4 The nature of specific advantages held by foreign firms is of some interest to prospective host regions for FDI. Assuming firms have an ownership advantage over their domestically owned counterparts, then the corollary is an accompanying productivity advantage, and this could then be fertile ground for domestic firms to learn from their foreign counterparts. Indeed UK policy towards inward investment is predicated on foreign firms not only providing new capital, employment, and incomes, but a flow of new ideas and techniques to domestic firms (see UKTI, 2006).
- 2.4.5 How far the host economy might benefit from entry by MNEs with superior productivity is open to question. There is the possibility that MNEs may succeed in merely replacing domestic monopolies with foreign-owned ones. The counter would be that foreign entry improves allocative efficiency in the host nation. These impact issues are investigated in Stage 2 of this review.
- 2.4.6 Other firm specific advantages held by the MNE may come about as a result of oligopolistic market structures. The very size of the firm may impact its ability to innovate, conduct R&D, exploit patents and successfully differentiate the product.

Plant economies of scale, extant in oligopoly, may also be a source of specific advantage. Indeed the very ability to organise production assets globally would also constitute an important firm specific advantage.

2.4.7 A great deal of literature has examined the sources of these specific advantages. A good example is Pugel *et al* (1996) who demonstrated that the technology assets of Japanese enterprises formed a basis for their outward direct investment (see also Grubaugh, 1987; Horst, 1972). It can be difficult to empirically identify the nature of firm-specific advantages. For example, research has often used R&D intensity, or advertising and marketing intensity as a proxy for the presence of intangible assets conferring monopoly-type advantages. Then in identifying industries most likely to go multinational R&D intensity is a commonly used variable (see for example Buckley and Casson, 1976). The FDI trends analysis presented later reveals that the world's largest companies are often in technology and capital intensive sectors. Care must be taken here because as Kogut and Chang (1983) point out, firms lacking R&D or technology might be more likely to engage in FDI to gain access to new technology (i.e. strategic asset seeking FDI).

Box 2.2 Issues for Wales

- What sort of advantages do MNEs located in Wales have over domestic plants in Wales?
- To what extent does the FDI sector in Wales have a productivity advantage over its regional/domestic counterpart?

2.4.8 Reference to firm specific advantages reveals where the strengths of the MNE may be, and hints at the type of firms that might engage in direct investment. However, it does not show why firms choose to exploit the firm specific advantage by producing overseas rather than, for example, exporting, licensing or franchising.

2.4.9 Box 2.2 shows some key issues for Wales in the light of the above discussion. Again, these issues will be returned to in section 4.

2.5 Theory: Transactions costs approaches

2.5.1 Transactions costs theory (see Coase, 1937, and Buckley and Casson, 1976, 1991) has been extensively used to try and explain why firms choose to directly control income generating assets in foreign countries rather than allowing domestic firms to license production, or perhaps to adopt a franchising route to foreign expansion. In the transactions costs framework the direct investment is a firm response to

imperfections in intermediate goods, services, and knowledge markets. Internalisation theory suggests that some transactions might be more efficiently undertaken within the firm, as opposed to being left to the market. For example, licensing production to a domestic firm might involve high transactions costs. Consequently if the market fails, internalising the market transaction within the firm can offer several advantages, for example, avoidance of costs associated with enforcing property rights, and the control of crucial supplies (i.e. particularly in cases where there are high levels of quasi-rents and the potential for a hold-up problem). Internalisation may also allow the foreign multinational to effectively price discriminate and maintain product quality.

- 2.5.2 Buckley and Casson (1976) led the way in suggesting that internalisation was important in explaining the development of the MNE form. For example, they show that post-1945 internalisation processes were promoted by the need of large firms to diffuse technical and marketing knowledge in a manner that maintained their property rights. Fundamentally, whenever a market transaction, that previously (or potentially) could have straddled international borders, is internalised within the firm, then an MNE is created. Buckley and Casson argued that internalisation of the market for knowledge in particular would cause a high degree of multinationality. Knowledge is a public good which can be easily transmitted across borders, and the exploitation of knowledge will require internalisation achieved by a network of international plants.
- 2.5.3 During the eighties and nineties transactions costs approaches have become the central explanation for the existence and growth of the MNE (Kay, 1983; Cantwell, 1992). It is important to differentiate the transactions costs approach from what has been discussed previously. In the market power approach it is the tangible and intangible asset that provides the firm with its advantage. With the transactions costs approach, it is the process of internalising transactions involving those assets which is important in explaining the growth and development of the MNE.

2.6 Theory: Location specific assets

- 2.6.1 Theory (economic geography, trade theory) also shows that direct investment is a means for firms to gain access to particular assets, perhaps in terms of factor inputs or in terms of agglomeration externalities from existing clusters of enterprise in the host economy (Wheeler and Mody, 1992; Head *et al.*, 1995; Driffield and Munday, 2000; Nachum, 2002). How location specific assets affect FDI flows is further considered in the review of empirical literature on the determinants of inward FDI flows later.

2.7 Theory: The eclectic paradigm.

- 2.7.1 A useful analytical framework that combines elements of the firm-specific advantages framework, internalisation theory and trade theory is provided by Dunning's 'Eclectic Paradigm' (see for example, Dunning, 1993). In seeking to explain the flow, extent and level of international production Dunning shows that four factors act as preconditions before FDI can occur.
- 2.7.2 Firstly, the firm must be in possession of competitive advantages over domestically based enterprises. These firm specific advantages are called 'net ownership advantages' and these compensate the MNE for cost disadvantages faced when operating abroad. The expected nature of such advantages was highlighted earlier in this section. Dunning shows that these ownership advantages can be understood in terms of tangible or intangible assets, but can also include the firm's ability to organise these assets internationally.
- 2.7.3 The second condition of the paradigm is the extent to which the firm in possession of these net ownership advantages finds it more profitable to internalise these advantages to extract the maximum rent from them, as opposed to licensing production to a domestic firm. The third condition of the paradigm is that it must be more profitable for the firm to locate production within the host economy rather than to export directly to it. The final condition is that FDI must be coherent with the long run strategy of the firm.
- 2.7.4 Dunning (1991) states that "the eclectic paradigm is to be regarded more as a framework for analysing the determinants of international production than a predictive theory of the multinational firm". Using the eclectic paradigm (OLI; Ownership-Location-Internalisation) competitive advantage is first attributed to firms and nations which then impacts the extent and form of that nation's international involvement.
- 2.7.5 Dunning (1979) shows that there are links between the net ownership advantages possessed by firms and the specific characteristics of home nations. For example, a nation having high per capita incomes, developed education and training facilities, a substantial skills base, levels of R&D incentives and efficient capital markets might be classified as entrepreneurially competitive. These national advantages are internalised within the firm as intangible assets. With these assets the firm does not have to limit production to one nation, but may have the incentive to locate production overseas to access markets, reduce transportation costs, or perhaps to take advantage of special conditions and factor costs extant in the host. The combination of national entrepreneurial competitiveness and location attractiveness will then determine investment flows.

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- 2.7.6 For example the UK might be classified as both entrepreneurially competitive and locationally attractive, and it is expected that it will be characterised by high inward and outward investment. Developing nations may not be entrepreneurially competitive, but locationally attractive due to low factor costs. It is expected that in these cases inward investment would be relatively high when compared to outward direct investment.

2.8 Other theoretical approaches: Oligopoly interaction and path dependency

- 2.8.1 An important element of the literature on MNEs stresses oligopolistic interaction, and how far FDI can be interpreted as an exchange of threats between competing firms (Knickerbocker, 1973; Graham, 1978; Yu and Ito, 1988). Important here is that the MNE's decision to invest overseas are copied by rivals. For example, Vernon (1974) shows how a firm investing abroad during the mature stage of the product cycle (see below), does so to minimise risk, and to avoid extensive price competition during the mature phase. As economies of scale constitute an effective entry barrier during the mature phase, existing entrants become very sensitive to the strategic movements of one another. Within this scenario FDI is understood as a reaction to the foreign investment decision of a competitor. The end result of both moves and countermoves by the oligopolistic firms is long run stability in their world market shares, which is partly achieved as each seeks to produce in the others national markets.
- 2.8.2 In this context Rowthorn (1992) also reveals that MNEs might use FDI to protect their home markets. Motta (1994) shows how FDI can be an aggressive phenomena within a model of reciprocal investments. More recently work has shown that the likelihood of firm entry is predicated on the prior decisions of other firms (Martin *et al.*, 1998). Such copy-cat behaviour may not necessarily be the result of a strategic interaction between oligopolists, but could reflect firm uncertainty about foreign market conditions, such that survival prospects are improved if the prospective MNE follows the decisions of others.
- 2.8.3 While the above strands of research stress how FDI might be considered a reaction to the investment decisions of competitors, other research examines how prior decisions of the firm itself influence future investment directions. Here the nature of the MNE decision to invest overseas is grounded in historical precedent and a particular firm cultural context (see Chan *et al.*, 2006).

2.9 Product cycle approaches to FDI

- 2.9.1 A number of theoretical approaches concerning FDI have developed around the concept of the product life cycle. The life cycle recognises the distinct stages in the sales life of a product from genesis and innovation through growth, maturity and then decline. The product cycle approach relates the stages in the life cycle to the international location decision made by the firm, and the choice between exporting and direct investment.
- 2.9.2 Vernon (1971) illustrated this with reference to the movement of US investment into Western Europe during the post war era. The development and introduction of new products is fuelled by effective demand. During the twentieth century the US economy was characterised by high per capita incomes and there was an incentive for US producers to manufacture such goods. The firms production was concentrated in the US during the introductory and initial growth stages because of the need to redesign, develop and market the product. This stage required highly skilled production and extensive functional communication. As competitors are few, and the product highly differentiated in the genesis stage, cost considerations are marginalised. Thus there is a strong motive to produce in the home market.
- 2.9.3 However products become standardised, and price competition becomes more important, as will production costs. Increased competition and market expansion may highlight opportunities in overseas markets. These will be served via exports until cost considerations make it economic for direct investment.
- 2.9.4 The product life cycle approach provides a good explanation of post war trends in US FDI overseas, but is rather less successful in explaining the most recent trends of cross investment between developed states. However, the product cycle approach may still have value in explaining more general MNE strategy. For example, Rugman and Verbeke (2004) have argued that few MNEs are genuinely global in scope, but rather they have the largest share of their operations (sales) in the 'home leg' of the TRIAD (Western Europe, North America, Japan). Rugman and Verbeke (2004) show that MNEs may have problems expanding out of their home markets because their innovations are quickly copied by competitors in other parts of the TRIAD, such that to maximise rents from innovation it is better to focus on home markets during the growth and innovation stages, given that opportunities are marginal as the product matures.

2.10 Other approaches: home and host conditions

2.10.1 There are numerous other approaches that are relevant to understanding why firms invest overseas, and that might be used to explain the direction of FDI inflows and outflows.

2.10.2 Exchange rate effects: in a perfect economy differences in exchange rates would not be expected to influence the decision to invest overseas. For example, an appreciation of sterling might lower the cost of assets purchased overseas, but at the same time the nominal return would also fall, leaving the underlying rate of return the same. However, if there are imperfect markets, then there is the possibility that a home country currency appreciation may increase FDI. Blonigen (1997) shows that if FDI is driven by the need to gain assets (particularly intangible assets) that are transferable within the firm across markets without a currency exchange, then the home rate appreciation will lower the price of those foreign assets, but might not lower the nominal return. Blonigen (2005) in a review of exchange rate impacts on the direction of FDI argues that the literature is unclear on how far rates actually impact FDI flows.

2.10.3 Tax effects: The general expectation is that higher taxes deflect FDI. However, care needs to be taken with this type of conclusion (see for example, Hartman, 1984, 1985). The tax environment facing the MNE has become increasingly complex in the last two decades, such that the MNE faces taxation at different spatial levels. The transfer pricing tactics adopted by MNEs have also become increasingly complex. Blonigen (2005) makes the point that home country policies on double taxation effectively alter the impacts of both home and host country tax rates on the firm's willingness to invest overseas. He goes on to conclude that the nature of the home country credit system to deal with the foreign taxes being paid by the MNE makes taxes in the host country more inconsequential as investment determinants.

2.10.4 Host country institution effects: Clearly MNEs may be concerned by host country institutional conditions that provide poor legal protection for assets, inadequate regulation or poor governance infrastructures. For example, Wei (2000) shows that levels of host nation corruption are negatively associated with FDI. Globerman and Shapiro (2003) in an analysis of US FDI suggest that states that do not meet a minimum level of governance infrastructure (i.e. attributes of legislative, regulatory and legal systems, property rights etc) will receive very little US FDI, and that where states do receive US FDI, the nature of the governance infrastructure is an important determinant of the amount of FDI received (see also Henisz and Delios, 2001).

- 2.10.5 Associated with this type of research is work that shows that MNEs in their decision making seek to take into account institutional and cultural factors. Firms may seek locations similar to the home country because this minimises uncertainty and risk, and increases the probability of investment success (Xu and Shenhan, 2002). Flores (2006) argues that there is still a challenge to bring together economic and institutional/cultural factors in explaining the decision to invest overseas.
- 2.10.6 In a similar vein Witt and Lewin (2007) seek to explain outward FDI (capital flight) as an escape response to home country institutional constraints. This argues that states characterised by high levels of societal coordination tend to exhibit slower rates of institutional change (more inflexibility and rigidity) such that as environmental conditions change, institutional conditions may not change fast enough to meet the business needs of firms, who in consequence exit.

2.11 FDI theory: A summary of main themes

2.11.1 Table 2.1 outlines the key themes or strands in the FDI theoretical literature as discussed in the preceding review.

Table 2.1: Summary of theoretical perspectives

Theoretical perspective	Comments.
Market Power	Firm specific 'ownership' advantages enables MNE to overcome additional costs of operating abroad.
Transactions costs	Internalisation of market transactions across international boundaries. Explains why firms may directly own income generating assets abroad rather than licence or franchise.
Location specific assets	FDI provides firms with a means of accessing location specific assets.
<i>These three above strands are brought together within the eclectic paradigm (Dunning, 1993)</i>	
Oligopoly interaction	FDI may be a reaction to the actual or expected actions of other firms.
Path dependency	FDI as a result of historical precedent and cultural context
Product life cycle	Firm decisions on exporting and FDI depend on stage in product life cycle.
<i>Home and host specific factors</i>	
Exchange rates	Possibility that home country currency appreciation may increase FDI (see also section 2.12)
Tax effects	Higher taxes work to reduce/discourage FDI? (see also section 2.12)
Institutional effects	Required levels of regulatory, legal systems etc.

2.11.2 The theoretical review presented here is partial and has focused on the core contributions to the theory of FDI and MNE. The focus now turns to examining empirical research that has explored the determinants of FDI at different spatial and industry scales.

2.12 Determinants of FDI; scoping the contributions

2.12.1 The literature on the determinants of FDI is extensive. Studies take a number of directions including:

- Home country determinants of outward FDI;
- Analyses of aggregate flows of FDI into individual states; these types of studies are numerous, and with much of the most useful work in this area undertaken in the 1980s and early 1990s and highlighting location factors including market size, and market growth rate, and particular infrastructure, labour or capital market conditions;
- Analysis of bi-lateral flows between states/trading blocs;
- Analyses of flows of FDI into particular industries, focusing on specific entry conditions, industry concentration ratios, and differences between foreign and domestically owned firms in productivity terms;
- Analyses that examine the spatial distribution of inward investment within a reference nation i.e. why one region outperforms another in terms of new inward investment. Studies in this vein in the US, Asia, and Europe tend to find that variables describing factor costs, labour productivity, subsidies, particular elements of infrastructure, and the presence of similar firms and specific industry infrastructure tends to explain why some regions outperform others. Much of this latter work has been linked to debates on cluster development and the processes of endogenous growth;
- Case studies examining particular firm or industries.

2.12.2 In the review that follows the focus is on determinants of FDI inflows. The review first considers general international studies of FDI determinants, before considering FDI determinants literature that has focused on the UK case. Clearly care is needed here with more general studies, for example, those considering flows into the EU also including UK data in the analysis.

2.12.3 This is followed by a review of studies that have examined the determinants of the sub-national geography of FDI. Once again this begins with a review of studies from outwith the UK before focusing on research examining the sub-national distribution of FDI into regions and counties of the UK. This element of the review is completed by an examination of studies that have focused on the determinants of FDI into Wales.

2.12.4 It is stressed at this point that the issue of determinants has a wider relevance to Stage 2 of this review on FDI impacts. It is expected that the motivation and determinants of FDI at different spatial levels links through to issues such as:

- The impacts of investment, perhaps in terms of potential for spillovers to the domestic sector (horizontal and vertical spillovers) and to other elements of the foreign sector;
- FDI embeddedness and then durability;
- The expected efficacy and additionality of policy resources used to attract FDI (linked to stage 3 of the review dealing with policy).

2.12.5 In respect of the final bullet point the examination of national and regional FDI determinants (and trends), can permit some consideration of what would have occurred in the absence of various types of public support. Selected studies of FDI determinants (particularly at sub-national level) work to build in variables that proxy for levels of support including different types of grants, tax regimes, and the presence of publicly supported softer infrastructures encouraging new investment (see for example Glickman and Woodward, 1988; Hill and Munday 1994; UNCTAD, 1998 and UKTI, 2006). These types of studies allow some inference to be drawn on how influential different types of support have been in attracting foreign capital, and the extent to which policy resources create genuinely additional outcomes.

2.13 Research on the determinants of FDI flows: general

2.13.1 There is a huge general literature dealing with determinants of FDI inflows and outflows. There are problems encompassing the breadth of materials within this report. Therefore, the focus is on more recent material, and on those papers treating with FDI inflows in particular. A summary of selected academic papers reviewed can be found in Appendix 1 (Table A1.1). The Appendix table provides a broad sub-division of the key papers into those that deal with general FDI

determinants to states and sectors; and then those that focus more on the importance of institutional and political conditions. The appendix table (A1) then shows a summary of the findings from the materials reviewed, while the text below attempts to bring out some key points.

2.13.2 Several general points can be made:

- While there is very broad consensus on the factors expected to influence FDI inflows, the review shows that research varies in the importance given to variables;
- Studies that major on the direction of overall flows of FDI may gloss over factors that are particularly important in a given state and in a given industry. There is plenty of evidence in the summary table that some industries, and some industries from specific states, seek different host attributes than others;
- There is the danger that the results from studies may not be robust to small changes in underlying datasets. Indeed Chakrabarti (2001), in a meta-level analysis of FDI determinants, reveals that the relationship between FDI and many of the 'controversial' variables including tax rates, earnings, openness, exchange rates, tariffs, growth and the trade balance, can be sensitive to the exact specification of underlying datasets. In plain language this means that many stated determinants of cross county FDI are actually fragile in statistical terms.
- Finally there are real dangers for policymakers in attempting to generalise from the findings of any review of FDI determinants. However some useful material can be gleaned from a review.

2.13.3 Given the above points there is then only a limited consensus in studies on the general host nation factors seen to be attractive to foreign firms irrespective of host nation, or industry involved. The most general studies of inflow determinants do highlight the importance of factors such as host market size, and host market growth rate.

2.13.4 For example early studies by Lunn (1980), Scaperlanda and Balough (1983), together with Culem (1988) showed that bilateral FDI flows between the US and Europe were influenced by size of host market, economic growth in the host market and the presence of tariff barriers. Moreover, the papers reviewed show that many of the *classic* host location factors do emerge in the studies, but with in some cases, rather less certainty on hypothesised relationships. For example, variables describing the role of tax conditions, exchange rates, industry agglomeration, unit labour costs, infrastructure availability, promotional expenditures and institutional conditions appear regularly as significant variables in the studies. Indeed some studies seek to control for the 'classic' location factors before examining variables of interest.

2.13.5 The focus here is on the role of some of the more interesting and controversial variables.

2.13.6 Regarding exchange rates, the received wisdom is that where a currency appreciation lowers the costs of overseas assets, then the return denominated in the home currency will fall, meaning the rate of return is effectively the same (see paragraph 2.10.2 above and review by Blonigen, 2005; Klein and Rosengren, 1994).

2.13.7 Appendix Table A1.1 separates out a selection of papers that major on tax issues. Again received wisdom is that states with high corporation tax rates will fare worse than those with lower corporation tax rates. However, there is some uncertainty here because some firms may be rather insensitive to corporation tax rates depending on how they plan to invest in a foreign subsidiary, and their intentions with regard to repatriating incomes (but see Lahrache-Revil, 2006). Ultimately factors including double taxation agreements between host and home states, and the ability to engage in transfer pricing may be important (see also Wijeweera *et al.*, 2007). Again Blonigen (2005) in his review concludes that the credit systems used to deal with the foreign taxes paid by the multinational might work to make taxes in the host country relatively inconsequential. Notwithstanding several of the papers included in the review still testify to the importance of taxation as a location variable.

2.13.8 On trade effects the general notion of tariff jumping as a motivation is well established in most cases and here FDI might work to directly substitute for exports

(see Grosse and Trevino, 1996). This was evident in the case of Japanese electronics manufacturing FDI into the UK, France, and Germany in the 1980s (Munday, 1990a).

2.13.9 Reviewed literature also reveals the likelihood of an orderly progression from exporting to FDI in that prior trading patterns between nations increase the likelihood of FDI. However, this relationship may not be straightforward (see Kimono *et al.*, 2007). For example, the foreign multinational may work to increase exports of intermediate products to service the needs of its foreign subsidiaries. Wales provides a good case study of this with Japanese investments during the 1980s being unable (in the short run at least) to source selected high value components in the UK, giving them the option of either manufacturing the components themselves or importing from parent plants in the far east.

2.13.10 In lesser developed countries studies tend to explore in greater detail the role of institutional and political conditions, in addition to factors describing market and general production conditions. Here then foreign firms might be equally concerned with issues surrounding the legal protection of human and physical assets. In this regard FDI determinants work tends to focus on the importance of variables describing state stability, presence of conflict, law and order, and democratic accountability. There is also a strong vein of work that accounts for the importance of the closeness of institutional, political and cultural connections between host and home country of FDI, and work that seeks to develop corruption indices, in the expectation that higher levels of these indices are connected to lower levels of FDI.

2.13.11 In the case of studies majoring on Central and Eastern Europe (which is of some interest given manufacturing exits from Wales in the recent past) there is an emphasis on the 'classic' location variables such as taxes, unit labour costs and distance. However, studies also stress the importance of the stage reached in the transition process (i.e. including pre-accession announcements, and progress in privatisation programmes), and the relative flexibility of the host labour market in comparison to that in the home state. In the trade zone case Medvedev (2006) shows that preferential trade agreements in general can be linked with a positive change in net FDI flows, and the gains from FDI increase with the market size of preferential trade zone partners, and host proximity to the trading partners.

2.13.12 Fewer studies tackle the problem of what types of variables are likely to be important to different types of investors, and then whether different modes of investment are more responsive to some national conditions than others. For example, Ismail and Yussof (2003) show that labour market determinants differ between states in terms of their impact on FDI inflows, and Tuan and Ng (2003) show that manufacturing and services industry investors in China respond very differently to agglomeration processes. Resmini (2000) also reports heterogeneity

in sectoral requirements in a study of EU investment into central and eastern Europe (see also Pusterla and Resmini, 2007; Walkenhorst, 2004).

2.13.13 Appendix Table A1.1 also provides selected references relating to papers on FDI determinants on services sectors including banking, insurance, and advertising. Indeed Moshirian (2001) proposes a model for FDI in banking where the variables are more peculiar to the banking industry (see also Li and Moshirian, 2004 for an analysis of the determinants of FDI into US insurance services).

2.14 FDI flows into the UK

2.14.1 This section contains a review of the key studies undertaken in the period after 1990 examining FDI flows into the UK. In general terms studies have focused in on specific industry characteristics attractive to FDI or have worked to associate FDI inflows (and outflows) with specific location conditions in the UK.

2.14.2 Giuliatti *et al.* (2004) make the point that most of the empirical literature on determinants normally follows one of two approaches. Cross sectional analyses which have typically examined FDI across sectors, and then with FDI levels within industries regressed on industry/sector characteristics to find firm specific and location factors important in explaining these concentrations. At another level are time series analyses which explore variation and growth in FDI over time, relating trends to macro-economic variables. Giuliatti *et al.* argue that any one approach in and of itself will either miss out on intersectoral variation in trends or miss out of longer term dynamic effects. This noted the review below contains studies in a time series and cross sectional framework.

2.14.3 Hughes and Oughton (1992) examined the determinants of the MNE presence in UK industries. As a pretext to their research they showed that much of the determinants literature up until that time had focused on firm specific advantages. However, their research examined the extent to which multinationality might be used in the presence of uncertainty as a strategic move in an oligopoly game.

2.14.4 Critical to this line of argument is that incoming firms could be present in oligopolistic industries, not merely because they had pre-requisite firm specific assets giving an ownership advantage, but also because the dynamic interaction of firms in these same industries led to multinationality. Higher levels of multinationality are then a result of a type of exchange of threats. Their analysis considered foreign and domestic firms in selected industries and suggested that the MNE presence in the UK was positively influenced by the potential for oligopoly interaction. This potential was measured in terms of variables relating to industry concentration and scale. Hughes and Oughton also found that foreign MNEs in the

UK were more likely to be found in industries with high export intensities and high rates of growth.

2.14.5 Pain (1993) developed a different approach focusing on a model that concentrates on supply side issues and the importance of market size and factor costs (labour and capital) in influencing inward investment. Pain then sought to explain whole economy FDI into the UK during the 1970s and 1980s, and with results showing that relative factor prices were an important FDI determinant. This research also suggested that inward investment became more sensitive to movements in relative labour costs through the 1980s. Pain suggested that a sustained rise of 1% in UK labour costs would eventually reduce the stock of UK inward investment by around 1.9% (Pain, 1993, p.17).

2.14.6 Maskus and Webster (1995) sought to analyse the relationship between revealed comparative advantage and new FDI. A premise for the research was the extent to which FDI occurs because the prospect for trade in goods diminishes. Maskus and Webster argue that the pattern of UK net inward FDI by factor intensity revealed a close match to the pattern of revealed factor abundance in UK industries as given by net exports. The work revealed that net inward FDI to the UK was focused in energy intensive sectors, and was concentrated in those categories of labour (non-manual in the main) where the UK was characterised by relative abundance. The paper concluded that comparative advantage of the factor proportions type was an important determinant of FDI location in the UK case.

2.14.7 Milner and Pentecost (1996) examined the relationship between FDI and international trade using the case of US inward investment into the UK. They showed that US investment tended to be located in industries which have a revealed comparative advantage, and where markets were large. However, this research found little evidence to support the notion that US investors were tariff jumping. The research was based on an analysis of UK data for 1989 and 1990 for 48 industry groups. The cross sectional regression showed that inter-industry variation in industrial/market characteristics was important for US investors. US FDI was found to be higher where there was access to sources of UK comparative advantage, and in particular where access was provided to capital and non-manual labour intensive activities. Moreover, where US investment was higher, there was found to be less scope for competition from domestic enterprise and from imports. Host market size was viewed as being a more important consideration for US investors than were the existence of external trade barriers.

2.14.8 Billington (1999) provided a very different analysis which attempted to focus on factors that are important to inward investors to the UK at different times during the location process i.e. moving from the determinants of a UK location to those factors that were important in deciding between parts of the UK (see Section 2.6).

The initial analysis focusing on the UK used data from seven developed states (1986-1993) in a pooled regression. In the national model, high levels of GDP, GDP growth, levels of unemployment, and interest rates each had a positive influence on FDI. The national model also included a variable covering imports. A positive sign here was taken to indicate that imports were a complement to FDI as opposed to a substitute for it. Taxes were also found to be significant such that one of the policy implications of the research was that a reduction in corporation tax rates would have a beneficial effect on FDI inflows.

2.14.9 Driffield and Munday (2000) adopted a sectoral approach to explaining FDI into the UK, but also allowed for a dynamic element showing that inward FDI itself works to add to the location competitiveness of the UK economy. Using Census of Production data for 1984-1992 they show that inward investment is determined by factors characterising industry competitive advantage, and the degree of specific industry attractiveness. They showed that FDI tended to occur in industries characterised by strong entry barriers denominated in terms of capital spending, advertising and scale. At the same time foreign investment was less likely in the most concentrated UK segments. FDI in specific industrial sectors contributed significantly to competitive advantage, which itself was a determinant of future foreign manufacturing investment. The paper also demonstrated that the regional agglomeration of industry was the most important determinant of industry location advantage.

2.14.10 Driffield and Munday concluded that UK success in attracting new international manufacturing capital was partly a function of past success. The paper demonstrated the genuine additionality of inward investment, but that this went beyond simple job creation, with inward investors contributing to the development of sectoral competitive advantage through factors which include superior productive efficiency, research and development, and contribution to the development of physical and social industrial infrastructure.

2.14.11 Hatzuis (2000) examined FDI inflows and outflows in Germany and the UK. The paper contrasts the differences in national attitudes towards inward investment flows from overseas. The key finding from Hatzuis was, in both the UK and German case, that high unit labour costs increased FDI outflows, and lowered FDI inflows. Hatzuis also demonstrated that the impacts of unit labour costs on domestic manufacturing investment levels were more negative in the 'high FDI' 1980s than in the 'low FDI' 1970s, with empirical work suggesting that the long run labour demand elasticity had risen over the period. Hatzuis argues that falling barriers to FDI (more liberal investment environment during the 1980s) effectively had made wage moderation more important in preserving domestic employment in both national cases. In a more open economy rising labour costs tended to reduce labour demand partly through substitution effects, but also because of the stimulus

to re-location, and with the latter pressure increasing as barriers to FDI fell during the 1980s.

2.14.12 In his model Hatzuis (2000) shows the effect of unit labour costs on UK and German bi-lateral FDI flows, and with a series of control variables. In the UK case high unit labour costs were associated with net FDI outflows, and with a 1% increase in unit labour costs found to increase FDI outflows by about £74m (at 1985 prices), and reduce inflows by £65m (in aggregate an estimated 1.7% of UK manufacturing investment).

2.14.13 Giulietti *et al* (2004) used panel data to identify firm specific and industry characteristics that determine the variation of FDI across industries and its growth over time. The focus of this work was on the UK food processing sector (1982 - 1991). The results from this study highlighted the importance of ownership factors (advertising and managerial intensity) and market characteristics (industry concentration levels) in explaining the distribution of FDI across the UK food processing sector. The study also explored the role of macro-economic factors exploring, for example, the connections between labour market changes and FDI inflows into the food sector. In conclusion, the paper argued that the macro-economic factors had been less important than the ownership and industry characteristics in explaining FDI in the UK food sector over the study period.

2.15 Specific location determinants of FDI - sub national studies

2.15.1 Research into more specific location characteristics attractive to foreign direct investments tend to go hand in hand with research that studies the sub-national distribution of FDI, and how some locations persistently outperform others. Historically, much of the best work on this topic was undertaken in the US in the 1980s and 1990s. More recently there has been an explosion of studies that have examined the factors driving the location geography of FDI within China.

2.15.2 This part of the review first considers some of the issues with studies examining site-specific location factors, before reviewing some of the main studies. This is followed by a review of the research that has considered the sub-national distribution of FDI in the UK, and then an analysis of the smaller body of work that has considered the factors which have been significant in relation to inward investment into Wales.

2.15.3 Studies of final location characteristics follow several routes. First, is the collection of survey based evidence from the investors themselves via questionnaire and interview. There are several issues with these techniques, not least that some inward investors may be loath to divulge the underlying motivations for site

selection. Moreover, plant level employees interviewed do not necessarily have information of why a particular site was selected. These problems mean that academic research has focused on more rigorous studies employing econometrics to tease out the regional characteristics thought to be important to inward investors. Even here there are problems.

2.15.4 Econometric work generally deals with large numbers of inward investment decisions or inward financial flows of FDI. Approaches assume that investors make rational decisions based on opportunities for profits, cost minimisation or access to agglomeration advantages. In reality specific site location decisions are made at best using imperfect economic and market information, and at worst reflect mere guesswork. These practical issues mean that care should be taken in generalising from the econometric work. Moreover, there are problems with aggregation bias, meaning that the results indicate the location characteristics attractive to the average firm. Then the average may not exist (the ecological fallacy) such that individual case based approaches in the study of site location will always have additional value. The issue of aggregation of decisions is particularly serious. In examining overall flows or decisions to invest in an area, the M&As are often included together with greenfield and joint ventures. Each type of investment is expected to be subject to very different specific location criteria and with inward investment agencies perhaps more interested in the determinants of greenfield investment.

2.15.5 The above noted, the detailed empirical investigation of the regional/site specific characteristics attractive to foreign investors has been limited. This is largely because of problems with data. In particular this relates to difficulties in separating the decisions of foreign investors from those of domestic firms. Indeed in the early literature (see below) it has even been questioned whether analysis of the sub-national location decisions of foreign firms is really necessary, with one issue being whether one would expect the criteria used to be different from that used by domestic firms.

2.15.6 Data issues mean that the best early studies were undertaken in more developed and open states which kept accurate records on the decisions of foreign inward investors (particularly the US and UK).

2.15.7 In the US, regression methodology has been used to establish those regional factors that have influenced foreign investors. For example, Little (1978) regressed US state characteristics on state shares of foreign investment relative to shares of domestic manufacturing. Little found that foreign investors were more sensitive than US investors to wage differentials and the presence of port infrastructure (access to supplies).

2.15.8 McConnell (1980) examined the extent to which the location pattern of foreign subsidiaries in the US, corresponded to the changing spatial distribution of domestic firms. As part of his analysis he suggested that state shares of FDI increased as among other things:

- the number of manufacturing units with more than 20 employees per capita increased;
- as state urban population increased relative to total population, and as states population per square mile increased;
- as the states social well-being index declined;
- if the state was within the traditional manufacturing belt;
- as direct general expenditure per capita of state and local government increased;
- as federal aid per capita to state and local government decreased.

2.15.9 McConnell also found that the variables that were hypothesized to affect the location shift of domestic manufacturing i.e. state personal/corporate taxes differentials, climate, labour cost and trades union activity did not affect FDI. McConnell concluded that in 1976, foreign firms in the US still preferred traditional locations and were only just beginning to respond to the location decisions made by domestic firms in the sixties and early seventies to site facilities without the traditional manufacturing heartland.

2.15.10 Glickman and Woodward (1988) investigated the location pattern of foreign owned companies in the US and their regression results suggested that the location of foreign owned property, plant and equipment could be largely explained by variables representing the cost of energy, infrastructure availability and labour climate, the latter variable incorporating industrial relations records and wages.

2.15.11 Glickman and Woodward concluded in their 1988 paper that in the US case up until that time:

"The survey evidence indicates that locational factors describing regional production conditions appear far more important to foreign managers than state and local incentives. Consistently, the influence of markets, transportation facilities, and labour variables has emerged". p.142.

2.15.12 Bagchi-Sen and Wheeler (1989) examined the spatial distribution of FDI among US metropolitan areas for the years 1974-1978 and 1979-1983. In their study they tested the importance of population size (representing the growth of a metropolitan centre) and population growth (representing regional dynamics) together with per capita purchasing power, in determining levels of foreign investment. Each variable was found to be significant within their model.

2.15.13 During the 1990s a set of more complex analyses were developed in the US (and elsewhere) to explore the location specifics of foreign investment. For

example, Coughlin *et al* (1991) used data for 1981-83 to examine the US location decisions of foreign firms. They used a conditional logit model examining FDI in aggregate i.e. the analysis did not distinguish between the different types of foreign investment. For example, it assumed that greenfield investments were attracted to similar location characteristics as joint ventures, M&As etc. They showed that states with higher per capita incomes and higher densities of manufacturing activity received rather more FDI. Higher state wage levels were found to be a deterrent as were higher taxes. However, higher unionisation rates were connected with higher FDI. Other factors having a positive effect were higher levels of state unemployment, higher levels of infrastructure and rates of state promotional expenditures.

2.15.14 Woodward (1992) used a conditional logit model to analyse Japanese affiliate location choices in the US between 1980 and 1989. Woodward suggested that Japanese affiliates preferred states with strong markets and low unionisation rates. He also suggests an element of path dependency in that if there was early establishment of a representative office this could have a positive impact on a subsequent site choice. (Head *et al* (1995) in a later analysis of Japanese affiliate location decisions also showed that agglomeration of existing Japanese capital in an area was an important location determinant in the US case.) At the sub-state level Woodward showed that there tended to be an avoidance of less developed areas, and a preference for areas with agglomerations of extant manufacturing assets, low levels of unemployment and poverty rates, and concentrations of educated and productive workers. Interstate road connections were important where Japanese plants were constructed in the rural and semi rural automotive corridor.

2.15.15 As touched upon above, one issue with the research of the type undertaken by Coughlin *et al* (1991) was that it failed to take into account that M&As would likely be influenced by a different set of location criteria when compared to genuinely new plants. Clearly, this issue is also of real interest to development agencies as public policy changes may be able to do more to influence new plant location than M&A location, with the latter influenced by the existing locations of the target firm.

2.15.16 In addressing this issue, Friedman *et al* (1992) examined location decisions of foreign multinationals using a conditional logit model with states as the choice set. Their study focused on new manufacturing plants and analysed where location choices varied with the nationality of the parent firm. The period studied was 1977-1988. Variables found to be significant and positive included market size, unionisation rates, promotional expenditures, unemployment rates, productivity, and transportation infrastructure; negative and significant were taxes and wage

rate. The research also found that the decision variables for firms of European and Japanese origins were different.

2.15.17 Hines (1996) examines whether US states that granted foreign tax credits influenced inward investors. The issue here was that the ability to apply foreign tax credits against home liabilities reduces an investor's incentive to avoid high tax foreign locations. State taxes were shown to significantly influence the pattern of FDI.

2.15.18 There are generic flaws with a number of studies summarised above. A key issue is whether foreign and domestic firms exhibit different behaviour. This was well addressed in an important study by Shaver (1998). Shaver makes the point that differences in behaviour between foreign and domestic firms are of real relevance to policymakers. Shaver also shows that in theoretical terms, differences in sub-national location patterns might be the result of differences in foreign firms with respect to the technologies being used, their client base, and perhaps with foreign firms wishing to cluster more amongst themselves. Fundamentally then the ownership advantages held by foreign firms may make them value location attributes differently from their domestic counterparts.

2.15.19 Shaver examined the location of all foreign-owned and domestic manufacturing firms in the US in 1987. The results showed locations patterns differed even when allowance was made for industry differences in the degree of FDI. Many state characteristics influencing inward FDI like gross state product, tax rates, incomes, state budgets for location marketing, also had an equal influence on US firms.

2.15.20 The basic model of Shaver examined investment profitability and links to agglomeration effects, priced variable inputs, and infrastructure measures. Potentially these variables should have impacted the profitability of foreign and domestically owned firms equally. However, Shaver shows there was a difference in the influence of these site attributes. He believed that this was because foreign investors had different sets of ownership specific advantages meaning that they did value some location attributes differently. This could have reflected different needs for imported goods; the presence of knowledge spillovers amongst foreign entrants; also that foreign firms could have disproportionately higher levels of buyer-supplier linkages with other firms in the foreign sector. Moreover, where foreign firms are comparative latecomers they had the opportunity to move to locations that had recently become more optimal, whilst domestic incumbents faced more frictions on movement.

2.15.21 The nature of Shaver's analysis meant that location factors that were found to be non-significant, resulted because both foreign and domestic firms were

influenced by the same things (for example, size of state economy, tax levels, state budgets on promotion etc). However, foreign entrants were found to be more dependent on imports, and tended to favour low unionisation attributes because they had a burden of uncertainty (liability of foreignness) in the new location. Then moving to a state with more flexibility in terms of labour conditions was seen to remove one area of potential cost problems. Importantly for this review, Shaver makes a strong case for the value of studying the location of foreign firms in particular, given differences in location attributes to their domestic counterparts.

2.15.22 Swenson (1997) also examined the US wide distribution of FDI but focused on the tax responsiveness of different investment types. The study analysed state foreign investment transactions between 1984 and 1994 to show whether state-level taxes influence the interstate distribution of inward investment. In similar vein to Friedman *et al* (1992), Swenson was interested in the tax responsiveness of different types of FDI. The study revealed that new plants and expansions were deterred by high levels of state taxes, but M&A activity seems to be positively impacted by high state taxes (i.e. in the case of M&A, firms are assumed to be targeting other needs such that the importance of taxes is less important). The statistically significant results revealed that aggregation of investment data may conceal the heterogeneity of location tax effects. Swenson estimated that a 1% increase in state taxes would cause 0.11% fewer new plants to come to that state, and 0.07% fewer expansions. With M&As an increase in state taxes would be associated with an average 0.065% increase in the number of M&As.

2.15.23 List (2001) examined the county distribution of FDI within one US state (California, investments made between 1983-1992). The study used a two step modified count data model to determine county level attributes that were conducive to attracting new foreign plants. The method used was of some interest because the two step process effectively removed from the analysis those counties that had very little FDI. This approach was useful because it differentiated between the factors that affect whether a location even gets into the consideration set in the first place. The research revealed the significance of previous counts of FDI in a county (i.e. showing some evidence of a snowballing effect), market size, an accessibility variable, and land area, each being positively associated with FDI occurrences. Higher input costs were shown to be a deterrent. One of the purposes of the study was to show whether more stringent environmental regulations negatively impacted FDI decisions, but in the California study this was shown not to be the case.

2.15.24 More recently there has been a great deal of work that has examined the distribution of FDI into China. For this review only a few studies are selected which highlight key issues

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- 2.15.25 Early work on the distribution of Chinese inward FDI was undertaken by Broadman and Sun (1997) who showed that the distribution of the FDI stock for year end 1992 was determined mainly by variables relating to gross provincial product, levels of infrastructure, literacy rates and coastal location. Chen (1997) in another analysis of FDI inflows into Chinese provinces found efficiency wages to be negatively associated with new inflows, but with transportation infrastructure being positively associated with new inflows.
- 2.15.26 Cassidy and Andreosso-O'Callaghan (2006) explored the spatial distribution of Japanese FDI in China. One of the contexts for this study was the strong skew in FDI in China towards some parts of the coastal region. The analysis was based on the year 1996 and the dependent variable described the stock of provincial FDI, and with significant independent variables relating to provincial GDP, levels of tertiary education, presence of inland waterways, and coastal location.
- 2.15.27 Coughlin and Segev (2000) used provincial data to estimate a model to explain the geographic pattern of FDI location in China since 1990. This paper also considered issues of spatial dependence, revealing that FDI in one province had positive effects on FDI in nearby provinces. Other than this, variables describing economic size, productivity and coastal location were positively associated with new investment whilst average wage, and the illiteracy rate were negatively associated with provincial success in attracting new investment.
- 2.15.28 Wei *et al* (1999) in another variation examined the determinants of the regional distribution of both pledged and realised FDI within China. Using a panel data set a long run relationship was found between the spatial distribution of FDI and a number of regional characteristics. Provinces with higher levels of international trade, lower wage rates, more R&D manpower, higher GDP growth, faster improvements in infrastructure development, more rapid advances in agglomeration, more preferential policies and closer ethnic links with overseas Chinese attracted more pledged FDI. In terms of realised FDI international trade propensity, wage rates, R&D manpower, information costs/investment incentives and FDI policies were important. In conclusion they show that because FDI is contracted and materialised at different times, and because there may be a spurious market seeking in pledged FDI, such regional characteristics as GDP growth, infrastructure improvement, and agglomeration advances tend to lose their explanatory power when explaining realised FDI. In consequence they argue that the economic, social and cultural conditions under which FDI is pledged may be different from those under which it materialises. Pledged investment might include an element of the spurious to improve market access and knowledge, whereas the realised investment is influenced more by comparative advantage.

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- 2.15.29 Hon *et al* (2005) looked at the driving forces behind the regional distribution of FDI inflows into China between 1998 and 2003. They undertook a factor analysis revealing that the overall socio-economic environment in the administrative regions of China were a fundamental determinant of regional disparity in FDI performances.
- 2.15.30 Wu (2000) looked at the intrametropolitan scale of FDI location. This study used GIS techniques to examine precise locations within a city area. The analysis suggested that intra-urban location was explained by variables describing highway accessibility, access to major ranking hotels and the status of the economic and technological development zone. Also important were conventional location attributes described in terms of access to rail terminals, agglomeration economies and labour markets. A key contribution here was that Wu shows how the location of FDI was actually changing the functions of cities.
- 2.15.31 Finally here, there have been a series of studies that have examined the regional distribution of FDI in European states. For example, for Italy, Mariotti and Piscitello (1995) developed a cross regional multiple regression model. The focus in this study was on cross border takeovers involving Italian industrial firms between 1986-91. Their research suggested that the spatial distribution of inward FDIs were mainly governed by information costs, and not just variables describing production and transport costs. In the period 1986-1991 investors into Italy were shown to be keen to reduce information costs i.e. locating in provinces closest to the core or those closest to a parent nation where it was adjacent to the Italian location. There was also shown to be a preference for Italian provinces with a pre-existing and long lived presence of the worlds leading MNEs. These could be sources of cost free information for new entrants. Mariotti and Piscitello argue that actions to reduce information costs favour FDI clustering in specific areas, which itself reinforces geographical polarisation in the host state.
- 2.15.32 Basile (2002) examined the locational determinants of FDI inflows in Italy. The results showed that the number of new foreign entrants is fostered by the provincial characteristics including: level of infrastructure, demand level, education attainment and prior concentration of manufacturing plants (in particular, of foreign-owned manufacturing plants). The results also confirmed that high labour costs hindered foreign entry.
- 2.15.33 Boudier-Bensebaa (2005) examined the determinants of FDI at a regional level in Hungary and more particularly explored the importance of agglomeration effects among determinants. The results here, using a panel data set, suggested that counties with higher labour availability, greater industrial demand and higher manufacturing density attracted more FDI. However, higher unit labour costs were

also found to attract FDI. In addition, inter-industrial agglomeration economies and infrastructure availability were found to be important.

2.15.34 Deichmann and Socrates (2003) examined the uneven regional distribution of FDI within Turkey. They demonstrated that in the Turkish case that agglomeration, depth of local financial markets, human capital, and coastal access dominated location decisions for the aggregate sample of foreign investors in Turkey. This study revealed no evidence that public investment was successful in attracting MNEs to particular regions. Also importantly, the location determinants varied greatly by broad industrial category, investment composition, and origin-country characteristics, including income category and region.

2.15.35 Iwasaki and Suganuma (2005) examined the regional distribution of FDI into Russia using a panel data set for 1996-03. They revealed that resource endowments, market factors and social development factors were significant location factors as were variables describing climate and regionally discriminatory policies towards FDI (for other studies see Deichmann and Socrates, 2003).

2.16 UK studies of distribution of FDI

2.16.1 Research exploring the geography of FDI in the UK have been hampered by a lack of good quality data to examine the phenomenon (see Hill and Munday, 1992a for a review). Stone and Peck (1996) in this regard state that:

“Published statistics relating to FDI are in a number of respects deficient, hampering efforts at analysing the performance of new and existing foreign manufacturing plants, particularly at a spatially disaggregated scale” p.56.

2.16.2 Moreover, few regions kept accurate records of the new inward investment locations during the 1970s-1990s with the exception of Wales, Scotland, Northern region and Northern Ireland. Even at the time of writing, knowledge on the changing geography of FDI in the UK is at best partial, with extant datasets tending to give better coverage of the manufacturing, as opposed to the growing FDI services sector. In this regard the situation has changed in recent times with access to data from the Annual Respondents Database (ARD) through the ONS Virtual Microdata Laboratory. The later review of UK trends in FDI (Section 4) provides an up-to-date review of recent UK statistics from sources such as the ONS, UKTI, and private sector compilations of FDI decisions.

2.16.3 By way of introduction, the largest proportion of FDI in manufacturing was traditionally found in the south eastern region of England. In the early 1960s as

much as half of UK foreign owned manufacturing company employment in the UK was in this region (Hill and Munday, 1992a). Blackburn (1978) also shows that by 1968 some 50% of US plants by number were found in the south east of England. Many of the key location studies have then focused on manufacturing. An early exception was Dunning and Norman (1979) who applied the eclectic model in examining the determinants of MNE office location in the UK. The factors that they noted as important in these location decisions included market size, resource availability, and a good communications network.

2.16.4 The geography of FDI has changed with the 1970s and 1980s seeing a shift of foreign manufacturing activity away from the UK core region towards more periphery regions. In the UK context the geographical shift of foreign manufacturing to the periphery occurred at a time when regional policy instruments were being used to dissuade new investment in the south east (Industrial Development Certificates) and encourage new investment elsewhere. The drift towards the periphery has also been influenced by the location marketing efforts of RDAs, in many cases competing with one another, with potential limits on the net UK-wide benefits..

2.16.5 Hill and Munday (1992a) showed that whilst the changing geography of overseas investment in the UK had been acknowledged (Dicken and Lloyd, 1976; McDermott, 1977) there was little empirically based research that examined the new and changing distribution of overseas investment. They also argued that without knowledge of the underlying determinants that underlie foreign company location decisions in the UK, it was unlikely that the potential economic consequences of such investments could be examined, with an expectation of a strong link between determinants and types of economic impacts. It was also argued that research into the distribution of FDI was important because the attraction of foreign investment was, during the 1970s and 1980s at least, central to regional economic policy.

2.16.6 Hill and Munday (1992a) used data from the Business Monitor *PA1002* Census of Production series to explore the changing geography of foreign direct investment in the UK between 1963 and 1987 and confirmed the growing shares of foreign manufacturing investment in all regions except the south east during this period. They then used data from the DTI (Invest in Britain Bureau) to examine regional performance in terms of new projects and planned new jobs between 1979-1989, developing an index of regional inward investment success showing the relatively strong performance of Northern England, Scotland and Wales over the period. In a pooled regression they showed that regional performance in terms of inward investment success was largely determined by variables describing the presence of regional preferential assistance and ease of access to markets. Their labour cost variable was not found to be significant but had the correct sign. It was not possible

to develop a variable describing unit labour costs over the period which might have given an improved result.

2.16.7 Taylor (1993) used a multivariate statistical analysis based on a Poisson model to examine the spatial distribution of Japanese manufacturing establishments in the UK in two periods 1984-1988 and 1989-1991. This analysis acknowledged the general reasons for the Japanese presence in the UK following trade pressure from the EU, but sought to explore the county distribution that occurred following a boom in Japanese investment over the period. Moreover, Taylor was interested to explore the impact of Assisted Area status on the emerging distribution of Japanese firms in the UK. Using the number of Japanese manufacturing establishments in each county as a dependent variable, Taylor showed that these investors had been influenced by Assisted Area status and the existing industry mix of county locations. Similar to Hill and Munday (1992a), Taylor could find no evidence that disparities in regional labour costs were an important influence, but that labour availability was an important factor in the 1989-1991 period.

2.16.8 Each of the studies above had some problems. In both cases the data used aggregated different types of inward investment. Moreover the approach of Taylor did not take into account that Japanese inward investors could have been influenced by the existing presence of other Japanese investors in an area. This was likely to have been important (see Peck, 1990, Munday, 1990a).

2.16.9 Stone and Peck (1996) provided a more thorough analysis of the regional performance in attracting FDI that used more bespoke data sources for a selection of key inward investment locations. The paper analysed regional FDI performance alongside domestic firm performance, and undertook a components of change analysis that examined the dynamics of FDI change within the selected regions. The research revealed a performance gap between Northern Ireland and Scotland, and then Northern England and Wales, and showed that the significance of acquisitions to foreign owned manufacturing sector growth in these regions. Peck and Stone showed that there was a differential impact upon regional foreign owned manufacturing sector performance of FDI by country/global region of origin, but that associating this with specific host region conditions was difficult because the four regions each had assisted area status and with small differences existing between them in relation to variables describing wage rates, financial incentives, and labour availability.

2.16.10 Finally here, it was noted above that Billington (1999) also considered the sub-national distribution of FDI in his UK analysis. Here the dependent variable was FDI project successes at the regional level. Billington found that high unemployment was found to encourage FDI, this expected to be a proxy for labour

availability. Other significant variables were population density, and with unit labour costs having a negative effect.

2.16.11 The work on the UK subnational distribution of FDI tends to reflect results in the US. Generally variables describing regional production conditions are important. In the UK case, however, there has been rather less analysis that has examined the importance of existing agglomerations of FDI and other manufacturing investment in location decisions together with more general issues of spatial dependence. Moreover, most of the studies have found it difficult to develop variables which accurately describe regional production conditions, particularly variables that pick up on market access.

2.17 Research on determinants of FDI into Wales

2.17.1 Econometric work looking at Wales' relative success in attracting foreign direct investment is very limited. Hill and Munday (1991) examined the success of Wales in attracting high levels of new inward investment during the eighties. They found that the UK/Wales earnings differential was the most important determining factor in explaining high Welsh shares of UK foreign investment and associated jobs. High relative levels of regional preferential assistance and infrastructure spending also contributed to the success of Wales. However, this analysis was seriously impacted by the small number of observations available.

2.17.2 This noted much of the work on Wales has focused on interview/questionnaire or case type studies that have asked investors why the region is preferred. Munday (1990a) in a study of Japanese investors in the region found mixed motivations but with most investors hinting at labour quality and productivity as important, as well as relatively easy road access to markets in the south east of England. These types of results were also reflected in earlier consulting reports (see for example A.D.Little Limited, 1986).

2.17.3 In the Welsh case a more interesting stream of work has focused on issues surrounding the attraction of large scale inward investments, and in particular the existence of bidding wars to attract such capital. For example, Phelps and Tewdwr-Jones (2001) examine inter-regional competition to attract large inward investments using LG at Newport in South Wales as one case study. They highlight the importance of the overall package of aid as a key determinant of the decision. We return to these specific issues in Stage 3 of the review.

2.18 A summary of key FDI determinants

2.18.1 Table 2.2 summarises some of the key determinants of FDI as identified by the review. The table also provides brief comments on the likely effect of each variable on FDI flows, as well as whether there is any consensus in the literature relating to the particular determinant/variable. This table does not include a full list of all FDI determinants, as these can vary considerable by country, sector and by firm.

Table 2.2 Key determinants of FDI

Determinant/Variable	Consensus	Likely direction of causation
Host market size/growth rate (actual and potential)	Yes	Positive
Labour costs (unit labour costs)	Yes	Negative, but significance may vary by measure used.
Labour availability/levels of unemployment	No	Mixed -would expect this to be positive, but some research has found an avoidance of locations with high unemployment and poverty levels. Expect direction to vary by industry.
Flexibility of labour market and skills)	Yes	Positive (may be more significant for particular economies or sectors)
Unionisation rates etc	No	May expect effects to be negative, but some studies have found insignificant or positive impacts.
Tax conditions	Some	Negative, but may be insignificant.
Exchange rates (appreciation)	No	Impacts uncertain (negative)
Industry agglomeration	Yes	Positive (but significance may vary by sector)
Infrastructure	Yes	Positive, but significance may vary depending on whether hard or soft infrastructure, and by sector.
Promotional Agency expenditures	Some	Positive, but may be difficult to identify/measure.
Institutional conditions/quality	Some	Positive, but may be difficult to identify/measure.
Host country risk	Yes	Negative (but note different components of risk)
Industry revealed comparative advantage (relative exports over imports)	Yes	Generally positive (but significance may vary by sector). Also in some cases imports seen as a complement to FDI as opposed to substitute.
Industry competitive advantage	Yes	Positive.
Financial incentives/grants	Yes	Positive, but generally viewed as secondary location factor.

2.19 FDI durability and factors influencing exit

2.19.1 The focus of the above literature review has been on factors seen to determine inward investment from MNEs. However, there is also value in considering the factors connected to the durability of inward investors. Stage 2 of the report also considers issues of embeddedness in terms of the impacts of FDI. Here, however,

the focus is on studies that have explored factors determining exit and durability i.e. the determinants of why MNEs stay or leave a location.

2.19.2A key issue that is addressed in the 'exits' literature is why there is a specific concern over the exit of foreign capital in particular. There has been a substantial body of work in the US and the UK that has addressed manufacturing exits in general. Key issues in this literature reflect the impact of general exits on national productivity, regional restructuring and employment change. Moreover, understanding rates of exit are important in studies that explore the evolution of industry populations over time (see for example Geroski, 1995).

2.19.3A focus on foreign manufacturing exits might be justified in the knowledge that foreign-owned plants through their ownership advantages will have productivity advantages over their domestic counterparts (Davies and Lyons, 1991). Then there is some expectation that foreign exits may have particularly important consequences for regional productivity growth. Associated with this is the recognition that foreign-owned firms may have (at entry) had a role in improving allocative efficiency in an economy, perhaps by breaking down domestic monopolies. The corollary is that exit might then be associated with a worsening of allocative efficiency, and an increase in concentration levels.

2.19.4This noted, much of the literature on foreign manufacturing exit in the UK has been contextualised on levels of public support given to inward investors, and the extent to which this represents an efficient use of funds. This is further contextualised on several well publicized foreign manufacturing exits during the 1990s including LG in South Wales, and Siemens in the North East, both of which received substantial public subsidy. There have long been concerns that automatic and discretionary grant assistance effectively attracted transient cost sensitive poorly embedded investment to peripheral areas. In consequence the attraction of foreign capital could act to worsen the branch plant syndrome so evident in many of the UK's more peripheral regions and deepen the cycle of industrial dependency.

2.19.5These and related issues have led to a series of studies that have examined whether foreign manufacturing employment is 'more stable' than that in the domestic sector, and research exploring the characteristics of foreign exits. In what follows the key studies mostly from the UK are reviewed.

2.19.6Driffield (1999a) examined a series of industry specific factors linked to foreign manufacturing entry and exit. He concluded that higher rates of exit could be associated with low past levels of profitability; relatively low levels of industry growth; and low levels of net capital spending (this possibly associated with sunk costs, and perhaps issues of asset specificity). This study also investigated levels of unionization in reference industries, this potentially increasing the costs of exit.

There was also an examination of scale issues and the nature of the ownership advantage enjoyed by the foreign industry in question; here the argument was that higher levels of net ownership advantages reflected in high productivity levels could result in lower levels of exit.

2.19.7 Driffield concluded that foreign firms are unlikely to exit more successful industries, or industries where the foreign sector has a strong productivity advantage over its domestic counterpart. Driffield also revealed that where FDI location is strongly influenced by employment subsidies that their presence could be short run, such that regional location advantages in terms of subsidy and lower factor costs may not deter exit. This links closely to recent work by Gorg (2004) who argued that low potential exit costs may be an important location determinant for US MNEs. One issue with both the Driffield and Gorg studies were that they took no account of the internal structure of the foreign manufacturing firms, for example, whether exit rates can be associated with the position of a foreign subsidiary in the parent firm network.

2.19.8 A further set of studies have examined the stability of the foreign manufacturing sector compared to its domestic counterpart. A good early study was that by McAleese and Counahan (1979) which concluded from a study of exit rates in foreign and domestic firms in Ireland that MNEs were no more footloose than their domestic counterparts. Indeed studies in the UK regions have argued for greater stability in the foreign sector at times of domestic economic problems. This pattern is also evident from foreign/domestic manufacturing output and employment indices developed from the UK Census of Production during the 1980s (see Hill and Munday, 1994).

2.19.9 A particularly useful study in this general area was Stone and Peck (1996) who examined the components of change of foreign-owned manufacturing plants across 4 UK regions. This work covering the period 1979 to 1993, concluded that regional successes in terms of new foreign investment were not just determined by the opening of new foreign plants, but also in terms of strong performances in other components of change such as closures, acquisitions, exits, and in-situ changes. The results for Wales from the Stone and Peck study are shown in Table 2.3.

2.19.10 McCloughan and Stone (1998) examined in more detail the life duration of foreign manufacturing subsidiaries in the Northern region of England. They specifically deal with plant characteristics associated with the risk of exit. Their study built on the foundation work of Li (1995) in the US who explored the survival of foreign subsidiaries in the US computers and pharmaceutical industries, and highlighted higher exit probabilities for acquisition based entrants.

Table 2.3: Components of foreign manufacturing employment change 1979-1993; Wales

	Plants	Employment
Foreign manufacturing in 1979	217	58,900
New creations (+)	129	17,000
Closures (-) assumed complete exits	59	6,700
Acquisitions (+)	118	22,600
Divestment (-)	53	12,400
In situ change (+)	52	5,500
In situ change (-)	64	16,800
Stock 1993	348	68,000

Source: Stone and Peck (1995)

2.19.11 McCloughan and Stone then examined a total of 252 foreign manufacturing plants in the Northern region (1970-1993). The method employed combined bespoke data from the Northern region foreign-owned manufacturing database (including categories of data relating to location, ownership, date of establishment, ownership changes, closure dates, employment figures and industry class), with data from the *Census of Production* relating to industry concentration and industry growth.

2.19.12 They concluded that greenfield entrants were characterized by a lower risk of failure than acquisition entrants. Other factors affecting the risk of closure were plant size (see below Richbell and Watts, 1996), and levels of concentration in the reference industry. They explored whether the hazard function facing foreign firms displays negative duration dependence i.e. the longer the foreign plant survives, the lower its risk of failure becomes. They contend that this might be the case because foreign firms use their ownership advantages gradually. (There is also the possibility here that foreign firms may develop new ownership advantages post entry.) The second issue tested is whether greenfield plants had a more robust survival performance than acquired plants. They show this could be the case because;

- The M&A literature suggests integration of acquired facilities is a complex process;
- That acquisition is sometimes undertaken solely with the aim of reducing industry capacity;
- That managerial links between greenfield ventures and the foreign holding company may be stronger than is the case between management in acquired subsidiaries;
- That greenfield firms on balance are more likely to have the most up to date technology and facilities;
- That greenfield plants are more likely to benefit from subsidies.

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- 2.19.13 One point to add here is that greenfield start-ups may also enjoy better labour conditions. For example, Japanese subsidiaries coming to Wales during the 1970s and 1980s were often able to negotiate special deals with trades unions with more flexible elements (Munday, 1990a; Morris *et al.*, 1993).
- 2.19.14 Wren and Jones (2003) specifically examined whether reinvestment in foreign plants (in the Northern region) impacted upon survival prospects. This study was contextualised on the framework developed by Phelps *et al* (2003) who suggested that embeddedness was linked to: corporate status and function; skills and training demands placed by the foreign subsidiary; levels of repeat investment; R&D activities; and local supply characteristics. In the case of foreign owned plants, Wren and Jones did not find that reinvestment levels could be connected to higher levels of embeddedness.
- 2.19.15 The studies reviewed above have used, in large measure, econometric techniques to explore exit and survival issues. However, case study approaches have also been a useful means of studying exit. A good example is Richbell and Watts (1996) who study cross boundary closures in the EU. The focus here was on 'events' where the MNE in question had a choice between closing a plant in one location as opposed to another. Then the research was not about shutting down production lines or peripheral activities but more about restructuring and rationalization within MNE groups. (It is noted that a number of recent foreign closures in Wales have involved rationalization to a group plant in another EU state.) The case approach is useful because it examines the individual firm dynamics and politics that drive exits. The four cases examined in the study provide evidence that scale was important in each case i.e. that production was centred on larger plants in the MNE groups. The cases also hint at the importance of total labour costs, and labour flexibility.
- 2.19.16 Finally here a recent paper by Bernard and Jensen (2007) provided a thorough analysis of exit factors in the US, and attempted to build in international factors, and firm specific characteristics. The paper considered domestic manufacturing plants including those operated by MNEs. Key issues explored by this paper included:
- Whether the existence of other plants within the firms affect shutdown probability i.e. are multiplant firms more prone to closure?
 - Does the fact that a firm has operations outside the US affect survival of the domestic plant?
 - Do changes of ownership affect survival chances?
- 2.19.17 They adopted a complex system of industry controls and showed that, once plant and industry attributes are controlled for, then plants owned by multiplant firms and US MNEs are more likely to close. Removing the controls effectively reversed the result. They showed that particularly vulnerable are plants where
-

production techniques vary from those in the rest of the organization. They also highlighted that survival probabilities increased where there are high capital labour ratios, high export ratios, and higher levels of earnings.

2.19.18 Our review reveals that there has been very little work undertaken in Wales on issues of foreign subsidiary survival. This is surprising given the very large level of resources that have been used to attract foreign capital to Wales. However, the Welsh Assembly Government has now funded research specifically to examine foreign manufacturing exits involving Swansea and Cardiff universities and this will report during the Autumn of 2008.

2.20 Conclusions

2.20.1 The literature on determinants of FDI is very broad. However, there are several issues that come through from the review that are relevant for Wales. A key issue in a large number of studies reviewed is one of aggregation. Studies, with a few notable exceptions, tend to group different types of FDI decision together. Development agencies are more interested in determinants literature that speaks to influences on greenfield investment rather than M&A activity. For this reason deriving policy-relevant conclusions from the review is far from easy.

2.20.2 In this vein much of the determinants literature shows the importance of macro-economic conditions as opposed to interventions to support specific investors. These issues are returned to in Stage 3 of the review which considers how far different types of intervention are in influencing international location decisions.

2.20.3 For Wales it is rather difficult to comment precisely on why the region was selected by various MNEs, in preference to other UK regions. Individual firm motivations differ from one another, and there are real problems in identifying the underlying location rationales from those who actually made the decision. The review suggests that in the Welsh case variables relating to infrastructure and market access, labour availability and costs, and the availability of regional aid in various forms have been important.

3 Stage 1 review: Global FDI Trends

3.1 Introduction

3.1.1 This section of the report provides a review of trends in global FDI examining recent patterns of growth, spatial and sectoral distribution. The section then focuses in on FDI trends in the EU. Commentary in this part of the report is limited to trends in inward FDI stocks and flows. Data and commentary on outward FDI can be found in the key data sources used for this chapter (i.e. the UNCTAD world Investment Reports, and in the European Union FDI yearbooks). Section 4 of the report then focuses on FDI into the UK and UK regional trends in FDI.

3.1.2 Box 3.1 provides a brief glossary of key terms/phrases used in chapters 3 and 4, together with the source of information.

Box 3.1 Glossary of terms.

Phrase	Description
Basic prices	Prices excluding taxes and subsidies on products (<i>Source: ONS</i>).
Current/Constant prices	Constant prices refer to volume measures whose values are derived prices by applying to current quantities, prices pertaining to a specific base period. They allow figures to be represented so that the effects of inflation are removed. The values for each time period are expressed in terms of the prices in some base period (<i>Source: ONS</i>). Current prices are the actual or estimated recorded monetary value over a defined period for a group of industries or products. They show the value for each item expressed in terms of the prices of that period (<i>Source: ONS</i>).
Disinvestment	Disinvestment is the withdrawal of direct investment capital. The most frequent cases are where inter-company debt (e.g. a loan) is paid back or where the direct investor sells participation (e.g. shares) it had invested in the direct investment enterprise (<i>Source: Eurostat EU FDI Yearbook 2007</i>).
Equity capital	Equity capital is the foreign direct investor's purchase of shares of an enterprise in a country other than that of its residence (<i>Source: UNCTAD, World Investment Report 2007, pg.245</i>)
Foreign direct investment (FDI)	"...A cross-border investment made by a direct investor with the intent of obtaining a lasting interest in an enterprise resident in another country (direct investment enterprise). International investment is classed as FDI when an investor owns 10% or more of ordinary shares

	or voting rights in an incorporated or unincorporated enterprise abroad respectively ...” (Source: Eurostat EU FDI Yearbook 2007).
Foreign direct investment inflows/ outflows	“...FDI flows are direct investment transactions from the reporting to the partner country (outflow or outward FDI) and from the partner to the reporting country (inflow or inward FDI). They include the net purchase by the investor of the investment company’s equity capital, plus the direct investor’s share in the company’s reinvested earnings, plus other capital, which is the net increase in trade and other credit, including the net purchase of debt and other financial instruments...” (Source: Eurostat EU FDI Yearbook 2007). “...For associates and subsidiaries, FDI flows consist of the net sales of shares and loans (including non-cash acquisitions made against equipment, manufacturing rights etc.) to the parent company plus the parent firm’s share of the affiliate’s reinvested earnings plus total net intra-company loans (short and long-term) provided by the parent company. For branches, FDI flows consist of the increase in reinvested earnings plus the net increase in funds received from the foreign direct investor...” (Source: UNCTAD (UNCTAD.ORG “Sources and Definitions”))
Foreign Direct Investment stocks	FDI stocks are a measure, at a specific point in time, of the value and composition of a country’s FDI assets (outward stocks, or claims on the rest of the world) and of its FDI liabilities (inward stocks from the rest of the world) (Source: Eurostat EU FDI Yearbook 2007).
Gross fixed capital formation	Investment in assets which are used repeatedly or continuously over a number of years to produce goods. For example, machinery used to create a product (Source: ONS).
Gross value added	Gross value added is the difference between output and intermediate consumption for any given sector/industry. That is the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production (Source: ONS).
Intra-company loans	Intra-company loans, or intra-company debt transactions, refer to short or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises (Source: UNCTAD, World Investment Report 2007, pg.245).
Mergers and Acquisitions	“...As opposed to Greenfield investments, where investment is made in building up a new facility, mergers and acquisitions (M&As) involve a change of assets, representing an on-going concern, from domestic to foreign hands. The investor acquires part or all, or merges with an existing foreign direct investment firm. The latter may be privately or state owned as privatisations involving foreign investors count as cross-border M&As and entail a change in the control of the merged or acquired firm. In the case of a cross-border merger, the assets and operations of two firms belonging to two different countries are combined to establish a new legal entity...”

	(Source: Eurostat EU FDI Yearbook 2007).
Oligopoly	When a few firms dominate a market. Often they can together behave as if they were a single monopoly, perhaps by forming a cartel. Or they may collude informally, by preferring gentle non-price competition to a bloody price war. Because what one firm can do depends on what the other firms do, the behaviour of oligopolists is hard to predict. When they do compete on price, they may produce as much and charge as little as if they were in a market with perfect competition (Source: <i>The Economist</i>, <i>AZ of Economic Terms</i>. http://www.economist.com/research/Economics/alphabetic.cfm?letter=Q)
Private Equity	"...When a firm's shares are held privately and not traded in the public markets. Private equity includes shares in both mature private companies and, as venture capital, in newly started businesses. As it is less liquid than publicly traded equity, investors in private equity expect on average to earn a higher equity risk premium from it..." (Source: <i>The Economist</i>, <i>AZ of Economic Terms</i> http://www.economist.com/research/Economics/alphabetic.cfm?letter=P#privateequity
Reinvested earnings	Reinvested earnings comprise the direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates or earnings not remitted to the direct investor. Such retained profits by affiliates are reinvested (Source: UNCTAD, <i>World Investment Report 2007</i>, pg.245).
Transfer pricing	The price that is assumed to have been charged by one part of a company for products and services it provides to another part of the same company, in order to calculate each division's profit and loss separately (Source: UNCTAD, <i>World Investment Report 2007</i>, pg.245).
Transnationality index	Can vary but normally taken to be the average of three ratings (MNE foreign assets: total assets; foreign sales: total sales; foreign employment: total employment).

3.2 The recent profile of global FDI

3.2.1 In 1990 global FDI inflows (all at current prices, and in US dollars unless otherwise stated) were an estimated \$202bn increasing to \$489bn in 1997, and rising to a peak of \$1,411bn in 2000. This was followed by a slump between 2000 and 2003 due to the global economic slowdown and the end of a strong merger and acquisition (M&A) boom. A strong recovery took place in FDI activity between 2004 and 2006, particularly in developed economies. In 2006 global FDI inflows were estimated at \$1,306bn, an increase of 38 % on the 2005 levels of \$946bn (UNCTAD, 2007).

Table 3.1 Selected indicators of global FDI and international production, 1990-2006

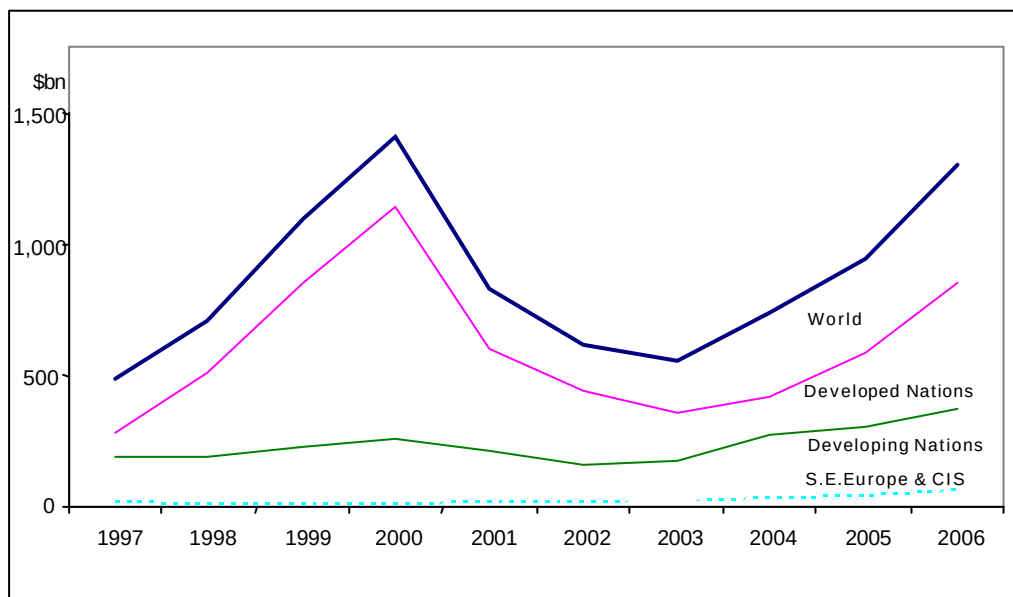
	Value at current prices (billions of US dollars)		Annual growth rate (%)		
	1990	2006	1991-1995	1996-2000	2006
FDI Inflows *	202	1,306	22.0	40.0	38.1
FDI Outflows*	230	1,216	17.3	36.4	45.2
Inward FDI stock*	1,779	11,999	9.4	17.4	19.4
Outward FDI stock *	1,815	12,474	10.6	17.3	17.9
Income on inward FDI*	76	881	29.2	16.3	16.0
Income on outward FDI *	120	972	17.4	11.8	15.1
Cross-border M&As	151	880	24.0	51.5	22.9
Sales of foreign affiliates	6,126	25,177	8.8	8.4	17.7
Gross product of foreign affiliates	1,501	4,862	6.7	7.3	16.2
Total assets of foreign affiliates	6,036	51,187	13.7	19.3	20.1
Exports of foreign affiliates	1,523	4,707	8.5	3.3	12.2
Employment of foreign affiliates (in thousands)	25,103	72,627	5.5	11.5	13.9

* Note: Whilst global FDI inflows (stocks, and income) should theoretically equal global FDI outflows (stocks, and income), differences arise due to recording and accounting variations between countries.

Source: UNCTAD (World Investment Report, 2007, table I.4. page 9)

- 3.2.2 Figure 3.1 focuses on movements in FDI inflows after 1997. The figure reveals that after reaching a peak level of \$1,411bn in 2000 global FDI inflows then fell for three years reaching a low of \$564bn in 2003. There was then an upward trend in global FDI inflows between 2003 and 2006 due to factors such as the increasing level of corporate profits and higher stock prices increasing the value of M&A activities (UNCTAD, 2007). There was an estimated global FDI inflow of \$1,306bn in 2006. This was the first time since 2000 that levels reached the \$1trn mark.
- 3.2.3 It should be noted that the weakening dollar has boosted the nominal US dollar-denominated totals. The Economist (2007) calculated that at current prices, global FDI inflows in 2006 were only 5% below the peak level reached in 2000; in constant prices in 2006 they were still some 26% below the 2000 level (constant prices using US dollar-based import price indices, rather than in terms of current US dollars).
- 3.2.4 Over the period 1990-2006 the global inward FDI stock grew from \$1,779bn to \$11,999bn (UNCTAD, 2007). The 2006 level of \$11,999bn was an estimated 26% of world GDP (Economist, 2007, p.26). In the same period the assets of foreign affiliates of MNEs grew from \$6,036bn to \$51,187bn, whilst employment in these affiliates increased from 25.1 million to 72.6 million.
- 3.2.5 FDI inflows have grown in all regions- developed, developing and the transition economies, over the last decade (see Figure 3.1). M&As make-up the largest contribution to overall FDI inflows, being of greater value than greenfield investments or organic growth within the MNEs themselves over the last decade.

Figure 3.1: FDI inflows by global region



Source: UNCTAD

- 3.2.6 Developed countries as a whole (particularly the U.S. and Western European countries) accounted for 65.6% of global FDI inflows in 2006, which was a lower proportion than that in 2000 (where developed countries accounted for 81.2% of all global FDI inflows). The proportion of FDI inflows invested in developing nations increased over this time from 18.1% to 29.0% highlighting their growing importance.
- 3.2.7 The continuing predominance of the developed world in global FDI inflows was partly explained by the high proportion of M&As in this area. Table 3.2 shows that cross-border M&As to the EU, U.S. and Japan were estimated at \$606.9bn in 2006, up 13% on levels in 2005. This growth in the value of M&As was partly attributable to the increasing strength of stock markets up to 2006, combined with favourable financing conditions worldwide (low debt-financing costs with an increased supply of credit as a result, and high corporate profits).
- 3.2.8 M&As during this time were primarily carried out through cash and, increasingly, debt financing (where previously they had been achieved by an exchange of shares). The cost of equity capital remained significantly higher than the cost of debt financing moving corporate strategy towards using borrowings and internal funds (instead of holding excessive equity capital).

Table 3.2: Cross-border M&A activity: estimated sales, 2000-2006 (\$Bn)

Sales							
	2000	2001	2002	2003	2004	2005	2006
Developed states	1,070.9	504.9	322.5	244.4	317.4	604.8	728.0
<i>of which:</i>							
European Union 25	601.4	221.7	208.8	126.0	178.8	429.1	432.1
United States	324.4	184.9	73.2	69.7	81.9	105.6	172.2
Japan	15.5	15.2	5.7	10.9	8.9	2.5	2.6
Developing states	70.5	85.8	44.4	40.2	53.1	94.1	127.4
<i>of which:</i>							
Africa	3.2	15.5	4.7	6.4	4.6	10.5	17.6
South, East and South-East Asia	21.1	33.1	16.8	20.2	24.2	45.1	53.7
Latin America and the Caribbean	45.2	35.8	22.4	12.1	23.7	24.1	37.6
West Asia	1.0	1.3	0.5	1.4	0.6	14.1	17.9
Commonwealth of Independent States and South-East Europe (Transition Economies)	2.4	3.3	2.9	12.4	10.1	17.3	25.1
World Total	1,143.8	594.0	369.8	297.0	380.6	716.3	880.5

Source: UNCTAD (GlobStat database: <http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1>)

3.2.9 It should be noted that when making year-on-year comparisons the figures may be subject to distortion due to substantial mega-deals/ or mega-mergers (i.e. those with a value of more than \$10bn).

3.2.10 As a proportion of the total value of FDI inflows the contribution of M&As, although still large, had decreased since 2000. During the boom year of 2000 M&A activity globally amounted to \$1,143.8bn or 81.0% of the total FDI inflow of \$1,411bn. In 2005 this proportion had decreased to 75.7% (M&A \$716.3bn; FDI inflows \$946bn), and by 2006 had dropped to 67.4% (M&A \$880.5bn; FDI inflows \$1,306bn).

3.2.11 As M&A activity merely changes the ownership of global assets this indicates that FDI to set up new business was at a greater level in 2006 than the previous year. This partly explains the increasing overall contribution of developing economies in total FDI flows in 2006 (see above) as MNEs increasingly set up low cost production bases in the developing world.

3.3 Global FDI stocks and flows: sectoral analysis

3.3.1 This subsection examines the sectoral composition of the global FDI stock and recent FDI flows.

3.3.2 Table 3.3 shows that between 1990 and 2005 the value of FDI inward stock in the primary sector decreased slightly as a proportion of all FDI inward stock (from 9.5% in 1990 to 8.0% in 2005). In manufacturing the proportionate value fell markedly (from 41.3% to 30.1%) during this time, while the service sector experienced an increase (49.2% to 61.9%). Even in developing states more than half of the stock of FDI is now in services (59.3%).

Table 33: FDI world inward stock proportion by sector (percentage)

	1990			2005			
	Developed countries	Developing economies	World	Developed countries	Developing economies	South-East Europe and CIS	World
Primary	9.7	8.5	9.5	7.4	8.9	20.2	8.0
Manufacturing	40.7	44.2	41.3	29.6	31.7	33.1	30.1
Services	49.7	47.3	49.2	63.0	59.3	46.8	61.9
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All (\$bn)	1,436.8	328.0	1,764.8	7,431.7	2,257.9	187.1	9,876.8

Source: calculated from UNCTAD "World Investment Report 2007" Annex table A1.9

3.3.3 The sectoral pattern of FDI inflows has also changed. Here three year periods are taken to smooth out year on year fluctuations. Table 3.4 shows that between the

periods 1989-1991 and 2003-2005 the value of FDI inflows in the primary sector increased as a proportion of all FDI inward flows (from 7.5% to 13.0%). During this time the corresponding proportion for manufacturing FDI inflows globally had decreased (from 37.3% to 24.8%), and services increased (55.2% to 62.2%).

Table 34: FDI inflows proportion by sector (percentage)

	1989-1991			2003-2005			
	Developed countries	Developing economies	World	Developed countries	Developing economies	SouthEast Europe and CIS	World
Primary	6.5	12.2	7.5	14.7	8.2	19.0	13.0
Manufacturing	34.0	51.9	37.3	17.9	40.0	30.2	24.8
Services	59.5	35.9	55.2	67.4	51.8	50.8	62.2
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All (\$m)	139,111	31,510	170,620	468,756	205,100	26,434	700,290

Source: calculated from UNCTAD "World Investment Report 2007" Annex table A.I.11

3.4 The world's largest firms

- 3.4.1 Not only has the scale of the global FDI stock increased, but the level of assets held by the largest global firms has increased.
- 3.4.2 It is estimated that in 2005 the largest 100 MNEs alone had foreign assets of \$4,732bn and employed 8.0m people overseas (UNCTAD, WIR, 2007, p.25 table I.10). The largest global corporations are made up of firms with mostly US and Western European origins, and are typically involved in the telecommunications, electronics, automotive and petroleum sectors (see Table 3.5).
- 3.4.3 The world's largest MNE on the basis of value of foreign assets is General Electric of the United States, but size rankings change in terms of criteria adopted. For example, Siemens AG employed around 90% more people overseas than General Electric in 2005 (296,000 compared to 155,000).

Table 35: The world's ten largest multinationals ranked by foreign assets, 2005

Company	Source	Industry	Foreign assets \$bn	Foreign Employment	Transnational Index*
General Electric	US	electronics	412.7	155,000	70
Vodafone Group Plc	UK	telecommunications	196.4	51,052	8
General Motors	US	automotive	175.3	194,000	85
British Petroleum Plc	UK	petroleum	161.2	78,100	16
Royal Dutch/Shell Group	UK/ Netherlands	petroleum	151.3	92,000	29
ExxonMobil	US	petroleum	143.9	52,920	38
Toyota	Japan	automotive	131.7	107,763	64
Ford Motor Company	US	automotive	119.1	160,000	79
Total	France	petroleum	108.1	64,126	27
Electricite de France	France	utilities	91.5	17,801	94

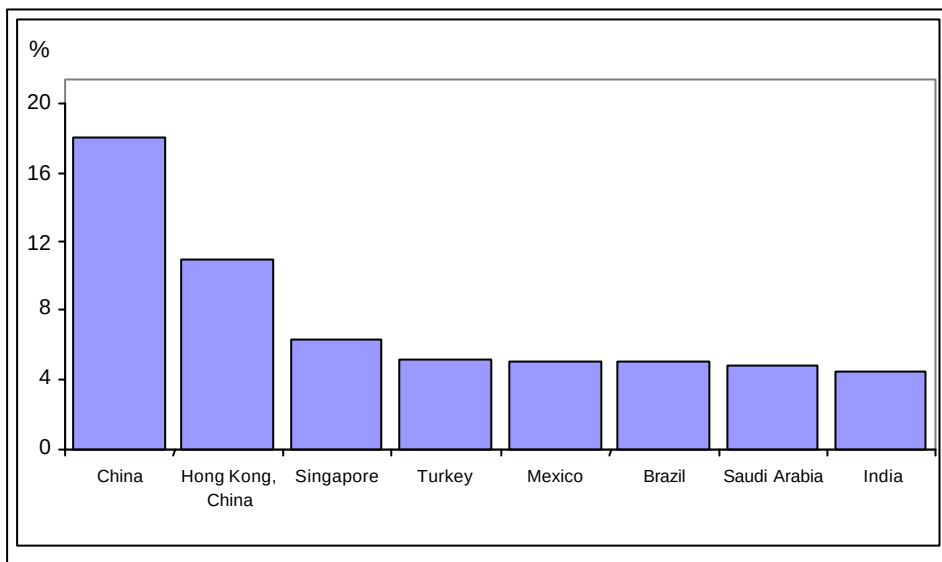
*Note: *Transnationality index* is average of three ratings- MNE foreign assets: total assets; foreign sales: total sales; foreign employment: total employment
Source: UNCTAD

3.5 Broad regional trends: FDI flows and stocks

- 3.5.1 Provided below is a brief commentary of global regional trends, and contemporary developments in FDI. Tables and figures are kept to a minimum here because the focus quickly moves to EU trends. Further support tables for regional trends are in the Appendix 1 to the review (Tables A2:1-6). The key source here is the UNCTAD 2007) *World Investment Report*.
- 3.5.2 FDI flows to developing economies: The main developing world recipients of FDI inflows in 2006 are highlighted in Figure 3.2, with China, Hong Kong and Singapore shown to have a strong and sustained position in attracting the highest levels. China is predicted to remain as the largest emerging destination for FDI; China was ranked as the top preferred investment destination by most international firms in the 2007 UNCTAD “*World Investments Prospects Survey for 2007-2009*” (see Table 3.6) and The Economist’s “*World Prospects Survey to 2011*”.
- 3.5.3 The modest decline in inflows to China in 2006 resulted from reduced investments in financial services, but the country’s overall location competitiveness is expected to be maintained in the medium term. Around 3% of China’s total workforce was estimated to be employed in foreign affiliates in 2004. This amounted to 24m workers as compared to less than 5m in 1991. There remains a slight degree of

uncertainty over the future openness of China to FDI faced with other nations potentially bringing in protectionist measures and some domestic unease within China itself about FDI.

Figure 3.2: Main destination of FDI in developing world*, 2006



*Note: "...the designations of country groups are intended solely for statistical or analytical convenience and do not necessarily express a judgement about the stage of development reached by a particular country or area in the development process..." (UNCTAD World Investment Report 2007 p II).

Source: UNCTAD

Table 36: Most attractive locations for FDI for 2007-2009

Economies	Percentage of respondents
China	52
India	41
United States	36
Russian Federation	22
Brazil	12
Viet Nam	11
United Kingdom	10
Poland	7
Germany	7
Australia	6

Source: UNCTAD World Investment Report 2007 (Table I.13)

- 3.5.4 The last decade has also seen the emergence of China and India as sources of outward FDI in their own right, particularly in resource-based industries. Whereas Chinese outward flows are dominated by state owned-enterprises, in India these have been dominated by private conglomerates. Merger and acquisition has been a key route. For example, China National Petroleum acquired PetroKazakhstan for \$4.1bn in 2005; while Tata the Indian conglomerate acquired Corus for \$11 bn in 2007. FDI inflows to India grew strongly from 2005 to 2006 (\$6.7bn to \$16.9bn) due to an expansion in M&As, a buoyant property market and “the increased ability of some investors to find ways around remaining entry restrictions” (The Economist, 2007, p.26).
- 3.5.5 Although FDI inflows to India are expected to continue to increase, these are projected to be limited below their potential by concerns regarding the business environment (inflexible labour laws and poor infrastructure, along with resistance to privatisation) (The Economist, 2007).
- 3.5.6 West Asia has seen efforts by Gulf countries to diversify their activities beyond oil-related activities, with for example outflows from Kuwait being directed into the telecommunications industry. The privatisation of financial services in Turkey attracted FDI inflows, and there have additionally been a number of cross-border M&As in the country.
- 3.5.7 In Latin America the level of FDI inflows has been stable. However, outflows have increased substantially as companies from Mexico, Chile, Argentina and Venezuela have sought to internationalize through FDI. Brazil has also invested substantial

resources outwardly, including the purchase of Canadian company Inco by Cia Vale do Rio Doce SA for \$17.2bn.

- 3.5.8 Following recent moves by African economies to open themselves up to FDI, inflows to the continent increased to \$36bn in 2006, (this is twice the level of FDI inflows recorded in 2004). The increase in commodity prices attracted MNEs to invest in oil, gas and mining industries in Africa. This has led to concerns about exchange rate impacts in these countries and prospects in other export-oriented activities (UNCTAD, 2007, p.35).
- 3.5.9 Both greenfield investments and cross-border acquisitions played a role in each of the top African country recipients of FDI inflows- Nigeria, Egypt, Sudan and Tunisia (following a boom in privatisation and strong regional liquidity in North Africa). Africa's FDI outflows reached record levels in 2006 of \$8bn, with investors from South Africa accounting for around 80 % of this. Much of the South African FDI was in natural resource exploitation and exploration.
- 3.5.10 South East Europe and the Commonwealth of Independent States (CIS): The large increase in FDI inflows to South East Europe and the CIS in recent years have been mainly directed to the primary sector (as MNEs have increasingly sought natural resources) and financial companies. From 2005 to 2006 FDI inflows increased by 68% to \$69.3bn, the sixth consecutive year of growth in their value in the area.
- 3.5.11 FDI inflows expanded in Bulgaria and Romania as a result of their impending accession to the EU, and have also increased in the Russian Federation, Kazakhstan and the Ukraine. Outward flows have increased as Russian MNEs seek to expand abroad, and financial institutions from the area as a whole increasingly invest within other CIS economies.
- 3.5.12 In developed countries inward FDI has grown in most regions and in the majority of sectors in 2006. The US was the largest single host country of FDI in 2006 with high levels of reinvested earnings following growth in consumer demand and corporate profits for foreign affiliates (UNCTAD, 2007, p.66). Significant cross-border M&As in the chemical industry and a buoyant finance sector were of particular note in 2006. The US regained its status as the world's leading source of FDI outflows in 2006 following a reduction in 2005 due to massive repatriation of funds by US investors driven by changes in US corporate tax laws (The Economist, 2007, p.27).
- 3.5.13 Japanese FDI inflows, at -\$6.5bn in 2006, were negative for the first time since 1989. "...Large negative equity inflows of \$8.6bn were experienced as large disinvestments were made by Japanese affiliates of Vodafone and GM through their financial affiliates in the Netherlands, Canada and Hong Kong (China). Japan's economic expansion was hampered by deflationary pressures and low productivity

growth in non-tradable goods and services (Moody's, 2007). The decline in FDI inflows made it impossible to achieve the ambitious target of doubling Japan's inward FDI stock by the end of 2006...". (UNCTAD, 2007); and "Japan's FDI regime remains difficult owing to the complex regulatory environment that appears designed to protect domestic players. In addition, high labour costs, weak growth in recent years and cultural barriers help to explain the low FDI levels..." (The Economist , 2007, pp.22-23).

3.6 FDI regional trends in the EU:

- 3.6.1 In this section the focus is narrowed to consider recent trends in FDI flows and stocks in the EU.
- 3.6.2 Table 3.7 shows that inward flows into the European Union fell from EUR 145.9 bn in 2001 to EUR 94.1bn in 2005. In 2005 this accounted for around a fifth of global FDI inflows
- 3.6.3 From the world as a whole EUR 500bn of inflows came into the EU in 2005, of which EUR 406bn were accounted for by intra-EU flows (81.2%).

Table 3.7: Geographical breakdown of FDI flows into the EU, eur mn

From:	2001	2002	2003	2004	2005
World	549,061	486,627	355,390	225,328	500,281
Intra-EU	403,192	360,059	231,847	172,255	406,133
Extra-EU	145,867	126,567	123,541	53,072	94,149
<i>Of which:</i>					
United States	79,643	57,609	51,935	9,292	17,110
Canada	5,632	4,019	12,699	-3,802	7,979
Japan	8,816	8,331	4,002	7,513	6,161

Source: Eurostat, European Union FDI yearbook 2007 (Table 1)

3.7 The EU (15) – FDI flows

- 3.7.1 Total FDI inflows to the EU (15) group of countries amounted to \$492bn in 2006, an increase of 9.7% on the previous year (see Table 3.8). In 2006 reduced flows to the UK, Spain and the Netherlands were offset by an increase in flows to Belgium, Germany, Italy and Luxembourg. The UK maintained its position as the location in the EU attracting the largest amounts of FDI inflows (\$139.5bn in 2006), albeit down from the massive level of \$193.7bn seen in 2005. (An explanation for this sharp increase in 2005 is given in section 4.2 later.) This fall of 28 % reflected factors such as a substantial decline in equity inflows and repayment of intra-

company debt by foreign affiliates to their parent firms. The UK was the second largest FDI recipient in the world after the US in 2006.

3.7.2 The UK FDI profile is dealt with in more detail in Section 4. However, around two-fifths of the FDI inflows into the UK came from the U.S., whereas a larger proportion of investment in France came from within Europe (particularly from Germany and Spain, and the UK itself).

3.7.3 Closer examination of Table 3.8 reveals a great deal of fluctuation both in the value of total FDI inflows into the EU-15, and particularly flows into individual states. In part this reflects the significance of large volumes of M&A activity in individual years and individual countries. For these reasons the last but one column shows the % share of FDI inflows going to EU-15 states over the whole period 1997-2006. Between 1997-2006 the table reveals that the UK, France, Germany and Belgium/Luxembourg between them attracted nearly two-thirds of total FDI inflows into the EU-15. The final column shows FDI inflows as a percentage of gross fixed capital formation (GFCF) in 2006. For example, in the UK FDI inflows represented around one third of GFCF. This number, however, will vary year on year.

Table 3.8: FDI inflows into EU-15 (1997-2006) (\$m)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	% Share 1997- 2006	FDI inflows as % of gross fixed capital formatio n 2006
Austria	2,654	4,533	2,975	8,840	5,919	357	7,144	3,890	9,045	248	1.3	0.4
Belgium - Luxembourg	11,998	22,691	119,693	88,739	88,203	-	-	-	-	-	16.3	-
Belgium	-	-	-	-	-	16,250	33,476	43,558	33,918	71,997	-	89.4
Luxembourg	-	-	-	-	-	4,093	2,917	5,823	7,246	29,309	-	386.2
Denmark	2,798	7,724	16,750	33,012	11,108	6,630	2,709	-10,442	13,103	7,032	2.5	11.5
Finland	2,114	12,143	4,610	8,834	3,732	8,046	3,319	3,003	4,507	3,706	1.5	9.2
France	23,172	30,981	46,545	43,250	50,476	49,035	42,498	32,560	81,063	81,076	13.5	17.9
Germany	12,244	24,593	56,077	198,277	26,414	53,520	32,369	-9,195	35,867	42,870	13.3	8.3
Greece	984	71	562	1,108	1,589	50	1,275	2,101	607	5,363	0.4	9.0
Ireland	2,136	8,865	18,211	25,779	9,651	29,324	22,781	-10,608	-31,132	12,811	2.5	21.3
Italy	4,961	4,280	6,911	13,375	14,871	14,545	16,415	16,815	19,971	39,159	4.3	10.2
Netherlands	11,134	36,939	41,205	63,854	51,927	25,038	21,043	2,123	41,456	4,371	8.4	3.3
Portugal	2,360	3,005	1,157	6,635	6,231	1,799	8,593	2,327	3,965	7,371	1.2	17.2
Spain	8,937	14,173	18,743	39,575	28,342	39,214	25,820	24,761	25,020	20,016	6.9	5.4
Sweden	10,968	19,836	60,961	23,427	10,912	12,160	4,985	11,463	10,169	27,231	5.4	39.5
United Kingdom	33,227	74,321	87,979	118,764	52,623	24,029	16,778	55,963	193,693	139,543	22.4	33.9
EU (15)	129,688	264,157	482,378	673,470	361,998	284,090	242,122	174,143	448,497	492,102	100.0	17.9

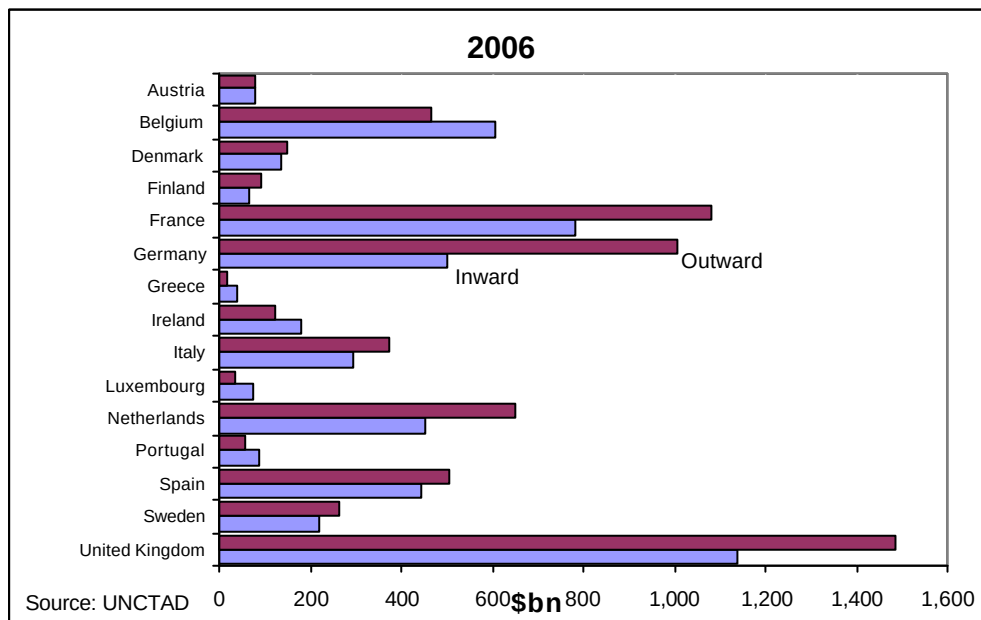
Source: UNCTAD, 2007

3.7.4 The UK was the main target of M&As in Europe, with Spanish companies notably active as acquirers (e.g. Telefonica SA acquiring O2 Plc for \$31.7bn, see Table 4.6 later), highlighting the UK's openness to cross-border M&As. France was the second biggest location of FDI inflows in 2006 at \$81bn, followed by Belgium (\$72bn) and then Germany (\$42.9bn).

3.8 EU-15 FDI stock summary

3.8.1 Figure 3.3 shows the inward and outward FDI stock by EU-15 country in 2006. The UK both hosted the largest stock value of foreign investment of any EU-15 country, and had the largest outward stock invested outside its country of any EU-15 economy.

Figure 3.3: Inward and outward FDI stock by EU(15)



Source: UNCTAD

3.8.2 Table 3.9 shows that EU FDI inward stocks held by countries outside of the EU (liabilities) increased from EUR 1,296bn in 2001 to EUR 1,744bn at the end of 2005. The proportion of this value held by U.S. companies fell from 54.4 % in 2001 (EUR 704bn) to 44.1% in 2005 (or EUR 769bn in 2005).

Table 3.9: Geographical breakdown of FDI stocks held in the EU; eur mn

From:	2001	2002	2003	2004	2005
World	3,862,428	4,000,899	4,454,940	4,801,894	5,486,920
Intra-EU	2,566,832	2,735,619	2,970,364	3,221,358	3,742,097
Extra-EU	1,295,598	1,265,279	1,484,575	1,580,532	1,744,823
<i>Of which:</i>					
United States	704,815	659,920	687,134	694,338	769,166
Canada	81,072	73,763	66,171	62,187	74,847
Japan	60,067	62,910	75,070	81,852	89,500

Source: Eurostat, European Union FDI yearbook 2007 (Table 3)

3.9 The EU (10) - FDI inflows summary

3.9.1 Table 3.10 shows that FDI Inflows to the 10 new EU member countries (excluding Bulgaria and Romania) have risen in recent years from \$14.6bn in 2003 to \$38.9bn in 2006. Increases in reinvested earnings were a major factor in this trend.

3.9.2 The main recipient of FDI inflows in the EU-10 was Poland (in 2006 at \$13.9bn) which secured increased investment from other European nations as well as, notably, Japanese companies (e.g. Toyota and Toshiba). Hungary (\$6.1bn), the Czech Republic (\$5.9bn) and Slovakia (\$4.1bn) followed Poland in rank order. Germany and Italy were the major sources of FDI inflows to EU-10 countries.

Table 3.10: FDI inflows into the new EU-10 (1997-2006) (\$m)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	% Share 1997- 2006	FDI inflows as % of gross fixed capital formation 2006
Cyprus	547	345	813	855	944	1,058	893	1,090	1,214	1,492	3.9	42.5
Czech Republic	1,301	3,718	6,324	4,986	5,641	8,483	2,101	4,974	11,658	5,957	23.4	16.8
Estonia	267	581	305	387	542	284	919	971	2,879	1,674	3.7	30.1
Hungary	4,167	3,335	3,312	2,764	3,936	2,994	2,137	4,506	7,619	6,098	17.3	24.8
Latvia	521	357	347	413	132	253	304	637	724	1,634	2.3	23.7
Lithuania	355	926	486	379	446	732	179	773	1,032	1,812	3.0	26.3
Malta	82	277	865	618	251	440	968	403	582	1,757	2.3	145.4
Poland	4,908	6,365	7,270	9,343	5,714	4,131	4,589	12,890	9,602	13,922	33.4	20.5
Slovakia	231	725	428	1,925	1,584	4,123	2,160	3,031	2,107	4,165	8.7	28.6
Slovenia	334	216	107	136	370	1,636	333	827	496	363	2.0	3.8
EU (10)	12,713	16,845	20,257	21,806	19,560	23,254	14,585	30,103	37,913	38,874	100.0	22.1

Source: UNCTAD, 2007

3.9.3 In similarity to Table 3.8, the figures in Table 3.10 fluctuate from year to year. Over the longer period 1997-2006 the table shows that Poland, Hungary and the Czech republic accounted for around three quarters of the FDI inflows to the EU-10.

3.10 Conclusions

3.10.1 The review of FDI statistics in this section confirms that in spite of recent trends it is the developed nations that still dominate FDI inflows and outflows, and with the US and UK still accounting for a high level of activity, much of this fuelled by cross border M&As.

3.10.2 For example, in 2005 the largest bilateral outward FDI stock was that of the UK in the US (\$282bn). The stock of US FDI in the UK economy was \$234bn (20 years ago situation had been the reverse with the US stock in UK larger than the opposite).

3.10.3 This pattern has started to change as MNEs from Latin America, China and India begin to place operations overseas.

3.10.4 In this vein until quite recently FDI flows from developing markets took the form of 'South-South' investments. For example, FDIs between Asian states made up around 50% of total FDI flows in this region. However, now MNEs from developing states have placed large investments in the developed world (e.g. Tata/ Corus; Brazil's CVRD takeover of Inco Canada).

3.10.5 What of future prospects for FDI? One of the problems here is that this review was being completed (2008, first half) at a time of turmoil in global financial markets. It is still too early to provide an account of how far the sub-prime crises will impact on FDI inflows, particularly relating to cross border M&A activity in financial and business services. The very latest figures from the OECD suggest that FDI outflows from OECD countries in 2007 increased to a new high of \$1.82 trillion (up from \$1.2 trillion in 2006), and that FDI inflows to OECD countries rose to \$1.37 trillion in 2007 (up from \$1.05 trillion in 2006). However, the OECD projected a sharp fall in FDI inflows and outflows to/from the OECD in 2008, citing falls in US outward investment in the first quarter of 2008, and a slowdown in international M&As in the first half of 2008 (see *OECD Investment News*, June 2008, Issue 7, pp1-3).

3.10.6 The conclusions to section 4 will provide some limited commentary on FDI forecasts for the UK, however due to the current high level of uncertainty, this discussion is kept to a minimum.

3.10.7 The report now considers FDI trends in the UK.

4 Stage 1 Review: UK and Regional FDI trends

4.1 UK FDI Trends

4.1.1 This section aims to provide an analysis and commentary of UK foreign direct investment. Table 4.1 provides brief comments on the characteristics of the key data sources used for this section. Tables 4.2, 4.3, 4.5 and 4.6 are taken from the *World Investment Report 2007* (UNCTAD), whilst other tables and figures are derived from ONS data (both from published sources and from special analysis). Other sources include, fDi Markets (a subsidiary company of the Financial Times), UK Trade and Investment (UKTI) and International Business Wales (IBW).

Table 4.1 Key data sources and reliability for UK and Wales analysis

Data source	Coverage	Reliability	Comments
UNCTAD	Global FDI flows, smallest spatial scale is nation.	High	Official data.
ONS Surveys, Bank of England	UK inward and outward FDI	High	Official data.
Annual Census of production (ACOP) / Annual Business Inquiry (ABI)/ Inter-Departmental Business Register (IDBR)	Foreign-owned company information by SIC. Information available for regions and smaller areas, although disclosure problems limit availability.	High	Official data. Special analysis needed for detailed foreign-owned sector analysis. Incomplete coverage of economy
fDi Markets (Crossborder Investment Monitor). A subsidiary company of the Financial Times.	Global FDI projects, national data.	Good, a mixture of planned and actual data Reliable for market /sector trends. Only includes publicly announced projects. Most comprehensive global FDI database available. Database used by UNCTAD	Advantage of non-standard classifications e.g. business functions.
UK Trade and Investment (UKTI)	UK and regions	Good, planned and evidence based employment and capital investment	Useful for benchmarking FDI performance of UK regions (but note data is planned projects, jobs etc rather than actuals)
International Business Wales (IBW)	Wales	Good, planned and evidence based employment and capital investment.	High level of detail on new projects to Wales. Excludes some projects which may not have made contacts with WAG.

4.2 UK FDI flows and stocks

4.2.1 Table 4.2 provides general background to the UK FDI position in the recent past. Since the 1990s the UK has outperformed the EU and US in terms of FDI inflows as a % of Gross Fixed Capital Formation (GFCF). In 2005 there was a significant increase in inward FDI flows to the UK, a large share of which comprised M&A related flows, in line with a global increase in M&A deals in that year. The UK was the top target country for M&As in 2005, accounting for 24% of the total (in terms of shares of total sales by value), followed by the US (accounting for 15%) and Germany (with 9% of the total).

Table 4.2 FDI Flows, inward and outward. \$m, and as a % of UK GFCF.

	Inward	as % GFCF	Outward	as % GFCF
1990-2000 (annual average)	40,321	18.1	73,378	32.5
2004	55,963	16.1	91,019	26.1
2005	193,693	52.9	83,708	22.9
2006	139,543	33.9	79,457	19.3

Source UNCTAD, World Investment Report, 2007.

4.2.2 Inward FDI flows to the UK in 2005 were the highest ever recorded for a European economy, and were 65% higher than those of the US, making the UK the world leader for inward FDI flows. Over half of the annual UK FDI inflow was accounted for by one mega M&A deal involving the merger of Shell Transport and Trading Company Plc and Royal Dutch Petroleum Company into Royal Dutch Shell (see later). During that year financial services, telecommunications and transportation were the UK industries most targeted by inward investors. In 2006 the UK had FDI inflows of almost \$140bn, and outflows of almost \$80bn. The time series in the table shows the increasing significance of FDI stocks as a % of GFCF. Between 2004 and 2006 inward FDI flows increased by an average annual rate of 57%. Table 4.6 later provides information on key M&A deals during 2006. Note that in this and later tables, time series data is in nominal terms.

4.2.3 Table 4.3 shows that in 2006 the inward FDI stock was valued at over \$1,135bn, whilst the outward FDI stock was almost \$1,500bn. This table shows relatively balanced inward and outward stocks, and that the UK is very much a *developed* FDI nation. Indeed, Tables 4.2 and 4.3, when seen in the context of other nations (see previous section) show the UK to be one of the world's largest and most open hosts of FDI.

Table 4.3 FDI Stocks, inward and outward. \$m, and as a % of GDP.

	Inward	as % GDP	Outward	as % GDP
1990	203,905	20.6	229,307	23.2
2000	438,631	30.4	897,845	62.2
2005	831,357	37.8	1,228,326	55.9
2006	1,135,265	47.8	1,486,950	62.6

Source UNCTAD, World Investment Report, 2007.

4.2.4 UK-owned MNEs account for 13 of the world top 100 non-financial 100 MNEs. The Vodafone group is the highest ranked UK-owned non-financial MNE, and is ranked second in the world in terms of foreign assets, behind General Electric of the United States. Vodafone employs an estimated 61,700 employees worldwide, with just over 51,000 of those outside of the UK.

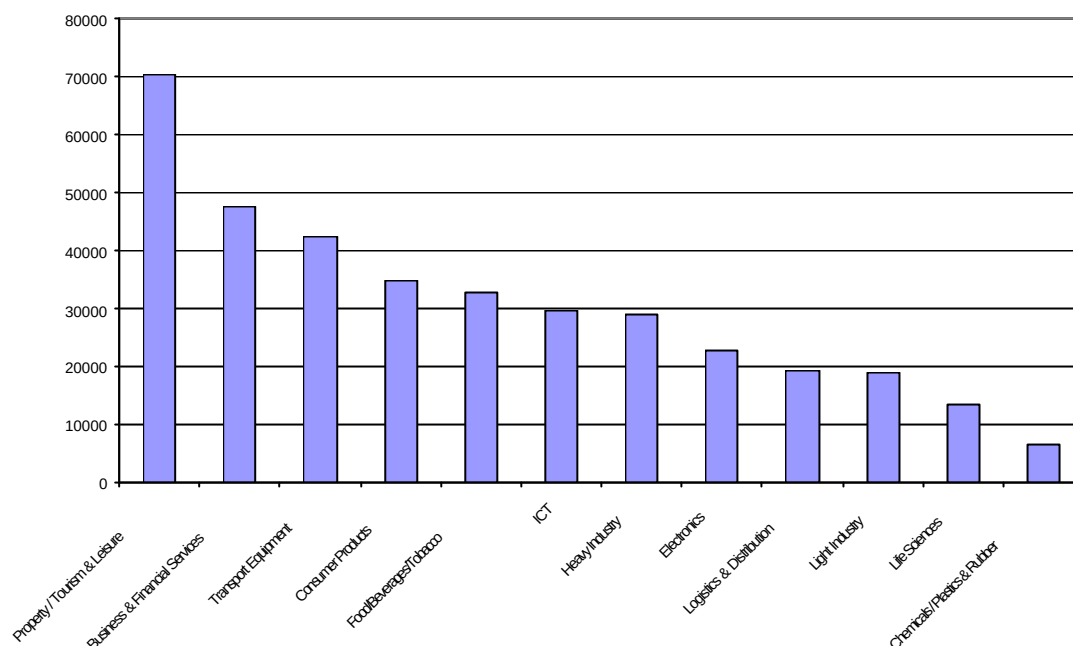
4.2.5 HSBC Holdings PLC was the largest of the UK-owned financial MNEs in 2005, and was ranked sixth in terms of the worlds largest financial MNEs. The company's assets were valued at almost \$1.5bn with employment of 270,000 in 717 affiliates in 53 host countries.

4.3 Greenfield projects and M&As

4.3.1 Greenfield projects might be considered as 'pure' FDI, but only account for a part of the flows included in Table 4.2. The number of greenfield FDI projects into the UK is on an increasing trend. In 2002, UNCTAD recorded 325 greenfield projects into the UK. By 2006, this had increased to almost 700 projects.

4.3.2 fDi Markets (Crossborder Investment Monitor) record the number of new (Greenfield) FDI projects into different world economies using information from press releases, government reports etc. This data is used by UNCTAD and others for FDI analysis. Over the period 2002-2007 (to September) fDi Markets recorded a total of 3,151 new greenfield FDI projects in the UK, associated with 367,000 jobs. Figure 4.1 shows the sectoral composition of these jobs (note this is not a SIC definition but one which is specific to this source). The defined property, tourism and leisure sector accounted for the highest share of these jobs (over 70,000 jobs – see Appendix 2, Table A2.1), followed by business and financial services and transport equipment. The smallest sector was chemicals, plastics and rubber. This figure then also demonstrates the importance of new service sector projects into the UK over this period.

Figure 4.1: UK FDI jobs by sector, total (2002-2007).



Source: fDi Markets (Crossborder Investment Monitor)

4.3.3 Table 4.4 provides further detail on the composition of projects and jobs over the 2002-2007 period, using a different classification to that of Figure 4.1. This table shows projects and jobs by key business function. These categorisations are again specific to the fDi Markets source, but do however provide an interesting insight into the characteristics of FDI projects. In terms of total projects, sales, marketing and support was the most significant business function, accounting for over 800 projects during the period (25% of total projects), this was followed by business services and retail. In terms of jobs, retail had the highest recorded total jobs (over 92,000) followed by manufacturing (over 65,000 jobs).

Table 4.4 UK FDI 2002-2007 by key business function

Projects	2002	2003	2004	2005	2006	Jan - Sept 2007	Total
Sales & Marketing & Support	52	72	143	192	183	190	832
Business Services	44	86	54	81	105	111	481
Retail	54	57	96	79	102	55	443
Manufacturing	59	74	89	76	73	53	424
HQ	41	32	47	62	61	44	287
Research and Development	22	20	22	36	40	33	173
Logistics and Distribution	5	22	31	34	36	26	154
Construction	16	18	6	12	20	8	80
Customer Support Centre	6	15	13	15	12	10	71
Internet or ICT Infrastructure	6	4	5	4	6	8	33
Maintenance / Service	3	9	2	6	3	7	30
Electricity	1	3	3	6	9	7	29
Technical Support Centre	4	1	4	9	6	4	28
Training	6		3	6	5	4	24
Extraction	2	8	6	7	1		24
Shared Services Centre		3	2	7	5	2	19
Testing	3	3	2	1	3	7	19
Total	324	427	528	633	670	569	3151

Jobs	2002	2003	2004	2005	2006	Jan - Sept 2007	Total
Retail	8,334	17,001	23,632	19,274	18,729	5,482	92,452
Manufacturing	9,966	10,845	20,281	8,341	9,634	6,499	65,566
Construction	4,156	6,119	7,746	907	28,823	5,980	53,731
Logistics and Distribution	608	6,571	8,112	4,374	6,436	7,028	33,129
Business Services	1,738	3,980	2,596	3,976	5,585	4,742	22,617
Customer Support Centre	1,432	6,752	2,606	3,039	4,178	2,851	20,858
Research and Development	1,975	1,896	1,432	2,500	9,553	3,217	20,573
HQ	2,131	2,201	2,136	4,316	4,197	3,116	18,097
Sales & Marketing & Support	963	1,171	2,572	2,862	3,388	5,175	16,131
Technical Support Centre	1,808	189	989	1,746	716	762	6,210
Extraction	282	1,762	1,125	1,859	259		5,287
Shared Services Centre		250	155	617	1,034	750	2,806
Electricity	16	161	149	506	982	475	2,289
Maintenance / Service	131	815	192	301	437	378	2,254
Testing	194	917	67	168	359	536	2,241
Internet or ICT Infrastructure	402	250	235	167	357	380	1,791
Training	210		114	375	174	119	992
Total	34,346	60,880	74,139	55,328	94,841	47,490	367,024

Source: fDi Markets (Crossborder Investment Monitor) . Note: Job numbers include estimates using a complex matrix calculator.
Note: 2002 data should not be used for trend analysis

4.3.4 Table 4.5 demonstrates the increasing trend of cross-border M&A activity which is now a significant component of FDI. M&As can however distort the overall FDI trend data as already shown in Table 4.2. A further issue in relation to M&A activity is that it may have no real immediate impact on the economy, as it represents a change of ownership which may not add directly to the capital stock of the host country, although it will add to the foreign-owned capital stock, when domestic firms are acquired. There may however be longer term positive or negative impacts associated with M&As (see Stage 2 report later).

Table 45: Value and number of cross-border M&As, UK, 2004-2006, \$m

	Sales		Purchases	
	Value	Number of deals	Value	Number of deals
2004	58107	470	47307	602
2005	171689	587	90535	720
2006	150527	628	91717	817

Source UNCTAD, World Investment Report, 2007.

4.3.5 Table 4.6 shows the most significant (in terms of value) M&A deals in 2006 where a UK based/ owned firm was the target. The table then shows that in 2006, the merger/takeover of O2 plc by Telefonica of Spain was the second largest global M&A deal with a value of \$31.7bn. The table also illustrates that the US is no longer dominant in this area, as it may once have been. There are a diversity of nations who are now involved in landmark M&A deals, with a further diversity of sectors.

Table 46: Cross Border M&A Deals with values over £3bn completed in 2006, UK as target

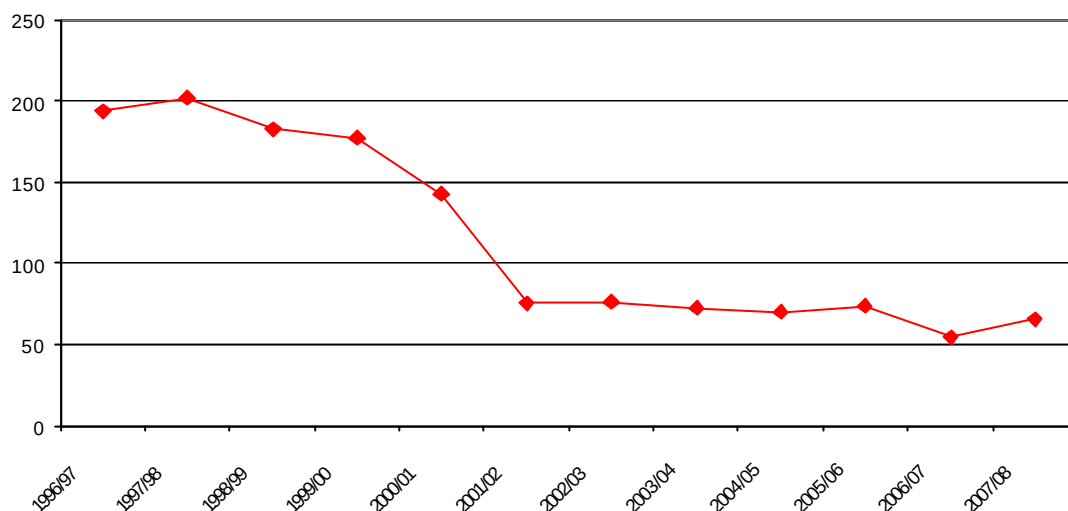
Rank(out of 54 global largest)	Value \$bn	Target company	Target Industry	Acquiring Company	Acquiring Nation
2	31.7	O2 PLC	Radiotelephone communications	Telefonica SA	Spain
3	21.8	BAA PLC	Airports and airport terminal services	Airport Development	Spain
6	14.1	BOC group PLC	Industrial gasses	Linde AG	Germany
15	6.9	Peninsular & Oriental Steam	Deep sea foreign transportation of freight	Thunder FZE	United Arab Emirates
20	5.7	Hilton International Co	Hotels and Motels	Hilton Hotels Corp	United States
26	4.9	Brambles Industries PLC	Equipment rental and leasing, nec	Brambles Industries Ltd	Australia
32	4.6	Spirit Group Ltd	Drinking places (alcoholic beverages)	Punch Taverns PLC	UK
40	3.9	General Healthcare Group PLC	General medical and surgical hospitals	Investor Group	South Africa
51	3.0	Viridian Group PLC	Electricity services	ElectricInvest Acquisitions	UK
53	3.0	Pilkington PLC	Glass products, made of purchased glass	Nippon Sheet Glass Co Ltd	Japan

Source UNCTAD, World Investment Report, 2007.

4.3.6 There is evidence that the composition of new FDI projects into the UK has changed in recent years. Data from UKTI shows that whilst there has been an increase in the number of projects since the late 1990s, there has been a definite reduction in the scale of projects. Figure 4.1 shows that at the start of the period, there was an average of around 200 jobs per project, but that in more recent years, this has

reduced to between 50 and 100 jobs per project (note however that there has not been such a definite trend in the figures available for Wales.).

Figure 4.2: Inward investment into the UK, 1996/97 to 2007/08, average number of planned jobs, per project.



Source: UKTI database

4.4 Net direct investment, outward and inward

4.4.1 Tables 4.7 and 4.8 are derived from Office for National Statistics information for the period 2002-2006 and show net FDI in £m, and hence account for disinvestments. Since 2004, the Americas have been the main destination for outward investments from the UK. In 2002 and 2003 Europe dominated in terms of UK net direct investment abroad, whilst in 2002 there was a net disinvestment in the Americas. By 2006, net FDI abroad by UK companies was almost £50bn.

Table 4.7: Net direct investment abroad by UK companies - analysed by area and main country, £m

	2002	2003	2004	2005	2006
Europe	27300	16600	10814	12105	15965
The Americas	-5150	15959	24321	20689	21175
Asia	5538	3601	7689	5399	8327
Australasia and Oceania	3677	-1524	1026	423	3631
Africa	2196	3454	5863	5843	293
World total	33561	38088	49713	44458	49390

Totals may not sum due to rounding; net investment includes re-invested earnings; a minus sign indicates net disinvestment abroad.

Source: ONS FDI Surveys; Bank of England.

4.4.2 Table 4.8 shows net FDI into the UK by foreign companies. European companies account for the largest share in UK FDI. There was a sharp fall in European investments during 2003, which had a knock-on consequence for the total FDI flows that year. This table again shows the increase in European (and then total) UK FDI flows during 2005, as already discussed in relation to Shell. Note that this table also shows a net disinvestment in the UK by the Americas in 2002 and 2004, and by Asian-owned companies in 2003 and 2005. By 2006, net FDI into the UK was just over £80bn.

Table 4.8: Net FDI in the UK by foreign companies - analysed by area and main country, £m

	2002	2003	2004	2005	2006
Europe	15431	7013	29901	80087	47589
The Americas	-2051	3396	-4792	17422	18901
Asia	2551	-449	4081	-4168	11805
Australasia and Oceania	31	310	1420	3396	1835
Africa	71	7	-43	66	138
World total	16033	10276	30566	96803	80269

Source: ONS FDI Surveys; Bank of England. Totals may not sum due to rounding. Net investment includes re-invested earnings. A minus sign indicates net disinvestment abroad.

4.5 The UK regional distribution of new FDI projects

4.5.1 Information on (new, acquisition and expansion) inward investment projects into the UK and its regions are available from UKTI. Table 4.9 shows the aggregate total of projects and jobs by UK region over a 6 year period. Information by region for each of the years included can be found in Appendix 2, Table A2.2. The South East and London dominate in terms of inward investment projects, securing over 2,500 projects during the six year period analysed. However in terms of new, safeguarded and associated jobs, there is a slightly more even distribution. During the period shown, Wales secured 362 projects which were associated with over 21,000 planned new jobs, over 17,000 safeguarded jobs and 38,500 associated jobs.

Table 4.9: Regional inward investment, 2001/2 to 2006/7 totals.

	No. of projects	No. of new jobs	No. of safeguarded jobs	Total no. of associated jobs
East Midlands	331	8,283	11,100	19,383
East of England	404	8,555	11,175	19,730
London	1,492	23,868	6,766	30,634
North East	364	19,386	16,970	36,356
North West	460	23,192	14,285	37,477
Northern Ireland	178	13,297	19,618	32,915
Scotland	399	20,863	11,833	32,696
South East	1,014	24,464	14,143	38,607
South West	258	8,377	16,210	24,587
UK Wide	11	250	25,631	25,881
Wales	362	21,123	17,329	38,452
West Midlands	466	20,945	37,222	58,167
Yorkshire & Humber	262	11,538	8,259	19,797
Total	6,001	204,141	210,541	414,682

Source: Published figures from the UKTI Database

4.6 An industrial analysis of foreign-owned company activity

- 4.6.1 Table 4.10 provides information from the *Annual Business Inquiry* (ABI) relating to foreign-owned company activity in the UK in 2000 and 2005 (latest year currently available). This data essentially describes the stock of FDI in particular industries in the two years chosen. For each of the periods this summary table shows the number of sites, number of employees (note this is not FTEs, but is the sum of all employees whether full or part-time), gross value added and total output at basic prices. This information is presented at the SIC 2003 section level for presentational purposes.
- 4.6.2 As already shown in the other data tables, FDI into the UK has increased over the 2000-2005 period. Table 4.10, which shows company activity, further illustrates this, with each defined sector of the economy experiencing an increase in foreign-owned company activity. In relation to manufacturing, the number of sites increased to over 7,000 in 2005, with employment reaching over 811,000 with consequent GVA of £47bn and total output of £161bn. The ABI is a useful data source as it provides detail on foreign-owned activity within the service sector. Indeed of all the sectors included in the table, manufacturing had the slowest growth rate over the period in terms of number of sites, number of employees and GVA. The most significant increases in foreign-owned company activity in terms of GVA were in health and social work, energy, real estate, other community, social and personal service activities and renting and business activities.

Table 4.10: An industrial analysis of foreign-owned company activity in the UK, 2000 and 2005. (See note to table with regard to industry totals)

Industry	2,000				2005			
	Number of Sites	Total Number of Employees	Gross Value Added £th	Total Output at basic prices £th	Number of Sites	Total Number of Employees	Gross Value Added £th	Total Output at basic prices £th
Manufacturing	6,173	755,335	36,929,557	123,585,238	7,186	811,252	47,136,756 ^a	161,374,196 ^a
Electricity, gas and water supply	301	22,446	2,067,915 ^b	9,171,306 ^b	508	34,539	8,683,532	22,802,082
Construction	963	46,881	1,781,642	6,026,056	1,242	73,441	3,094,398	11,099,957
Wholesale and retail trade; repair of motor vehicles, motorcycles etc	16,299	477,572	21,497,575	41,979,154	28,120	714,972	31,879,745	53,497,935
Hotels and restaurants	4,869	134,945	1,688,728	3,016,583	6,641	168,178	2,395,757	4,648,243
Transport, storage and communication	3,586	160,860	6,997,309	22,329,774	5,068	231,175	13,430,171	39,922,613
Real estate, renting and business activity	7,429	350,296	18,025,711	31,169,548	14,269	620,880	37,934,202	58,937,328
Education	100	4,431	157,878	315,647	267	6,544	254,287	596,777
Health and social work	172	6,776	89,191	200,112	1,564	91,912	2,246,706	3,365,812
Other community, social and personal service activity	2,328	44,743	1,673,485 ^c	3,568,418 ^c	2,875	62,745	4,178,967	7,195,889

a. Includes estimated GVA and output for food products and beverages

b. Excludes collection, purification/distribution of water

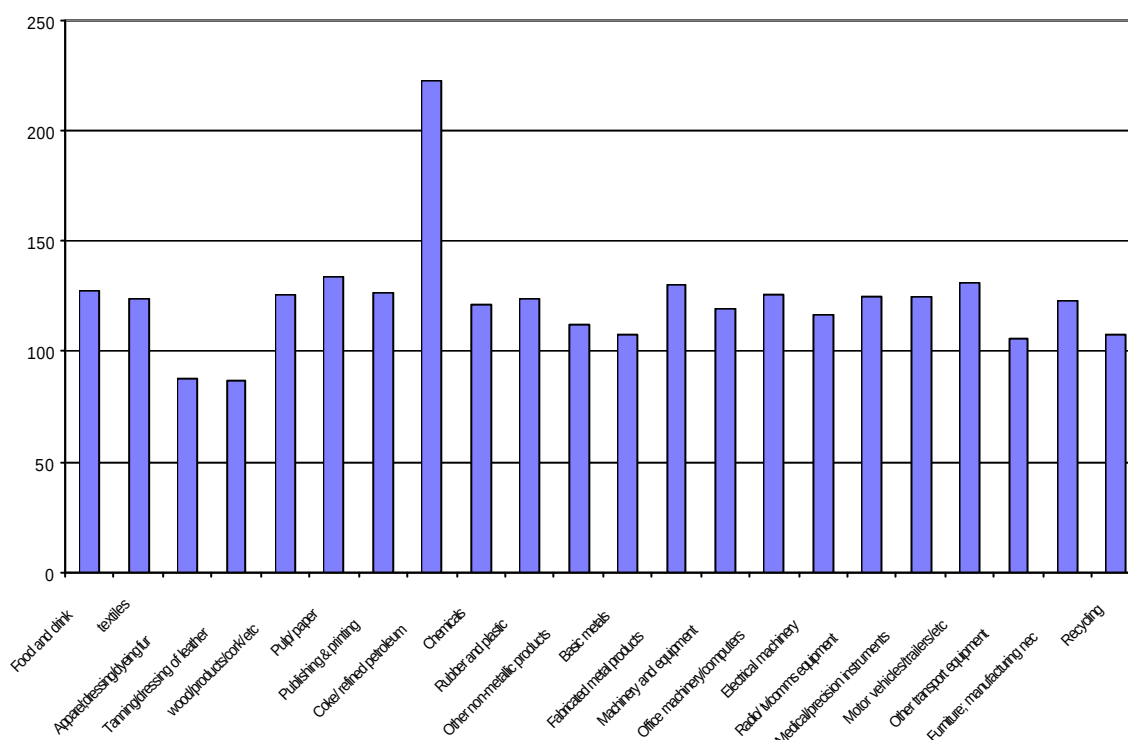
c. Excludes activities membership organisations nec

Note: The ABI does not cover the whole economy. For example, financial intermediation, which has significant foreign sector involvement, is not included. Agriculture and extraction are included within ABI but have been excluded from the table due to disclosure problems. In summary, the table does not give complete coverage of foreign-owned company activity in the UK, hence no total row has been included.

Source: ABI, ONS (special analysis).

4.6.3 Figures 4.3 and 4.4 show average wages in foreign-owned companies as a percentage of the domestic sector at the SIC 2003 subsection level (hence providing more categories/industries than that found in table 4.10). The table from which these figures and other comparative statistics have been derived can be found in Appendix 2 (Table A2.3). Figure 4.3 comprises manufacturing industries whilst Figure 4.4 provides an energy, construction and service sector analysis.

Figure 4.3: Average wages in foreign-owned companies as a % of domestic sector, UK, 2005, manufacturing industries.



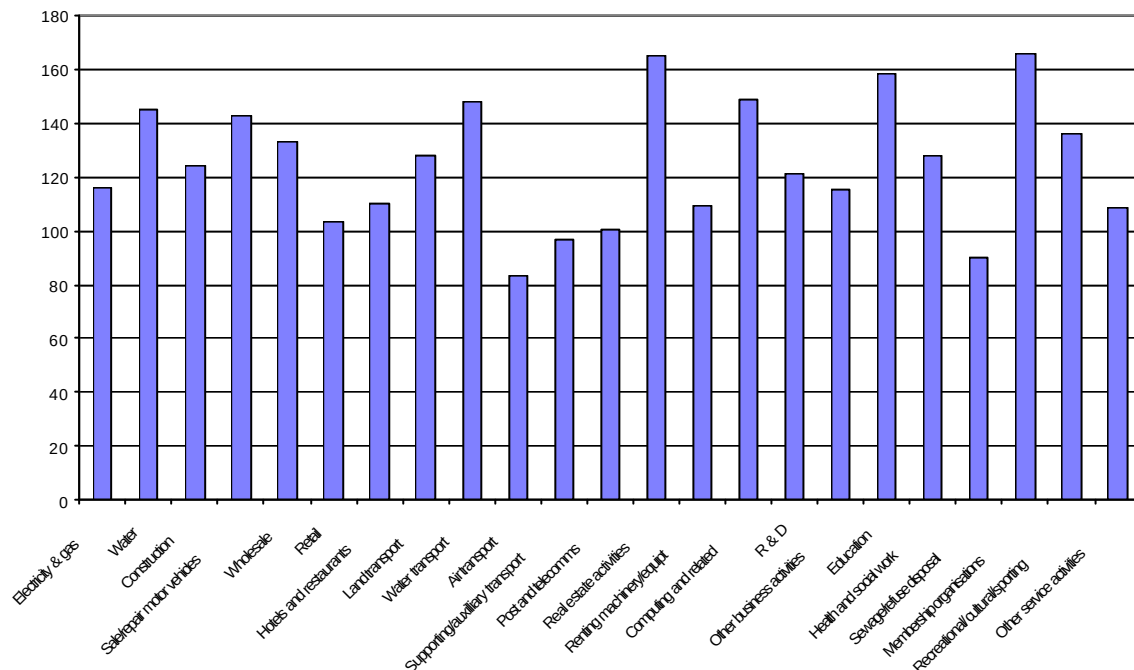
Note: Refer to figure 4.8 for a similar analysis for Wales. The Welsh analysis however is only available at a higher level of aggregation.

Source: derived from ABI (special analysis)

4.6.4 One of the key characteristics of foreign sector activity is that wages are generally higher than in domestic firms. This is illustrated by Figure 4.3 where foreign sector average wages are higher than domestic firms in all but 2 of the defined sectors. The industry with the highest wages relative to the domestic sector is manufacturing of coke and refined petroleum products, where average wages are more than twice that in domestic firms in that sector. This is one example where a more detailed industrial disaggregation would be useful. Even

at the subsection level, each category includes a range of different industries. For example, in relation to the coke and refined petroleum products sector, the foreign owned sector largely comprises of the manufacturing of refined petroleum products part of the sector (e.g. Chevron in Wales), which has higher wages, whereas domestic firms may have a higher presence in the manufacture of coke oven products. A related point is that higher wages in the foreign-owned sector are indicative of higher skill levels and capital intensities within these companies, in addition this is further linked to levels of gross value added (see Figure 4.5 and 4.6).

Figure 4.4: Average wages in foreign-owned companies as a % of domestic sector, UK, 2005, Energy, construction and service industries.



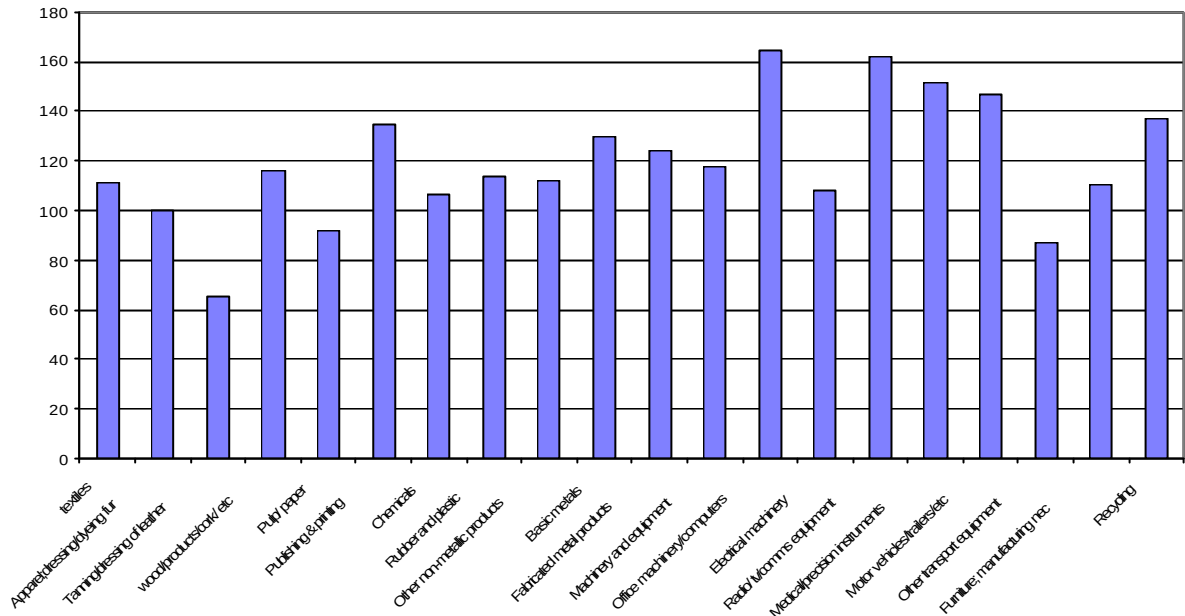
Note: Refer to figure 4.9 for a similar analysis for Wales. The Welsh analysis however is only available at a higher level of aggregation.

Source: derived from ABI (special analysis)

4.6.5 Figure 4.4 provides a wages analysis of the energy, construction and service sectors. This data is useful as there is generally little information on foreign sector activities within these sectors and it remains an under-researched area in the academic literature. As with manufacturing industries, wages within the foreign services sector are generally higher than in domestic firms. In comparison to the domestic sector, the highest average wages in the services sector were in real estate activities, education, and membership organisations, although in the latter case the foreign-owned sample is very small. Average wages are lower for foreign companies compared with domestic firms in the air

transport and auxiliary transport activities and in sewage and refuse disposal industries.

Figure 4.5: GVA per employee in foreign-owned companies as a % of domestic sector, UK, 2005, manufacturing industries.



Note: Refer to figure 4.10 for a similar analysis for Wales. The Welsh analysis however is only available at a higher level of aggregation.

Source: derived from ABI (special analysis). For presentational purposes the figure excludes the manufacture of coke and refined petroleum products, where foreign sector GVA per employee as a percentage of the domestic sector is over 700%. Figures are not available for the food and drink sector due to disclosure problems in the foreign-owned data.

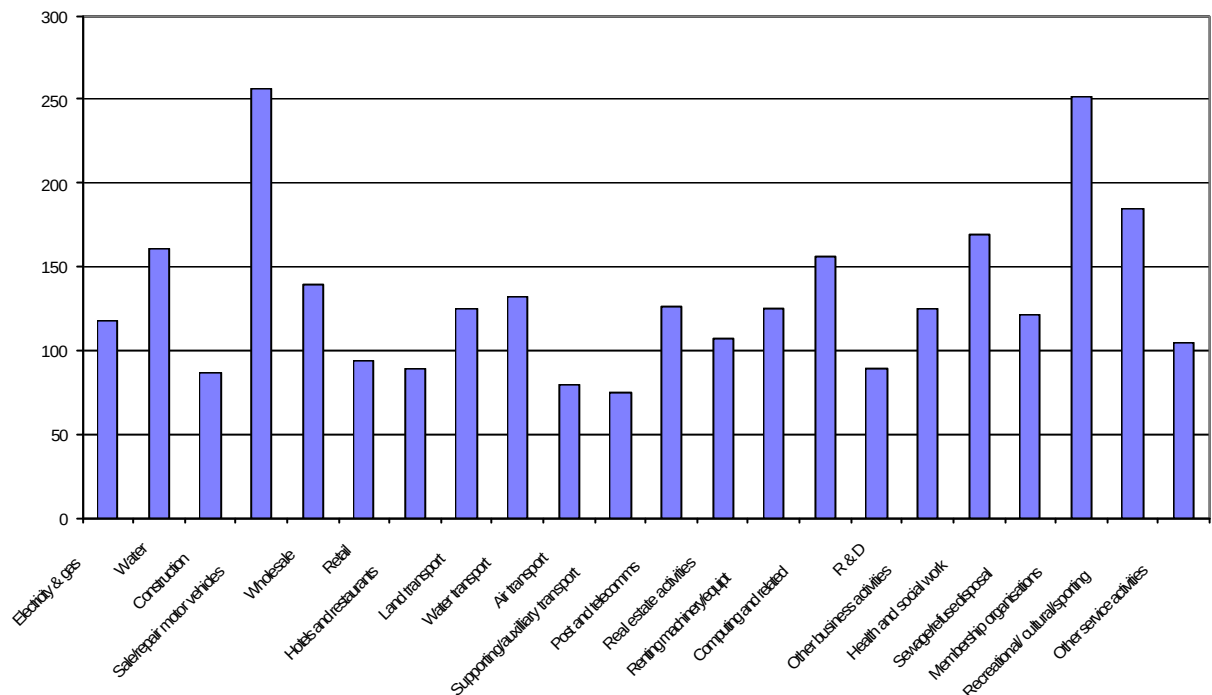
4.6.6 Figure 4.5 shows a GVA comparison between foreign and domestic companies. The similar pattern to the analysis of earnings differentials is very noticeable. Moreover, this is just one way of comparing/measuring productivity differences between these companies. Other measures could be turnover or total output per employee. Information on these other variables for the defined sectors can be found in Appendix table A2.3, and are not illustrated here, as generally there is a relatively high correlation between such variables.

4.6.7 As explained in the note to Figure 4.5, by far the highest relative GVA per employee figure was found in the coke and refined petroleum products. Other high GVA per employee industries were office machinery and computers, and radio, TV and communications equipment. One potential issue in relation to the GVA comparison for these sectors is that of transfer pricing. Transfer pricing activities have the potential to understate profits in the host nation, by overstating the costs of intra-firm transactions, and would thus impact on the recorded GVA levels for those companies (see for example, Munday and Peel, 1997).

4.6.8 Figure 4.6 repeats the productivity comparisons for the energy, construction and services sector (please see note to Figure 4.6 on the education sector). Table

4.10 showed the significance of the foreign-owned wholesale, retail and repair of motor vehicles sector, with over 28,000 sites within the UK in 2005. Figure 4.6 shows the different relative GVA performance of different parts of this sector, with GVA per employee over 250% of that of domestic firms in the sale and repair of vehicles sector, compared with a figure of around 140% for the wholesale trade and 94% for retailing.

Figure 4.6: GVA per employee in foreign-owned companies as a % of domestic sector, 2005, Energy, construction and service industries.



Note: Refer to figure 4.11 for a similar analysis for Wales. The Welsh analysis however is only available at a higher level of aggregation.

Source: derived from ABI (special analysis). For presentational purposes the figure excludes the education sector, where foreign sector GVA per employee as a percentage of the domestic sector is over 500%.

4.6.9 Another key characteristic of foreign-owned companies is that they are larger than domestic firms. This factor may then partly explain, or be related to, the generally higher wages and GVA levels per employee found in the foreign-owned sector (see section 7.3 later). In all of the defined sectors (except education), the foreign companies were significantly larger, in terms of average number of employees by site, than domestic firms, see Appendix 2, Table A2.3

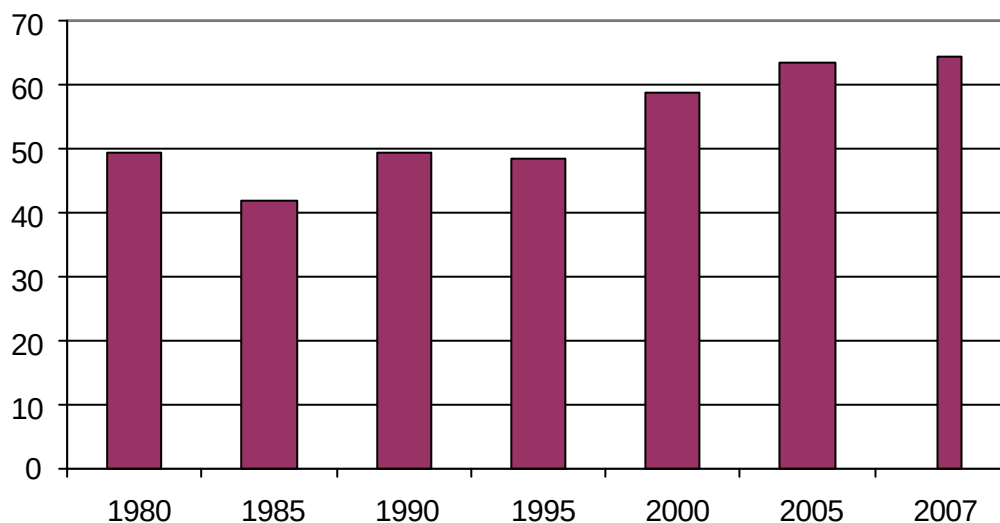
4.7 Welsh FDI trends

4.7.1 The key official data sources for examining FDI trends into Wales are the *Census of Production* (for the period until 1997) the ABI (from 1998) and the *Inter-Departmental Business Register*. There are however a number of important additional data sources which provide an insight into FDI in Wales in the recent

past. One such data source is the Welsh Register of Manufacturing Employment (WRME) this database was compiled and managed within the Welsh Office from 1966. Whilst this database provided extremely useful and detailed information on foreign-owned manufacturing enterprises in Wales, there were differences in coverage and results compared with the main ONS data source at the time (i.e. *Census of Production*, see Hill and Munday 1992a, and Stone and Peck 1996, for a discussion of these and other data issues, see also paragraphs 2.16.1 and 2.16.2 of this report).

4.7.2 Figure 4.7 shows a time trend of employment in foreign-owned manufacturing companies in Wales over the period 1980-2007. There is a break in the data series in 1997/8 when the ONS survey changed from the annual Census of Production to the *Annual Business Inquiry*. Figure 4.7 shows a jump in employment between 1995 and 2000 (Table 4.14 shows this increase to have occurred between 1999 and 2000, see later). However, Figure 4.7 shows that the levels of employment in foreign-owned manufacturing industries does appear to have increased through the period shown.

Figure 4.7: Employment in Foreign-owned manufacturing companies in Wales, selected years, thousands.



Sources: 1980-1995, ACOP, 2000 and 2005, ABI, 2007, IDBR, ONS. Figures for 1980 and 2007 are estimated.

4.7.3 Table 4.11 provides a summary of some new FDI projects since 1997. This table 4.11 gives the company name, sector, new jobs (as announced at the time of the local decision), country of origin, location and year secured. The table contains only a selection of the larger projects (where the new jobs announced were over 100) for which complete information was available.

4.7.4 This table illustrates a diversity of new projects over the last 10 years, in terms of all the variables included within the table. Once again the importance of

service sector new projects can be demonstrated during the period shown, with the largest job announcement figures in Bank One (since relocated out of Wales), 118UK Ltd and Amazon. It would be expected that a significant proportion of these jobs would be part-time and generally at the lower end of the pay spectrum. In the case of Amazon, the announced 1,200 jobs are only now coming on stream. Using the projected jobs figures, Acer Peripherals represented the largest manufacturing employer shown in the table. Acer has also since ceased their operations in Cardiff.

Table 4.11: Selected new inward investment projects 1997-2007.

Company	Sector	New Jobs	Country of Origin	Unitary Authority	Date Secured
Nordam Europe Ltd	Aerospace	156	USA	Caerphilly	1997
Umbro International	Clothing / Footwear	200	USA	Flintshire	1997
Acer Peripherals	Electronics	1000	Taiwan RoC	Cardiff	1997
Toprak Ceramics (UK) Ltd	Construction / Allied Products	430	Turkey	Flintshire	1998
Firstplus Financial Group	Banking / Finance	500	USA	Cardiff	1998
International Rectifier	Electronics	539	USA	Swansea	1998
Bank One International	Banking / Finance	1000	USA	Cardiff	1998
Moller Group	Plastics / Paper	100	Germany	Caerphilly	1999
Cartinvest Spa	Plastics / Paper	140	Italy	Flintshire	1999
Leaveland Shoe Co Ltd	Other Manufacturing	154	Hong Kong	Pembrokeshire	1999
TRB Ltd	Automotive	154	Japan	Denbighshire	1999
Minergy Renewables Ltd	Plastics / Paper	240	USA	Flintshire	1999
Mitsui Components Europe Ltd	Automotive	220	Japan	Carmarthenshire	1999
A & J Europe Bicycle Manufacturing Co Ltd	Other Manufacturing	125	Taiwan RoC	Powys	2000
Athlons Ltd	Clothing / Footwear	142	Hong Kong	Pembrokeshire	2000
Spear Europe	Plastics / Paper	200	USA	Torfaen	2000
Manpower plc	Call Centre	600	USA	Pembrokeshire	2000
One2One Personal Communications Ltd	Call Centre	810	Germany	Merthyr Tydfil	2000
NTL	Call Centre	500	USA	Swansea	2000
SPX Contech	Automotive	180	USA	Powys	2000
Cycle Citi Corp	Other Manufacturing	161	Taiwan RoC	Gwynedd	2000
118UK Ltd	Call Centre	1400	Republic of Ireland	Cardiff	2000
Hi Lex Cable Systems Ltd	Automotive	160	Japan	Neath Port Talbot	2001
On Line Finance	eBusiness	400	USA	Rhondda Cynon Taff	2001
Lidl UK GmbH	Warehouse / Distribution	250	Germany	Bridgend	2001
Faurecia	Automotive	207	France	Flintshire	2001
General Dynamics (UK) Ltd	Telecommunications	290	Canada	Caerphilly	2001
Elev8 Ltd	Call Centre	266	Republic of Ireland	Carmarthenshire	2001
Infonxx Inc	Call Centre	429	USA	Cardiff	2002
FIS (UK) Ltd	Software / IT Applications	124	Israel	Cardiff	2003
Delicarta Spa	Plastics / Paper	304	Italy	Neath Port Talbot	2003
Technoplast	Other Manufacturing	133	Italy	Denbighshire	2004
SEDA UK Ltd	Packaging	190	Italy	Caerphilly	2004
Alcontrol	Environmental Goods / Service	220	Netherlands	Flintshire	2004
Aldi	Business Services	200	Germany	Cardiff	2004
ING Direct	Banking / Finance	300	Netherlands	Cardiff	2004
Quinn Group	Engineering - General	460	Republic of Ireland	Newport	2005
Steinhoff UK Holdings Ltd	Furniture / Wood Products	120	South Africa	Bridgend	2006
G24 Innovations	Optoelectronics	300	USA	Cardiff	2006
Valtech	Software / IT Applications	167	France	Torfaen	2007
Amazon.com	Warehouse / Distribution	1200	USA	Neath Port Talbot	2007
Quinn Therm UK Ltd	Engineering - General	341	Republic of Ireland	Newport	2007

Source: IBW. The above table includes all projects irrespective of Welsh Assembly Government involvement. The figures regarding jobs are those stated by the companies at the time of the decision to invest and do not take into account any subsequent developments.

4.7.5 Table 4.12 uses data from the IBW database to analyse new inward investment projects over the 1984-2007 period. The table shows overseas inward investment projects into Wales by type, classifying acquisition, expansion, joint venture and new projects. This is an important characterisation as some impacts are expected to vary depending on mode of entry. The table also shows planned capital investment by these projects for each period. The final two rows

show planned jobs (new and safeguarded) associated with the projects in each period.

- 4.7.6 Over the whole period shown in Table 4.12, expansion projects have comprised the largest share of total projects, followed by new projects. In total Wales has secured almost 1,500 overseas inward investment projects since 1984, which can be associated with over £13.5bn of planned capital investment, almost 100,000 planned new jobs and 70,000 safeguarded jobs.
- 4.7.7 The IBW database also enables analysis of origin country and sectors. England is included as an origin country as this is a target market for IBW activities, and is unsurprisingly shown to be the top source country (in terms of projects) during the 1984-2007 period. The USA was by far the most significant overseas inward investment source country, accounting for 516 projects, £6bn of planned capital investment, over 33,700 planned new jobs and over 36,000 safeguarded jobs from 1984-2007. The next most significant source countries were Japan (183 projects), Germany (133 projects) and France (84 projects). Appendix 2, Table A2.4 provides more detail on source countries and associated number of projects, jobs and capital investment for each year.
- 4.7.8 The top sector (in terms of number of projects) during the 1984-2007 period was automotive, which links to the importance of US investment outlined above. The second ranked sector was other manufacturing, with electronics ranked third (a significant share of which can be associated with Japanese investment). Further details on the top sectors for each year are given in Appendix 2, Table A2.5.
- 4.7.9 Table 4.13 contains information on selected closures during the last decade. In similarity to Table 4.11, this table only includes a selection of companies where information is relatively complete. This information has been derived from press reports and the Jordans FAME database. Whilst Table 4.11 contained a mix of sectors, Table 4.13 is populated entirely by manufacturing firms. That is not to say there have not been any closures/dis-investments in the service sector (Bank One being one example previously mentioned, in addition there have been movements of some call centre activities out of Wales and the UK more generally to locations such as India and South Africa). However closures during the period have certainly been concentrated amongst manufacturing firms.

Table 4.12: Wales inward investment (excl. UK) 1984 – 2007, totals

Project type	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Acquisition		3	10	3	4	7	14	9	17	16	9	9	10	6	8	4	5	4	8	11	7	5	13	11	193
Expansion	17	23	22	30	26	22	43	40	49	39	44	43	38	40	29	27	20	37	22	47	29	30	22	20	759
Joint Venture		2	4	3			2	5	2	1	2			1	1	1	1	1		3	1	1			31
New	28	20	14	23	27	20	18	36	15	15	14	14	17	13	17	15	19	19	15	14	25	15	22	28	463
Grand Total	45	48	50	59	57	49	77	90	83	71	69	66	65	60	55	47	45	61	45	75	62	51	57	59	1,446

Capital Investment (£m)	163.9	143.7	155.2	158.6	1048.8	476.3	401.9	733.4	824.7	775.8	857.8	559.2	2402.6	1037.6	555.9	598.6	123.0	555.9	329.5	510.7	248.4	389.1	180.2	335.7	13566.5
Jobs new	5,256	2,779	2,033	4,110	6,034	3,787	2,674	6,666	2,406	3,699	3,093	3,400	11,122	4,998	5,017	3,031	5,215	5,035	2,413	4,334	4,179	3,133	2,082	3,195	99,691
Job safeguarded	4,544	1,378	2,865	877	2,085	2,533	7,232	5,308	5,249	1,700	3,002	4,025	2,138	2,361	1,880	3,797	1,209	3,826	2,757	4,796	1,575	1,334	2,575	1,881	70,927

Source: IBW database (DE&T, Welsh Assembly Government)
Database was maintained by Welsh office from 1983 to 1995
Database maintained by WDA from 1996 to 2006
Database maintained by IBW (DE&T) since 2006

Table 4.13: Selected FDI closures, 1997-2007

Company name	Sector/product	Origin	Town/Local Authority	Year closed*
Acco (UK) Ltd	Office products	USA	Bridgend	2002
Aeroquip Industrial Operations Trinova Ltd	Industrial hoses	USA	Cardiff	2000
Alcoa Manufacturing GB Ltd	Aluminium alloy	USA	Swansea	2007
Alumax Extrusions Ltd	Architectural aluminum systems	USA	RCT	2005
Arjo Wiggins	Carbonless paper manufacturer	France	Cardiff	1999
Asat (UK) Ltd	Assembly and test of micro-processors.	Hong Kong	Newport	2005
Bosal Industries Ltd	Motor vehicles parts and accessories	Belgium	Blaunau Gwent	2001
Cardiff Ball Co. Ltd	Ball Bearing	USA	RCT	2005
Continental Can Company Ltd	Can ends	Germany	RCT	1999
Delta Dailyfood (UK) Ltd	Airline and retail food/services	Netherlands	Wrexham	2006
Diaplastics (UK) Ltd	Covers & panels for electrical equipment	Japan	Bridgend	2005
European Fine Blanking	Precision engineering components	India	Wrexham	2005
Grillo Zinc Oxide (UK) Ltd	Zinc Oxide Powder	Germany	Carmarthen	2007
Grundig Satellite Communications	Domestic satellite receivers	Germany	RCT	2003
Kuhn Precision Tooling Ltd	Precision engineering	Germany	Caerphilly	1999
Lucas SEI Wiring Systems Ltd	Automotive wire harnesses	Japan	RCT	1999
Marflex Int Ltd	Chimney Building and Lining Products for domestic products	France	Vale of Glamorgan	2003
Matsushita Electric (UK) Ltd	CTVs, Tv monitors & microwave oven	Japan	Cardiff	2000
Matsushita Electronic Components (UK)	Electronic Components for CTV's, VCR's & Microwaves	Japan	Neath & Port Talbot	2006
Newport Wafer Fab	Production of silicon wafers	Hong Kong	Newport	2002
Nippon Electric Glass Ltd	Glass for cathode ray tubes	Japan	Cardiff	2005
Owens Corning Fibreglass (GB) Ltd	Fibreglass for reinforcement purposes	USA	Wrexham	2003
Pirelli Cables Ltd/ Prysmian Cables & Systems	Manufacture of communication cables	Italy	RCT	2002
Punch Precision Ltd	Manufacture of metal components for consumer industry	Belgium	Mid Glamorgan	2003
Seal Technology Systems	Automotive components	USA	Cardiff	1999
Senator Window Systems Ltd	Manufacture of UPVC windows	Ireland	RCT	2002
Sharp Precision Manufacturing (UK) Ltd	VCR's, microwave ovens, electronic typewriters & plain copiers	Japan	Wrexham	2005
Sun Valley Foods	Poultry, chicken processing	USA	Torfaen	2002
Takiron (UK)	PVC corrugated sheet	Japan	Newport	2001
Teddington Bellows Ltd	Industrial bellows	USA	Swansea	2000
UK Extrusions & Plastic Bags Ltd	Retail plastic shopping bags	Germany	Neath & Port Talbot	2003
Valeo Climate Control Ltd	Air conditioning system	France	Swansea	2001
Warner Lambert (UK) Parke-Davis	Pharmaceuticals, healthcare	USA	Torfaen	1999

*Year closed/year of announcement/year dissolved.

4.7.10 Figure 4.7 earlier showed only foreign-owned manufacturing employment trends. Traditionally, official information on the foreign-owned sector in Wales and the UK has focussed on manufacturing/production sectors. However, as discussed, in more recent years, service sector FDI has become increasingly significant, and as such there have been increasing demands for information on service sector activity. As already noted in Section 4.1, the ABI contains data on foreign-owned company activity in the production and services sector (see Table 4.15).

4.8 An Industrial analysis of foreign-owned company activity in Wales

4.8.1 Table 4.14 shows the number of foreign-owned sites and total number of employees (full-time plus part-time) by industry over the period 1998-2005. There are incomplete series in some of the industries specified due to confidentiality issues. However, every industry, with the exception of mining and quarrying, has shown an increase in employment over the period 1998 – 2005. The fastest growth has occurred outside of manufacturing. For example, in the energy sector, employment was ‘nil or negligible’ in 1998, but was over 1,500 in 2005. The wholesale and retail sector is the most significant in terms of number of sites, with over 1,100 recorded by the ABI in 2005, accounting for almost 24,700 employees, increasing from 7,400 employees in 1998.

4.8.2 Table 4.15 provides more detail on foreign-owned company activity in 2005. This table includes additional variables such as a breakdown of employees into full and part-time by gender, gross wages, turnover, GVA and total output. In addition, the final section of the table provides a comparison to all companies to give an indication of the significance of the foreign-owned sector in relation to the total. Foreign-owned manufacturing industries are insignificant in terms of number of sites i.e. only 6% of total manufacturing sites in 2005, however due to their larger size account for 38% of all manufacturing employees, and due to higher average wages, account for 45% of total manufacturing wages and salaries. In addition due to higher average levels of output per employee, foreign-owned manufacturing turnover, output and GVA is over 50% of their respective manufacturing totals (see Figures 4.8 and 4.10 for more detail on these relativities). In sectors outside of manufacturing there is less of a dramatic picture. In the energy sector, the foreign-owned component was responsible for 21% of sites, 39% of employment and 38% of output in 2005. The foreign-owned retail and wholesale sector has grown significantly over the 1998-2005 period, and in 2005, accounted for 13% of total sector GVA. More significant, in terms of employment, wage and output share is transport, storage and communication, where the foreign sector represented 15% of employees and 21% of GVA.

Table 4.14: An industrial analysis of foreign-owned company sites and employment in Wales, 1998-2005.

	Number of Sites	1998	1999	2000	2001	2002	2003	2004	2005
C	Mining & quarrying	*	25	28	*	*	*	*	7
D	Manufacturing	278	303	314	360	360	427	411	428
E	Electricity, gas and water supply	-	*	*	*	21	27	27	34
F	Construction	32	37	48	40	37	39	42	40
G	Wholesale and retail trade; repair of motor vehicles, motorcycles etc	486	519	544	785	819	870	906	1,128
H	Hotels and restaurants	8	137	197	196	204	180	201	209
I	Transport, storage and communication	132	124	103	176	196	210	171	178
K	Real estate, renting and business activity	114	195	221	224	187	269	273	284
M	Education	*	*	*	8	10	11	*	12
N	Health and social work	*	*	*	17	17	24	29	67
O	Other community, social and personal service activity	67	79	68	81	49	75	58	60
	Total Number of Employees	1998	1999	2000	2001	2002	2003	2004	2005
C	Mining & quarrying	*	326	631	*	*	*	*	180
D	Manufacturing	43,379	44,896	58,624	52,228	56,759	59,536	59,195	63,304
E	Electricity, gas and water supply	-	*	*	*	*	1,718	1,516	1,589
F	Construction	367	940	1,342	1,965	935	1,588	1,956	1,945
G	Wholesale and retail trade; repair of motor vehicles, motorcycles etc	7,373	6,570	12,229	16,743	19,452	19,894	22,807	24,693
H	Hotels and restaurants	162	*	4,948	5,478	5,780	5,853	6,385	6,032
I	Transport, storage and communication	2,175	2,100	2,652	3,715	4,361	4,072	7,610	7,613
K	Real estate, renting and business activity	4,936	4,610	9,384	7,618	7,990	9,493	10,906	9,168
M	Education	*	*	*	*	*	178	*	132
N	Health and social work	*	*	*	631	779	1,201	1,614	2,802
O	Other community, social and personal service activity	577	986	860	895	1,264	1,282	1,377	1,422

Source: ABI, ONS (Special analysis)

Key

- Nil or negligible
- * Represents data that has been suppressed because of confidentiality

Table 4.15: A Summary of scale and scope of foreign-owned company activity, Wales, 2005.

Foreign		Number of Sites	Total Number of Employees	Number of male full-time employees	Number of male part-time employees	Number of female full-time employees	Number of female part-time employees	Gross Wages & Salaries	Total Turnover (excl VAT)	Gross Value Added	Total Output at basic prices
								£th	£th	£th	£th
C	Mining & quarrying	7	180	148	4	21	7	3,931	26,866	8,058	24,451
D	Manufacturing	428	63,304	49,313	568	11,903	1,520	1,645,362	17,034,052	3,430,764	14,699,622
E	Electricity, gas and water supply	34	1,589	1,177	12	322	77	32,999	817,860	399,415	824,596
F	Construction	40	1,945	1,654	25	185	81	42,765	175,439	66,362	174,332
G	Wholesale and retail trade; repair of motor vehicles, motorcycles	1,128	24,693	6,875	3,366	4,477	9,976	248,006	3,666,371	568,539	1,079,694
H	Hotels and restaurants	209	6,032	1,544	1,340	1,377	1,771	42,353	134,545	67,417	130,716
I	Transport, storage and communication	178	7,613	4,534	515	1,779	785	172,590	1,063,476	428,115	925,651
K	Real estate, renting and business activity	284	9,168	4,276	942	2,501	1,450	153,476	380,765	266,610	364,517
M	Education	12	132	36	3	*	19	3,393	3,959	*	*
N	Health and social work	67	2,802	296	133	1,179	1,193	25,465	59,649	*	*
O	Other community, social and personal service activity	60	1,422	396	289	311	427	14,960	61,110	34,055	59,154

All											
C	Mining & quarrying	143	1,639	1,454	12	139	34	49,359	352,104	116,067	333,011
D	Manufacturing	6,946	168,601	126,612	2,623	32,179	7,187	3,664,267	29,217,203	6,855,289	26,317,665
E	Electricity, gas and water supply	164	4,027	3,062	45	723	197	93,068	2,141,822	1,063,485	2,169,793
F	Construction	10,193	54,564	44,721	1,867	4,604	3,372	1,015,252	5,456,073	2,282,157	5,432,417
G	Wholesale and retail trade; repair of motor vehicles, motorcycles	22,847	198,608	64,971	26,923	34,250	72,464	2,027,219	22,564,330	4,429,129	7,312,652
H	Hotels and restaurants	8,881	78,270	15,969	15,311	14,656	32,334	520,709	2,309,075	997,303	1,837,217
I	Transport, storage and communication	4,527	51,454	35,185	4,290	7,806	4,174	940,507	4,431,811	2,050,719	4,209,537
K	Real estate, renting and business activity	20,754	118,303	50,620	11,361	31,757	24,566	1,693,213	5,151,035	3,458,343	5,016,303
M	Education	1,319	43,472	11,958	5,015	13,422	13,077	727,619	519,334	*	*
N	Health and social work	2,807	38,678	4,283	1,738	15,846	16,811	407,262	837,811	*	*
O	Other community, social and personal service activity	7,243	48,834	17,429	7,505	10,323	13,577	635,536	3,494,719	1,127,265	3,335,787

foreign as % of all/total											
C	Mining & quarrying	5	11	10	31	15	22	8	8	7	7
D	Manufacturing	6	38	39	22	37	21	45	58	50	56
E	Electricity, gas and water supply	21	39	38	27	45	39	35	38	38	38
F	Construction	0	4	4	1	4	2	4	3	3	3
G	Wholesale and retail trade; repair of motor vehicles, motorcycles	5	12	11	13	13	14	12	16	13	15
H	Hotels and restaurants	2	8	10	9	9	5	8	6	7	7
I	Transport, storage and communication	4	15	13	12	23	19	18	24	21	22
K	Real estate, renting and business activity	1	8	8	8	8	6	9	7	8	7
M	Education	1	0	0	0	*	0	0	1	*	*
N	Health and social work	2	7	7	8	7	7	6	7	*	*
O	Other community, social and personal service activity	1	3	2	4	3	3	2	2	3	2

Source: ABI, ONS (Special analysis)

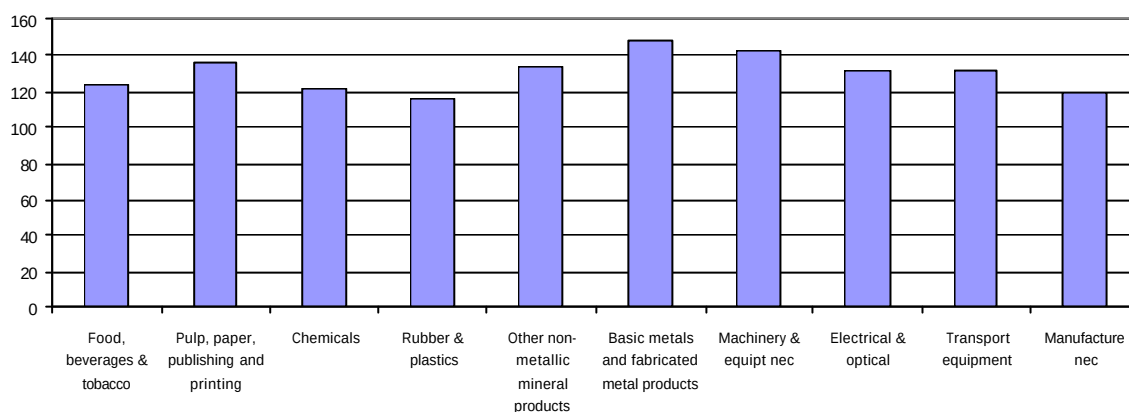
Key

- Nil or negligible, * Represents data that has been suppressed because of confidentiality

4.9 The characteristics of FDI in Wales

4.9.1 Figure 4.8 shows average wages in manufacturing industries at the SIC 2003 subsection level in 2005. Information is not available for all sub-sections due to disclosure issues (see note to the figure). However for all those industries shown, average wages were well above those of the domestic sector. The highest average wages, both in absolute and in relative terms was in the basic metals and fabricated metals industry. In this industry wages were almost 50% above those in the domestic sector.

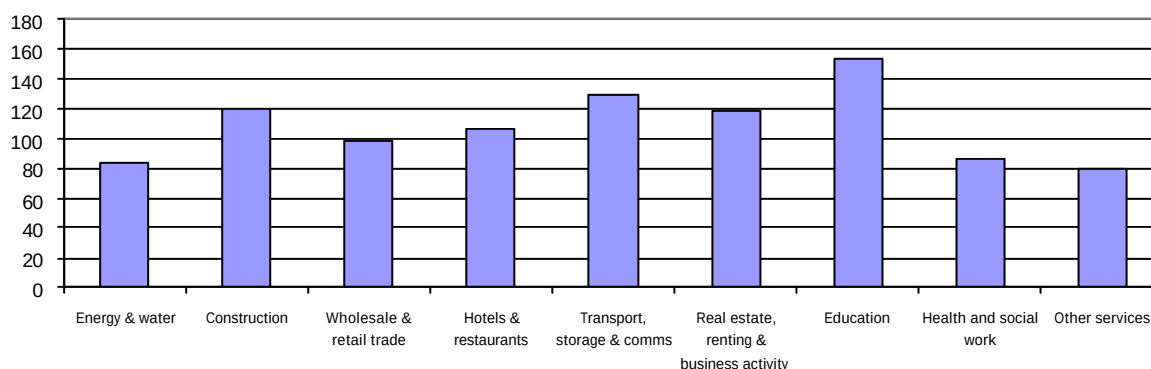
Figure 4.8: Average wages in foreign-owned companies as a % of domestic sector, Wales, 2005, manufacturing industries.



Note: Refer to figure 4.3 for a similar analysis for the UK. The UK analysis however available at a higher level of disaggregation.

Source: derived from ABI (special analysis). Data is not available for the manufacture of textiles and textile products, and wood and wood products due to disclosure problems.

Figure 4.9: Average wages in foreign-owned companies as a % of domestic sector, Wales, 2005, Energy, construction and service industries



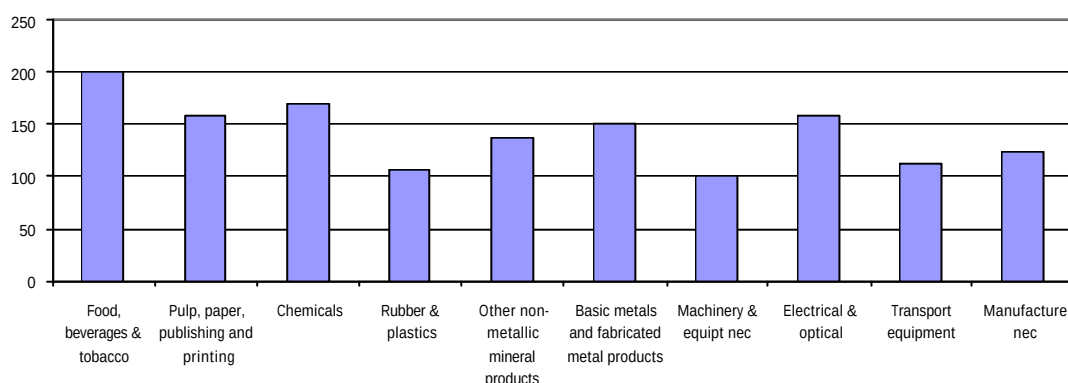
Note: Refer to figure 4.4 for a similar analysis for the UK. The UK analysis however available at a higher level of disaggregation.

Source: derived from ABI (special analysis).

4.9.2 Figure 4.9 provides the same analysis, but for foreign-owned energy construction and service industries in Wales. Here the picture is mixed. In the education sector, average wages are the highest relative to the domestic sector. This is however based on a very small sample – Table 4.16 shows that there were just 12 sites and 132 employees in the foreign-owned education sector in 2005. The finding will also be due to the largely public versus private sector comparison in the education sector. The lowest average wages, when compared with the domestic sector were in other services, health and energy industries.

4.9.3 Due to the aggregate nature of the data on the foreign-owned sector, the analysis shown in Figures 4.8 and 4.9 does not provide any controls for job composition (for example in terms of tasks and skills) within the defined sectors. As a result the data does not allow a comparison of wages in foreign firms with similar domestic firms. Indeed even at a micro level, such analysis would be limited as there are very few domestic firms in Wales which could be usefully compared with similar foreign counterparts.

Figure 4.10: GVA per employee in foreign-owned companies as a % of domestic sector, Wales, 2005, manufacturing industries.



Note: Refer to figure 4.5 for a similar analysis for the UK. The UK analysis however available at a higher level of disaggregation.

Source: derived from ABI (special analysis). Data is not available for the manufacture of textiles and textile products, wood and wood products and coke and refined petroleum products due to disclosure problems.

- 4.9.4 A comparison of GVA per employee in foreign-owned and domestic manufacturing industries is shown in Figure 4.10. The highest relative GVA per employee was in food, drink and tobacco. This relative GVA per employee gap with domestic firms is much higher than the average wage gap (Figure 4.8), therefore indicating relatively high levels of other value added (e.g. profits) in this sector. The lowest GVA per employee relative to the domestic sector is in machinery and equipment nec. Here GVA per employee is equivalent to that in domestic firms.
- 4.9.5 As with Figure 4.10, the GVA per employee picture for energy, construction and service industries shows some variation by sector (see figure 4.11). By far the highest GVA per employee was in transport, storage and communications, where the foreign-owned sector outperformed the domestic sector by over 60%. Wholesale and retail and other services were the only other industries where GVA per employee in the foreign-owned sector exceeded that of domestic firms. The data from which Figures 4.8-4.11 have been derived, together with selected other variables can be found in Appendix 2, Table A2.6.
- 4.9.6 This information suggests a potential avenue for further research. This data is useful and interesting, however the sectors are fairly broad, and will hence disguise potentially significant data for particular sub-sectors, particularly in the service sector. Case studies could be designed to provide a better understanding of inward investor characteristics. Such data could be then potentially enable more accurate sector descriptions to be derived. This information could be useful for sector targeting, and for economic policy more generally.

Figure 4.11: GVA per employee in foreign-owned companies as a % of domestic sector, Wales, 2005, Energy, construction and service industries.



Note: Refer to figure 4.6 for a similar analysis for the UK. The UK analysis however available at a higher level of disaggregation.

Source: derived from ABI (special analysis). Data is not available for education or health industries due to disclosure problems.

4.10 FDI in Wales in 2007

4.10.1 The final set of information provides the most recent official data on the foreign sector in Wales. These tables have been derived from the IDBR which shows UK and non-UK (foreign) enterprises, local units and employees.

4.10.2 In terms of the geographical distribution of foreign-owned company employment in 2007, the highest numbers were in Flintshire and Wrexham in the North and Swansea, Rhondda Cynon Taff, Newport and Cardiff in the South of Wales, largely following the distribution of total employment. Cardiff has by far the highest numbers of UK and non-UK firm employees.

4.10.3 The industrial distribution of economic activity is shown in Table 4.16. The manufacturing sector is not separately identified in the table, but is included within the agriculture and production sector. Manufacturing will however comprise the majority of this broad sector which together accounted for 360 enterprises, 540 units and over 66,200 employees. In terms of employees, the foreign-owned agriculture and production companies represented over 36% of total employment in that broad sector. Total employment in all non-UK enterprises in 2007 was an estimated 132,800.

Table 4.16: Enterprises active in Wales, by broad industry, 2007 (a) (b), %.

	Enterprises		Local Units		Employees	
	UK	Non-UK	UK	Non-UK	UK	Non-UK
Agriculture and Production	23.5	36.7	21.4	19.1	17.1	49.9
Construction	11.2	3.6	10.0	2.3	6.4	2.4
Distribution, Hotels, Restaurants and Transport	30.9	33.2	32.6	58.0	36.4	31.7
Financial and Business Services	22.2	21.4	22.4	14.9	19.3	12.9
Public Administration, Health and Education	5.2	2.0	6.5	2.0	15.5	1.8
Other Services	7.0	3.1	7.1	3.7	5.3	1.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0
Wales totals	93,270	980	106,625	2,820	681,980	132,785

Source: Inter-departmental business register (IDBR), Office for National Statistics

(a) Excludes central and local government

(b) The industry is based on the main industry of the UK enterprises

4.10.4 Table 4.17 shows the ultimate country of ownership of the stock of enterprises in Wales in 2007. The US is still by far the dominant provider of foreign enterprises and employment, accounting for over 36% of non-UK employment (47,800 employees) in 2007. Other main countries of ownership in terms of employees are Italy, Spain and Germany.

Table 4.17: Non-UK enterprises active in Wales by ultimate country of ownership, 2007, (%).

Enterprises	Enterprises	Local Units	Employees
United States of America	27.3	24.6	36.1
Italy	2.0	1.1	10.1
Spain	2.0	2.5	9.4
Germany	9.6	14.7	8.5
Netherlands	8.6	4.6	5.8
France	8.6	14.5	5.3
Republic of Ireland	5.6	3.2	4.0
Sweden	2.5	1.4	2.9
Japan	5.1	2.1	2.5
Denmark	2.5	1.1	2.1
Canada	2.5	1.4	1.6
Switzerland	3.0	1.9	0.8
Other Europe	8.1	6.4	0.7
Jersey, Channel Islands, Alderney, Gernsey	3.5	6.4	0.7
Other countries	9.1	14.2	9.6
Total	100.0	100.0	100.0

Source: Inter-departmental business register (IDBR), Office for National Statistics

4.11 Conclusions

4.11.1 The aim of this section has been to review trends in the UK and its regional economies. Key conclusions from the data analysis are:

- The UK is one of the world's most significant FDI nations, both as a host and home country. The UK is the home country of a series of major financial and non-financial MNEs.
- Cross border M&As are a significant component of total inward FDI flows, and UK firms have been involved in a number of 'mega' M&A deals in the very recent past.
- Inward FDI flows to the UK and to Wales have been on an increasing trend. However there is a deal of uncertainty about the short to medium term prospects for FDI globally as a result of the sub-prime crisis and its implication for the world economy.
- In September 2007, the Economist Intelligence Unit published its *World Investment Prospects*. This included a summary of the UK's past FDI performance together with future projection to 2011. In terms of the UK economy, its inward FDI performance is expected to dip in 2008, but to then show a steady recovery in the period to 2011, with inflows representing an estimated 4% of GDP
- The June 2008 *OECD Investment News* showed that FDI inflows into the UK grew by 25.9% between 2006-07 to \$186bn, but the OECD also predicted a sharp fall in inflows during 2008
- For both the UK and Wales this review has shown the increasing trend of service sector FDI. The statistics have also confirmed that the foreign-owned companies are generally more productive and pay higher wages than domestic firms. As has

already been discussed, this may be due to a series of firm characteristics, and may only partly be attributed to 'foreignness'. For example, the foreign-owned companies were shown to be significantly larger in terms of number of employees per site compared with domestic firms.

- The data provided by IBW, UKTI and fDi Markets (Crossborder Investment Monitor) provide an interesting addition to published and official sources, giving an insight into particular features of new projects.
- Wales has maintained a relatively steady flow of new projects in recent years. These projects show a sectoral and ownership diversity, but with an increasing importance of service sector projects. It does, however, appear that exits are dominated by manufacturing firms. Again, in the near future, the prospects are highly uncertain.
- Whilst there have been significant losses in manufacturing generally, foreign-owned company activity is still an important part of this sector (50% of GVA in Welsh manufacturing is accounted for by the foreign-owned sector). In addition the generally higher average wages and productivity mean this is an important part of the economy of Wales.
- In addition the service sector has experienced growth, and so has the foreign-owned component of this sector.

5 Stage 2 Review: Impacts of foreign direct investment (introduction & issues)

5.1 Introduction

5.1.1 Stage 2 of the research review examines the effects of FDI. The focus here is on host country effects of FDI, rather than impacts on home country. However, the research literature on the impacts of overseas expansion of domestic firms on local operations may be relevant for Wales as UK based multinationals invest overseas, and with possible ramifications for their UK regional subsidiary operations, perhaps in terms of loss of employment opportunities, or movement towards the production of higher value added goods and services and the possibility of better employment conditions.

5.1.2 The key objectives of this part of the review are then to:

- Develop a typology of FDI host country impacts through which the review findings can be structured, and then consider the association between the theory of the multinational, and the expectation of the superior performance of the foreign-owned sector in a host economy.
- Examine and review studies that have explored the role of FDI on domestic allocative efficiency, and its role in changing market structure and competitive conditions (for example, breaking down domestic monopolies, and reducing levels of industry concentration).
- Review studies that have explored FDI effects in terms of improvements to aggregate and industry productivity growth, and the evidence for productivity spillovers from the foreign to the domestic sector.
- Review research that has focused on the labour market effects of FDI, and impacts in terms of wage spillovers, industrial relations effects, and impacts on work practices, including those in firms both upstream and downstream of the foreign subsidiary.
- Consider the connection between firm characteristics (sector, size) and the scale and type of effects arising from foreign firms.

5.2 Scoping the impact issues

- 5.2.1 It is accepted that the most explicit impact of foreign manufacturing is often the creation of new facilities and resulting employment. However there is a strong policy expectation that FDI will have a wider series of host economy effects, perhaps based on their superior performance. For example, the empirical literature, and general statistics analysis, as shown in section 4, reveals performance gaps between foreign and domestic firms in terms of productivity, earnings, returns, growth, labour relations, skill intensity, advertising intensity, and innovation (see later).
- 5.2.2 What is less clear is whether performance gaps are due to foreignness or other firm level and general industry characteristics. This latter issue is very important with countries such as the UK and Wales placing significant amounts of resources towards the promotion of locations for overseas firms. In part this resource allocation is based on the notion that such firms are more efficient and that increasing levels of foreign ownership might improve national productivity levels. Consequently a challenge is to explore whether performance gaps between foreign firms and their domestic counterparts can be theoretically justified, and then the more difficult issue of whether foreign ownership of assets explains performance gaps in empirical terms.
- 5.2.3 Elements of the theory of the multinational do support the notion of a performance gap, and then the potential for positive domestic economy impacts. For example, the ownership advantage of foreign firms in terms of both tangible and intangible assets potentially provides these firms with a competitive edge over their domestic counterparts (Dunning, 1993). However, the unique ownership advantages of foreign firms, may have the characteristics of a public good – particularly in the realms of technology – whereby a foreign firms' advantages could be transitional and with some potential for new technologies to spillover and be appropriated into the domestic sector, with resulting improvements in domestic industry competitiveness (Driffield and Munday, 2000, 2001). A number of factors influence the potential for these types of spillovers and these are considered in Section 6.
- 5.2.4 More generally, aside from direct effects in terms of new capital, employment and output, multinational enterprises may improve allocative efficiency through entering industries with high entry barriers, and can potentially break down domestic monopolies and improve competition (Blomstrom and Kokko, 1996). Moreover, the presence of multinational enterprises might improve rates of technical diffusion, remove supply bottlenecks, and prompt the introduction of new operational techniques through, for example, buyer-supplier linkages, improved logistics chain management and through personnel and industrial relations practices. The impact of Japanese investment in Wales on UK

industrial relations practices is a case in point of the latter (see Morris *et al.*, 1993, and more generally Oliver and Wilkinson, 1992).

- 5.2.5 Linked to the above perspectives, research has highlighted that different types of effects can be associated with different types of investment, and with some setting out challenges in terms of the need for location marketing organisations to be far more selective in targeting foreign capital (Gorg, 2004).
- 5.2.6 Moreover, particularly in the UK case, there has been some recognition that elements of policy that actively 'push' foreign investors to areas bereft of appropriate social and physical infrastructures, and agglomerations of like investment, could impede FDI development, and with longer term ramifications for national competitiveness (Porter, 1996; Driffield and Munday, 2000).
- 5.2.7 Much of the UK and international evidence points to a positive association between foreign involvement and indigenous performance (see e.g. Barrell and Pain, 1999). Moreover, evidence is widespread on the superior productivity of multinational enterprise over domestic counterparts, and with research in Wales adding to this evidence base (Davies and Lyons, 1991, Munday and Peel, 1997). Empirical evidence linking FDI to technical progress has become more widespread and with a series of studies seeking to explore the impact of sector-specific inward investment on labour productivity and technical progress (see e.g. de la Potterie and Lichtenberg, 2001).
- 5.2.8 Other research has explored the level of foreign investment in particular industries and the growth of industry comparative advantage. As a consequence the strengthening comparative advantage was found to further encourage new foreign manufacturing investment, this then providing evidence of the dynamic benefits of FDI spillovers (Driffield and Munday, 2000). Critical work has suggested that the scale of impacts can be associated with the type of foreign involvement and the nature of the reference domestic sector, such that the scale of general spillover effects might be associated to the size of the technology gap between the foreign and domestic sector (see Blomstrom *et al.*, 2000; Driffield and Love, 2005, Girma and Gorg, 2004).
- 5.2.9 To summarise, the reviewed literature is expected to reveal that foreign involvement within an industry sector (and economy) is connected to improvements in the technical efficiency of domestic firms, but that the nature and scale of improvements varies according to a number of industry specific factors.

5.3 Typology of effects

- 5.3.1 As the above outline suggests, the scope of the FDI impacts literature is very broad such that structuring the review is a challenging exercise in and of itself. The review is developed alongside a typology of effects as shown in Table 5.1.
- 5.3.2 Under each review category in Table 5.1 the approach is to synthesise findings in terms of studies outside the UK, but to focus more on UK evidence where it is available. There is a need to be mindful that links should be made between the review of FDI impacts, and the earlier review of determinants with clear connections in strands of this literature.
- 5.3.3 Table 5.1 shows that the Stage 2 review begins with contextual material showing the extent to which theoretical perspectives reveal that spillovers might occur. Here there is also a consideration of the scope for spillovers in terms of the extent to which foreign firms feature superior performance with this taken as one indication of the likelihood of spillover effects. Some care is required here because much of the literature works on the basis of spillover effects from the foreign to the domestic sector. In the earlier theoretical section of the review the potential for strategic asset seeking FDI was highlighted where there is the likelihood of spillovers from the domestic to the foreign-owned sector. However, there is also an issue that there may be spillovers from the foreign sector to other parts of the foreign sector in the host economy, although this is difficult to identify empirically.

Table 5.1: Outline framework of FDI effects

Review Category	Key elements/issues in the literature review
Contextual	Section 5
Theoretical	Briefly on extent to which different theoretical perspectives offer inference on nature, scale and scope of impacts from FDI
Superior foreign sector performance	Studies identifying superior performance of the foreign industry sector; studies revealing how productivity performance of the foreign sector translates to profitability; studies examining scale of foreign/domestic sector productivity gap
Typology of effects	Section 6
General productivity spillovers	Linking scale of foreign involvement with industry and national growth, role of FDI in technical change and progress and domestic sector productivity growth.
General competition effects	Review of literature on effects of FDI on industry and aggregate concentration, role in breaking down domestic monopolies, competition effects within the foreign-owned sector.
Trade effects	Impacts on national export and imports, more general balance of payments effects, intra-MNE trading behaviours, and transfer pricing issues
Buyer-supplier and value chain effects	Evidence for strength of backward and forward linkages, and issues of embeddedness. Indirect economic impacts on national supply chains. Demonstration effects to suppliers in terms of operational techniques and links to increased productivity; review of effects (externalities) in domestic (and foreign) firms that purchase from the foreign sector
	Section 7
Employment effects	Effects in terms of direct and indirect employment creation, and the employment contribution in different industries.
Labour market effects	Total employment creation directly and indirectly, and quality of employment creation (functional depth). Presence of wage spillovers from the foreign sector, including evidence of the earnings gap between the foreign and the domestic sector
Industrial relations effects	Foreign firms promoting novel IR practices, and extent to which demonstration of new practices spill-over to domestic firms and other institutions
HRM and operational management practice effects	Review of studies examining presence of different operational and HRM practices in the foreign-owned sector, and extent to which demonstration of these new practices spills-over to the extent firms in the economy

5.3.4 In the remainder of this section the potential for positive impacts is examined in the light of the theory of the multinational enterprise, and following this the evidence for the superior performance of the foreign-owned sector is reviewed.

5.3.5 Section 6 and Section 7 then focus on studies of impacts under the headings highlighted in the typology. We accept that these headings could be further subdivided, but there is a need to make the review material manageable and draw out key conclusions for the Welsh economy from the synthesis. We also focus on impact studies and research undertaken in developed nations rather than developing states, as the former are also more relevant for Welsh policy makers. Finally, it is stressed that this review is not exhaustive in terms of impact categories or literature. The section treats with FDI impacts which are

most pertinent to economic and social challenges facing the contemporary Welsh economy.

- 5.3.6 In reviewing the evidence the report, where possible, also shows the types of questions that prior impact studies raise for Wales, and draws conclusions on where further research might be undertaken in Wales to improve the evidence base of regional FDI impacts, this linking through to potential interventions.

5.4 Theoretical perspectives on expected FDI impacts

- 5.4.1 The theory of the multinational can provide insights that help to frame the questions that could be asked when considering the expected impacts of FDI. The boxed section below highlights a series of questions that policymakers might ask when considering how far inward investment from overseas might positively impact the domestic economy. In what follows these questions are considered in the context of the theory of the MNE.

Box 5.1 FDI Impact Drivers

- What was the motivation for the investment?
- What is the nature of the industry in the host nation in which the MNE invests (issues of price cost margins, and concentration levels)?
- What is nature of the ownership advantages held by the MNE?
- What is the extent of the 'gap' between the foreign firms and their domestic counterparts?
- How does the foreign firm choose to enter the host state?
- What type of activity does the foreign firm bring to the host state (issues for skills needs and training)?
- Which markets will the foreign subsidiary serve?
- What types of policies does the MNE execute in terms of local sourcing of goods and services?
- How strong is the supply side of the domestic economy in meeting the labour and product needs of the MNE?
- What types of policies are executed by the home states in relation to MNEs (i.e. tax, and profit, and exchange regulations)?

- 5.4.2 At the outset it is expected that the underlying motivation for an overseas investment will be associated with the level and types of impacts on the host economy. In the Stage 1 theoretical review it was stressed that FDI motivations include market seeking, efficiency seeking, resource seeking and strategic asset seeking. Then an MNE that engages in FDI primarily to expand its market base, might have very different domestic (and home nation) economic impacts from a firm that comes to an area seeking complementary assets and specific areas of technological expertise. In the former case, for example, there might

be strong impacts as firms challenge local competitors and reduce domestic concentration levels.

- 5.4.3 Motta (1994) showed that FDI can be a particularly aggressive phenomena where investment is undertaken simply to defeat competition from host country firms, and then extending the monopoly of the overseas firm. Moreover, an MNE 'obliged' to invest overseas to overcome tariff barriers and protect a foreign market may only undertake certain production operations in a host state, and with the investment (and impacts) being of a more transient nature. At another level might be the market seeking or technology sourcing firm anxious to put down long term roots in a host state and develop a full range of headquarter functions including research, development and engineering. The upshot from the above discussion is that the range and scale of FDI impacts is strongly linked to investment motivations and determinants.
- 5.4.4 Having noted the complex set of motivations leading to the FDI decision, an understanding of the spillover effects associated with the investment rests in part on the assumption that foreign manufacturing and services firms have advantages in terms of tangible and intangible asset possession over domestic counterparts (following market power approaches to the theory of MNE). MNEs are more commonly found in sectors where there are high R&D propensities (Buckley and Casson, 1976), where there are larger shares of professional and technical employees in the workforce, and where there are products and services that are technologically complex. Here the incentive to exploit these advantages through FDI is very strong because of problems of market failure, and because of the low costs of transferring advantages to foreign subsidiaries. The theory then reveals that there is likely to be a performance gap.
- 5.4.5 Having a set of ownership advantages enables the foreign firm to compete overseas and bear the additional costs of doing so. For example, in the earlier review it was shown that the technology assets possessed by US and Japanese firms often formed a key element of their decisions to invest overseas (see e.g. Pugel *et al.*, 1996), and there is also evidence that firms go overseas to maximise rents on more intangible assets (Grubaugh 1987; see also Horst 1972).
- 5.4.6 Then it is the nature of the ownership advantages held by MNEs that is also one expected determinant of the impacts resulting from the investment. Moreover, it is also likely that the ownership advantages are associated with the different motivations for going overseas (i.e. market seeking, strategic asset seeking etc.).
- 5.4.7 The nature of the ownership advantages held by the foreign firm will also impact the type of employment that is created, the types of goods and services that will be required in the host economy, and the types of knowledge that might be shared with the wider value chain (both backwards and forwards). In particular

it is expected that the nature of ownership advantages will have a strong influence on the labour market impacts of FDI, the training such firms undertake, and the potential for skill upgrading, and productivity improvements in the host economy. Part of the scope of ownership advantage is that MNEs through their global reach have know-how about best practice HRM and operational methods in different cultural conditions. This together with the stronger bargaining power in the host economy can enable subsidiaries to gain greater flexibility in negotiating work practices, new employment conditions and institutional arrangements, each of which can have a wider set of impacts on uni-national firms, and the domestic economy as a whole.

- 5.4.8 Notwithstanding the set of ownership advantages held by the MNE impacts will also be determined by the nature of the supply side of the host. Dunning (1993), for example, shows that in developing states, the role of MNEs in influencing labour skills and productivity largely depends on the extant competitive advantages of the countries in question, and on how indigenous firms and governments react to the foreign presence. Then in sectors that are innovative and where rivalry is strong, the MNE presence may further improve the quality of human capital.
- 5.4.9 More general impacts of FDI on domestic industry are also expected to be influenced by the extent of the technology gap between the foreign and domestic firms. Wang and Blomstrom (1992), for example, demonstrate that spillover potential is positively associated with the nature of the technology gap between the foreign and domestic sector. Wakelin *et al.* (1999) reveal the extent to which the skills mix of the work-force, competitiveness in the market place, and the magnitude of the productivity gap might influence the propensity of domestic firms to benefit from foreign investment induced spillovers. They showed in the UK case that the impact of FDI on productivity increased as competition and industry skill levels grew, but that larger technology gaps adversely affected productivity spillovers.
- 5.4.10 However some care is needed with the above. For example, part of the analytical framework presented above rests on the assumption that a performance gap with the domestic sector (however defined) is due to 'foreignness'. It is likely that part of the performance gap with a domestic sector is simply down to the fact that firms are multinational. Then were one to examine the performance of inward investors with domestic economy multinationals performance gaps might not be so great. Consequently in empirical studies it is important to know what one is comparing when examining performance gaps. The conclusion is that it may not actually be ownership advantages and foreignness that result in better comparative productivity.
- 5.4.11 The central place given to ownership advantages can be questioned in other ways. Taking a slightly different approach (an Industrial Organisation

framework) then firms go overseas to exploit an ownership advantage but this is not taken as a given. In this way a firm's advantages might be a product of oligopolistic rivalry. This links to the issue that performance gaps between domestic and foreign firms might have something to do with more strategic behaviour. Then foreign multinationals, for example, might work to create excess industry capacity to deter domestic entry; institute takeovers/mergers to reduce industry capacity; or simply collude with one another. Critical here is that the results of the process might be bad for domestic economy efficiency, and moreover, that it is strategic behaviour of foreign firms that results in performance gaps with the domestic sector rather than ownership advantages *per se*.

- 5.4.12 Finally the concept of ownership or firm specific advantages would not explain technology sourcing FDI undertaken by MNEs that are technically backward in comparison to domestic enterprises. Fosfuri and Motta (1999) provide the argument for the technology acquisition motive for FDI (see also Love, 2003). Here technically deficient MNEs gain location-specific knowledge through FDI on which they develop subsequent ownership advantages.
- 5.4.13 This discussion does not suggest that firm specific advantages are not important, but rather that they might not be a panacea for explaining gaps between foreign and domestic firms.
- 5.4.14 The entry mode taken by the foreign firm would also be expected to influence the domestic impacts of FDI. Indeed some developing states actually specify entry mode (i.e. perhaps insisting on a local partner) so as to attempt to maximise local effects and knowledge spillovers (see for example, United Arab Emirates).
- 5.4.15 For the MNE itself the strategic entry options comprise wholly owned subsidiary (greenfield or through merger/takeover), joint venture, licensing, technology agreements, and strategic alliances.
- 5.4.16 Joint ventures are often chosen by smaller firms who are uncertain about domestic market conditions. Here there is then the possibility of benefiting from the expertise of a local partner. However, with joint ventures and licensing there is the problem that the MNE may not be able to maximise rent on its various ownership advantages, and that too much of its knowledge may leak away to domestic interests.
- 5.4.17 The wholly owned subsidiary provides the MNE with greater control over proprietary knowledge. Licensing, technology agreements and non-equity strategic alliances are not strictly defined FDI. Then the main issue here is that impacts vary across greenfield, brownfield, and joint venture investments. In the brownfield case it is likely that the takeover of domestic assets by the MNE may not lead to the same types of labour market and value chain impacts that

one might obtain with a genuinely greenfield investment in the shorter term. Moreover, with the takeover of domestic assets there may be more difficulties instituting new methods and processes.

5.4.18 Finally, here the scale and type of labour market, value chain, and competitive effects will be linked to the policy and legal environment of the host state. For example, the relatively less regulated nature of the labour market in the UK has given some multinationals greater scope to develop their own policies with regard to local workforces, and institutional relationships.

5.5 Expected impacts drivers in the Welsh case?

5.5.1 In the impact sections that follow in Section 6 of the report, Welsh evidence on FDI impacts will be considered where available. However, there is some value in reflecting on the expected impact drivers in the Wales case, in line with the questions in Box 5.1.

5.5.2 In the main FDI that has entered Wales in the period since 1945 has been market seeking in orientation, and with the largest inward investors involved in markets characterised by oligopoly at a global level (Davies and Thomas, 1976). It is more difficult to generalise about the precise nature of ownership advantages, but in the US case, historically, this has reflected expertise in the production and marketing of income elastic consumer goods, together with technological expertise in the production of intermediate manufactured goods. Then US (and Asian FDI) in the Welsh economy has tended to be in industries which are relatively R&D intensive (although not R&D intensive at the host region level).

5.5.3 Again in general there is some expectation that MNE investment in Wales does enjoy a productivity advantage over domestic firms (see review and statistics presented in Section 4 of this report), but with much of this expected to be due to scale and size effects, and in some cases with it very difficult to find comparison domestic firms on which to base an analysis (Munday and Peel, 1996). Much of the FDI in Wales is characterised by wholly owned subsidiaries, or instances where foreign firms have taken over domestic (and other foreign) firms. Indeed, in some instances increases in FDI in Wales have 'registered' little locally because one domestic subsidiary has changed ownership as a result of a foreign takeover of the domestic parent. Genuine joint ventures have been limited in part because incoming multinationals from the US and Europe have come into a familiar operating and institutional environment. Asian FDI has featured limited joint venture activity but with indifferent success (for example, GEC-Hitachi in the early 1980s, see Morris *et al.*, 1993).

5.5.4 In terms of activity, the majority of studies in Wales (see below) show that foreign manufacturing in the region features a production-only emphasis with

limited higher order functionality. Services industry inward investment has been poorly researched in Wales, but with a strong expectation that in functional and activity structure it follows its domestic counterpart with few high value added activities.

- 5.5.5 Markets served by the manufacturing sector are largely in the UK and Western Europe (see *Welsh Economic Review* and HMCE, various). In terms of local sourcing of goods and services foreign manufacturing and services firms purchase what they can in Wales, but with supply side limits on the goods and services available in a small region, and with some firms subject to head office controls on supply chains.
- 5.5.6 The above reveals the broad factors that will determine the regional (and UK) impacts associated with FDI in Wales. This is not to say that there will not be a set of positive economic and social effects, but rather these will be determined by the core characteristics of the contemporary FDI stock.

5.6 Superior foreign sector performance?

- 5.6.1 Before moving on to examine categories of FDI impact we consider evidence relating to the performance 'gap' between the foreign and domestic sector, this being one subtext for the presence of several types of spillover.
- 5.6.2 In the UK a number of studies have revealed that as foreign penetration of an industry increases then the productivity of that industry improves. However, this type of industry effect may not be evidence of the domestic sector improving with respect to the FDI stimulus, but merely a 'batting average' effect as the assumed more highly productive foreign firms come to make up a more significant element of the industry total. Furthermore, from a domestic economy viewpoint the distinction between domestic and foreign may be less than helpful. For the UK economy the fact that new FDI may work to improve productivity levels in parts of the extant foreign sector are just as important for domestic competitiveness.
- 5.6.3 Ideally in approaching the issue of performance gaps one might match the foreign subsidiary with a domestic subsidiary and explore differences in key productivity measures. This is made difficult at a regional (and national) level with problems in finding a domestic subsidiary to match with a foreign subsidiary. Indeed, this leads to an equally important question. Once the foreign-owned sample is removed from the population what precisely remains. Inevitably it will be a combination of domestic MNEs, domestic firms which export, and then just national firms. This issue is interesting because much of the empirical literature suggests that if one compares inward investing foreign firm subsidiaries with the subsidiaries of domestic MNEs then performance

gaps are not so prominent, adding to the conclusion that advantages are not based of foreignness but 'multinationality' or structure.

- 5.6.4 Another issue is the level at which any comparison is undertaken (i.e. at the industry, firm, establishment or plant level), with studies at different levels potentially giving very different conclusions (see Bellak, 2004 for a review).
- 5.6.5 Even when a match is possible in terms of industry group, it is necessary to recognise that some of the advantage of the foreign firm may simply be related to other things. Luo and Chen (1995) find that differences in the performance of the foreign sector may result from sectoral bias and/or location advantages. Even across UK regions, different locations may influence the productivity of domestic and foreign plants. In this way identifying the productivity premium associated with foreignness is far from straightforward, such that the results from studies claiming to examine comparative performance should be treated with care.
- 5.6.6 One key UK source of data on foreign/domestic sector comparative performance is the *Census of Production* (now *Annual Business Inquiry*). The data provided allows differences in productivity by industry and by national source of investment to be investigated. This source tends to show that across the UK, it is US investment that features the highest level of productivity in comparison to the domestically owned sector (see Hill and Munday (1992), Munday and Peel, 1997). However, the actual nationality of investment is, as noted above, hindered by issues of sector and scale, with the US sample in the ABI including a series of large capital intensive investments.
- 5.6.7 Notwithstanding overall Census of Production data has been used explore the comparative performance of the Japanese MNE sector in the UK i.e. to both support and refute the 'warehouse' thesis of Japanese manufacturing investment - that is, the hypothesis that Japanese manufacturing in the UK is characterised by routine production operations as evidenced by comparatively low earnings and low value-added per employee (see Munday *et al.*, 1995; Williams *et al.*, 1992).
- 5.6.8 Evidence for a performance gap is often examined in the context of differences in earnings and labour productivity. The classic UK study was by Davies and Lyons (1991). They examined the productivity (gross value added per employee) of foreign owned and domestic firms using 1986 UK Census of Production data, and reported that, although the foreign owned manufacturing sector exhibited a 40% productivity advantage over its domestic counterpart, that only around half of this was attributable to ownership differences. The remainder was due to structural effects, with foreign firms being disproportionately distributed in industrial sectors with relatively high productivity.

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- 5.6.9 Other studies explore how the foreign productivity advantage directly influences comparative earnings. Driffield (1996) observes that in the UK case as a whole, foreign firms paid above industry average wages. In a similar vein, Conyon *et al* (1999) found a wage differential which was wholly attributable to productivity. The conclusion made here was that foreign firms compared to their domestic counterparts in an industry have a different pattern of factor demands.
- 5.6.10 In the US, Doms and Jensen (1998) reported that foreign affiliate plants were more productive and paid higher wages even when controls were adopted in the analysis to take account of industry, state (location), plant age and size.
- 5.6.11 However, studies do not all come to the same conclusions. For example in an early (though important) study of 256 single-plant firms located in the UK mechanical engineering sector in 1974, Solomon and Ingham (1977) examined the significance of plant location as a determinant of relative performance of foreign and domestic firms. The authors reported that when location and industrial classification were controlled for, it was (contrary to expectations) indigenous firms that exhibited significantly higher labour productivity and superior export performance. However, despite this, the empirical results indicated that there was no significant differences between the profitability (return on capital employed) of domestic and foreign owned firms.
- 5.6.12 As intimated above a series of studies have explored the performance of Japanese plants in the UK. One context for this work was investigating how far 'novel' production and operational methods being used by Japanese transplants really led to significant productivity differences. One line of research has investigated the financial characteristics and marketing performance of Japanese subsidiaries located in the UK. For example, using UK cross-sectional data, Doyle *et al.* (1992) examined the characteristics of matched samples of US, Japanese and indigenous subsidiaries in the consumer goods, industrial goods and financial services sectors. This research hinted at key performance drivers in the Japanese case. For example relative to managers in Japanese subsidiaries, the research revealed that managers of US and UK subsidiaries were more likely to be 'short termist' in outlook. However, the managers of Japanese subsidiaries rated market performance (market share) as being a significantly more important corporate objective than their UK and US counterparts. Doyle *et al.* also showed that the increased commitment of Japanese firms to long term performance objectives created greater support and confidence in employees within their subsidiaries.
- 5.6.13 Munday and Peel (1997) provided an analysis of the comparative performance of Japanese manufacturing subsidiaries in the UK focusing on matched samples of Japanese and domestic manufacturing subsidiaries drawn from the FAME CD-ROM accounts corporate database. The performance of these subsidiaries was examined with reference to variables relating to employment,

remuneration, profitability, labour and asset productivity, stock efficiency, liquidity, gearing and credit risk.

- 5.6.14 This analysis showed that compared to their matched domestic counterparts, Japanese subsidiaries generated a higher level of sales from a given employment base. Japanese subsidiaries were found to have smaller workforces than their domestic counterparts, and a lower total wage bill to sales ratio, despite actually paying their employees more. Contrary to expectations, Japanese subsidiaries held relatively high stocks, and also performed comparatively badly on a number of liquidity indicators. Japanese subsidiaries were also characterised by significantly higher measures of credit and financial risk. The return on capital employed in the Japanese sample averaged just –(minus)0.26% compared to 10.77% for domestic subsidiaries. Moreover, around 40% of Japanese subsidiaries were loss making.
- 5.6.15 The conclusion of Munday and Peel was that poor profitability performance reflected issues of transfer pricing policy as opposed to underlying productivity problems in the Japanese subsidiary case.
- 5.6.16 Munday and Peel (1998a) undertook further analysis of the performance of Japanese, US and domestic manufacturing firms in the UK electronics sector. The Japanese firms were found to be larger than both their US and domestic counterparts, but with earnings below those in comparison with US firms, but close to UK levels. They also found some evidence that the labour productivity in Japanese subsidiaries exceeded that in their US and UK-owned counterparts. However, on other key performance indicators Japanese subsidiaries fared less well; for example there was no evidence that Japanese or US subsidiaries generated a higher level of sales on a given asset base, and little difference on key measures of operational efficiency. The study also confirmed earlier findings on the very poor profitability of Japanese subsidiaries. Whereas the profitability performance of US firms was similar to their UK counterparts.
- 5.6.17 Munday and Peel (1998b) also completed analyses of the performance of foreign and domestic firms in Wales. They used a cross section corporate performance panel database to explore the performance of matched samples of foreign owned and indigenous manufacturing companies in Wales between 1989 and 1992. The results of this piece of research were used largely to highlight the relative stability of foreign manufacturing in Wales during a period of domestic recession. However, the study also reported on performance differences. For example, the research revealed that average employee pay was significantly higher in foreign owned firms than it was in domestic firms. In addition average labour productivity levels were higher in foreign owned firms (see Table 5.2 for selected results), and also grew faster over the period 1989-1992. However, firms in the domestic sample were found to exhibit significantly higher profitability measures.

5.6.18 Clearly there are a very large number of studies that speak to performance gaps between the foreign-owned and domestic sector, and other elements of the evidence are reviewed in Section 6. However, to conclude here it is perhaps useful to note the summary of Bellak (2004) who undertook an extensive review of studies examining various types of foreign/domestic firm performance gap. He came to two conclusions.

5.6.19 First, he argued that studies related to wage and skill gaps between the foreign-owned and domestically-owned sector suggest that factor demand of foreign-owned firms varies even within the same industry. However, he comes to the important conclusion that only a small part of this gap is down to foreignness, with size and factor intensities as important explanatory factors.

5.6.20 Second, in reviewing the evidence of productivity gaps (tightly linked to the above issue of wage and skill gaps) he argued that it is factors related to the multinationality of firms that are significant, with productivity gaps between domestic and foreign MNEs smaller than those between uni-national firms and MNEs.

5.7 Conclusions

5.7.1 This section of the review points strongly to foreign firms having a performance advantage over the domestic sector but with uncertainty as to the extent to which this is due to foreignness or a series of structural factors. In the Welsh case undertaking productivity comparisons between the foreign and domestic sector is hampered by the lack of domestic comparison companies.

Table 5.2 Performance and Efficiency Characteristics: Foreign vs Domestic Firms in Wales (selected results)

Variables	FOREIGN OWNED		DOMESTIC	
	Mean (st.dev.)	Median (n=)	Mean (st.dev.)	Median (n=)
Sales per employee	88090.8 (66517.9)	72726.2 (n=68)	59884.2 (30292.2)	52571.4 (n=85)
Return on capital employed	3.47 (16.67)	3.38 (n=77)	4.00 (13.33)	4.42 (n=92)

Source Munday and Peel, 1998b

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- 5.7.2 Given the conclusions on the importance of structure as well as ownership, one practical message here is that when marketing a UK region as a location, UK multinational subsidiaries may have similar sets of socio-economic impacts to those of foreign firms. In this context it is worth noting that currently International Business Wales treats investment from the rest of the UK as inward investment.
- 5.7.3 The report now turns to consider FDI impacts under the series of headings outlined at the beginning of Section 5.

6 Stage 2. Impacts of FDI 1: Productivity spillovers, competition, trade and value chain effects

6.1 Introduction

6.1.1 In what follows the evidence on FDI impacts are reviewed under the categorisation developed in Section 5. This section focuses on evidence on productivity spillovers, competition, trade and value chain effects.

6.2 General Productivity Spillovers

6.2.1 Productivity spillovers are said to occur when the entry or existing presence of an inward investor leads to productivity benefits amongst domestic/indigenous firms within the host economy. In their review article Blomstrom and Kokko (1998) note that there are three key channels through which spillovers may occur. The first of these relate to human capital factors and knowledge which may be transferred as key staff move from the multinational to domestic firms. The second channel relates to 'demonstration effects'. One illustration of such a spillover would be when a local firm learns superior production processes or technologies from an inward investor leading to productivity improvements (see for example, section 6.5). The third channel relates to competitive effects. The extra competition generated by the entry of the inward investor may stimulate domestic competitors to improve production processes, update technologies etc to become more productive. This competitive effect may, however, generate negative impacts for the domestic sector if demand is attracted away from them following the arrival of the multinational (market-stealing effect, see Driffield and Love, 2005). Specific competition impacts will be discussed separately in Section 6.3.

6.2.2 In addition to the potentially numerous channels through which the spillover impacts could occur, there are particular host economy and inward investor characteristics that may determine the scale and nature of any such spillovers. One important rationale for the study of spillovers is that they are often used as a justification for policy directed at attracting FDI.

6.2.3 Box 6.1 outlines some of the key questions addressed by the productivity spillovers literature.

Box 6.1 General productivity spillovers of FDI, Key Questions

- What are the channels through which spillovers occur?
- How can any spillovers be identified and/or measured?
- Are there differences in spillovers by nationality of firm?
- Are there differences in spillovers by sector?
- Does the scale and nature of spillover vary by FDI entry mode?
- Are there spillovers between foreign firms within the host economy as well as between foreign and domestic firms?
- What is the evidence for technology sourcing FDI?
- How does the motivation for FDI into the host economy influence the scale and nature of any spillover effects?
- Are spillovers limited to the immediate area of investment or can impacts be seen in adjacent sites, or those further away?

6.2.4 The academic literature on spillovers is diverse, and examines issues such as whether spillovers exist, and then the type of spillovers and the factors that may determine spillover impacts.

6.2.5 Table 6.1 contains a summary of selected papers which have tested for the existence of productivity spillovers from foreign to domestic industries. A number of these statistical papers have focused on intra-industry impacts, and test for the existence of spillovers using production function approaches. This general methodology involves the definition of a variable to measure foreign presence and then an assessment of whether, when controlling for other firm and industry characteristics, there is an influence on productivity. This general framework, when used at an aggregate industry level is able to identify whether or not spillovers exist, but is not able to say why they exist.

6.2.6 One early study of spillover impacts was Caves (1974) who tested for particular intra-industry benefits of FDI in the manufacturing sectors of Canada and Australia. Caves' study examined various impacts of FDI, including impacts on allocative efficiency, technical efficiency and technology transfer. In relation to the latter two impacts, Caves' study did not find evidence to support a relationship between foreign presence and relative productivity levels in Canada. However, in the case of Australia, productivity spillovers were found to have occurred. The author, however, noted that the study was limited by data quality, and also its "inability to demonstrate the dynamic mechanism that should connect the subsidiaries' market share to their relative levels of productivity and relative payments to factors of production".

Table 6.1: Productivity Spillovers: selected studies.

	Author(s)	Study area	Summary
1	Caves (1974)	Australia and Canada	Positive productivity spillovers found for Australia but not for Canada. However there were data quality issues.
2	Globerman (1979)	Canada	Cross section data for 1972. Study found significant positive labour productivity spillover impacts. Other variables included in study were capital intensity, labour quality and average hours worked.
3	Blomstrom and Persson (1983)	Mexico	Followed assumptions behind work of Caves and Globerman. This study included more variables and observations. Labour productivity in domestically owned plants was found to be associated with foreign presence in the same industry.
4	Barrell and Pain (1997)	Europe	Studies a range of home and host country impacts. For the UK between 1985 and 1995, around 30% of the growth in UK manufacturing productivity could be attributed to the impact of inward investment.
5	Liu <i>et al</i> (2000)	UK	Panel data for 48 UK 3-digit manufacturing industries for 1991-1995. Their results, using a 'Caves-type equation' on the full sample, show the very presence of FDI to have a positive impact on productivity in UK-owned firms.
6	Driffield (2001)	UK	Study found that FDI stimulates domestic sector productivity growth. The Author attributed this finding to the productivity advantage exhibited by the foreign firm rather than investment or output spillovers.
7	Chuang and Lin (1999)	Taiwan	Similar model adopted to those of studies 1-3 above, and the results are also consistent in finding that FDI spillovers exist and lead to increases in labour productivity within the industry.
8	Demelis and Louri (2002)	Greece	Study of over 4,000 manufacturing firms in 1997 (cross-section). Productivity in the host economy was found to be improved by the entry of foreign affiliates. The paper also investigated the varying impacts of fully and partially owned foreign affiliates.
9	Wei and Liu (2006)	China	Positive intra and inter-industry productivity spillovers from foreign presence to indigenous firms. However these impacts were found to be confined within regions. The authors commented that this may be due to regional protectionism within China. This study examined several variables to measure foreign presence which could theoretically capture different aspects of spillovers.
10	Haddad and Harrison (1993)	Morocco	Firm level panel data. Some evidence was found of negative spillovers – FDI in Morocco reduced productivity in domestic firms.
11	Blomstrom (1986)	Mexico	No significant effect of foreign presence on the rate of productivity growth of local firms.

6.2.7 A later study by Globerman (1979) repeated the analysis of intra-industry productivity spillovers for Canada. Globerman adopted the specification used by Caves in his study of Australian manufacturing industries. Globerman's study, for the larger sample of industries concluded that the evidence suggests that spillover benefits did exist. He found that labour productivity differences could be positively related to the amount of foreign ownership in an industry, as well as to other variables such as capital intensity, plant-scale economies, labour quality and average hours worked. A study by Blomstrom and Persson (1983) effectively used the reasoning behind the Caves and Globerman studies to test for the existence of productivity spillovers in the Mexican manufacturing industry. This model was improved by the addition of extra variables and observations and further found that the foreign presence variable impacted positively on relative levels of domestic industry productivity. Similarly Chuang and Lin (1999) reported positive spillovers for FDI in Taiwan. They found that a 1% increase in an industry's FDI ratio led to a 1.4 to 1.9% increase in domestic firms productivity.

6.2.8 Barrell and Pain's (1997) European analysis of FDI impacts explores the factors behind the continued growth of FDI and its wider consequences on home and host economies. As part of their UK analysis, FDI was found to have impacted on technical progress in the manufacturing sector. Barrell and Pain found that a 1% rise in the FDI stock was estimated to raise technical progress by 0.26% in the UK, however no such significant impacts were found outside of manufacturing sectors. Further analysis by the authors found that the growth of FDI between 1985 and 1995 increased manufacturing output by 1.2% per annum, hence they attribute around 30% of the growth in UK manufacturing productivity to the impact of inward investment. A later UK study by Liu *et al* (2000) similarly found positive spillover impacts of FDI in the UK.

6.2.9 Driffield's (2001) UK study of the impact of UK inward investment on domestic productivity found that FDI stimulated domestic sector productivity growth. However, the author noted the importance of examining the nature of the investment, rather than inward investment *per se* as determinants of productivity growth. The results of this analysis showed there to be no evidence of output, R&D or investment spillovers, but that where the foreign-owned sector had a productivity advantage over domestic firms there was domestic sector 'catching up' taking place. Driffield therefore concluded that one main benefit to the UK economy arising from FDI was that the increased competition stimulated productivity growth amongst domestic firms. This issue is returned to in the specific section on competition effects.

6.2.10 A study by Demelis and Louri (2002) for Greece in 1997 concurred with others in Table 6.1 that productivity in domestic firms was positively influenced by the degree of foreign ownership in the industry. However this paper is interesting in that it explores the issue of the degree of foreign ownership and how this may

impact on productivity spillovers. Demelis and Louri (2002) found that it was the minority foreign holdings (partially foreign-owned affiliates) that were most important for domestic firms, particularly those lower productivity firms. Blomstrom and Sjöholm (1999) had, however, previously found that degree of foreign ownership had no impact on levels of productivity or the extent of spillovers in their study of Indonesia. Demelis and Louri (2002) comment that the results may be indicative of different levels of host economy development. However these issues do have important policy implications. Whilst fully or majority owned affiliates are estimated to be most efficient, causing an overall shift in the general efficiency level of the host economy, joint ventures with foreign firms holding minority share would be of most benefit to local firms in terms of technology transfer and spillovers. The authors do stress that such suggestions are appropriate for small, open and developed host economies and depend on the capabilities and capacity of local partners.

- 6.2.11 Wei and Liu (2006) explored both intra and inter-industry productivity spillovers in China, and found that FDI resulted in positive spillover benefits. The source of FDI was found to be important in determining the extent of benefit (the study differentiated between OECD firms and those overseas Chinese investors from Hong Kong, Macao and Taiwan). In addition this study found the spillover benefits to be spatially constrained, however this finding may not be generalisable as the authors commented this may be the result of regional political forces. This paper also examined different aspects of spillovers using different measures of foreign presence. The issue of how to measure foreign presence within spillover studies is an important one, and one which was examined by Gorg and Strobl (2001) in their meta-analysis (see later).
- 6.2.12 The first nine entries in Table 6.1 suggest statistically significant positive productivity spillovers to domestic firms as a consequence of FDI. There are, however, studies which have found insignificant or negative productivity impacts. One of the simplest explanations for this is that under increased competitive pressure, domestic firms lose demand to the inward investor, hence there may be a dip in productivity, at least in the short run.
- 6.2.13 A study by Haddad and Harrison (1993) analysed productivity spillovers in Morocco. This paper used firm level data over a number of years (panel data) and found no evidence of productivity growth in domestic firms as a result of foreign presence. The authors also replicated the approaches used previously by Caves (1974) and Globerman (1979) to identify whether their findings differed as a result of specification, data or country differences. Using the Caves approach, FDI was found to have an insignificant impact on worker value-added, whilst when following the Globerman specification the results for Morocco showed that foreign presence had a statistically significant and negative impact on productivity.

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- 6.2.14 In other studies the results have been mixed. For example, Blomstrom's (1986) study of the Mexican manufacturing industry reported positive productivity impacts only in parts of the sector. These positive impacts were attained in the 'modern' sector, which was considered to have the capability to engage in best practice technology, whereas in the 'traditional' sector, characterised by simpler technologies, and lower levels of efficiency, no productivity impacts were found. Furthermore Blomstrom's study found no evidence of FDI speeding up technology transfer to Mexico, but instead suggests that it is the competitive pressure which is of importance. Similarly, the Girma *et al* (2001) study of intra-industry impacts found that some firms experienced positive impacts, and others negative, and that in aggregate the effects cancelled each other out. Whilst Chung *et al* (2003) also considered the main cause of productivity improvements in the American automotive component industry, at least in the initial stage of FDI in the 1980s, to be the increased competitive pressure.
- 6.2.15 Aitken and Harrison (1999) identified two effects of FDI on domestic firms. For smaller plants they found that increases in foreign equity participation were positively correlated with productivity for these recipient plants. However for wholly domestic owned plants in the same industry they found that increasing foreign ownership negatively affected productivity. The authors concluded that the net effect of foreign ownership on the economy was small. They found no evidence for the existence of technology spillovers and suggested that benefits of FDI are mainly internalised within joint ventures.
- 6.2.16 The studies included in Table 6.1 have focused on intra-industry productivity impacts. There have also been studies which have examined the possible inter-industry and spatial productivity effects of FDI. For example, Sjöholm (1999) found there to be positive productivity impacts amongst firms in other industries only if they were located in close proximity to the inward investors. This study also found positive intra-industry productivity impacts, but that this impact does not increase with proximity. The issue of intra-industry and spatial impacts is considered again later.
- 6.2.17 As indicated by Table 6.1, there have been a number of similar studies of productivity spillovers in the recent past. Gorg and Strobl (2001) used such studies as a basis for a meta-analysis on this topic. Meta-analysis can be used to explain and summarise variations in the results of a number of similar studies on one research topic. Their findings suggested that research design can in some cases affect results. They found that cross-sectional studies reported a greater foreign presence effect on productivity than panel data, as cross-section studies will not be accounting for other time and sector specific effects. In addition, the definition of the 'foreign presence' variable was a significant factor effecting results, and they suggest that various measures should be used before drawing conclusions on any spillover impacts. Finally Gorg and Strobl suggested the possibility of publication bias, in that studies

reporting spillovers are more likely to be published if they find significant (positive or negative) impacts. Hence the literature may not be fully representative of what has been researched, as those studies reporting insignificant effects are less likely to be reported in the academic literature.

- 6.2.18 Discussions thus far have focussed on the possibility that FDI by its very presence results in productivity impacts for domestic firms. However this is only one part of the spillover literature, which extends to consider various determinants of spillover impacts.
- 6.2.19 A review paper by Blomstrom *et al* (2000) concluded that the key determinants of host economy spillover benefits are the competitiveness of host country markets and the technical capability of domestic firms. Similarly other researches (e.g. Liu *et al*, 2000) have identified the crucial determinant of spillovers to be the ability of the host economy to absorb best practice techniques, relating to issues of technology gaps between foreign and domestic firms. Blomstrom *et al* further note that these determinants are potentially influenced by host country policy. Using a panel data set for the UK manufacturing sector Liu *et al* (2000, see Table 6.1) concluded that the productivity in UK owned firms was determined by their capital intensity, learning efforts, technological capabilities, the presence of FDI and the existing levels of technical competence relative to that in foreign firms. In a sub-sample analysis of the data the technological characteristics of the firms were investigated. Their results were consistent with the view that spillovers were more important in those industries where the technology gap was small. Indeed a simultaneous equation model used in this study showed that productivity in foreign and domestically owned manufacturers is “jointly determined in a continuing interaction between foreign and local firms. Spillovers occur in both directions”.
- 6.2.20 These findings are consistent with those of Ford *et al* (2008). This paper examined economic growth rather than productivity spillovers, however the findings are relevant to this debate. Ford *et al* found that the economic growth impacts of FDI varied by source economy. This study of the US states between 1977 and 1997 found Japanese FDI to be most beneficial to state growth, and Swiss FDI least beneficial (the authors note that the study does not examine industry impacts). The conclusions from this work suggest that technology is transferred most easily when there is a better match between the host and source country’s economies (as measured by capital-labour ratios).
- 6.2.21 Gorg and Strobl (2005) explored whether productivity spillovers were linked to issues of worker mobility. Their analysis used data on firm-level productivity and related this to whether the owners of the firms had previously worked for a multinational enterprise. The results suggested that immediate prior experience of working in a MNE had a positive effect on productivity compared with other firms.

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- 6.2.22 Further avenues of research on productivity spillovers explore the possibilities of impacts within the foreign sector, and that foreign firms may derive productivity benefits from domestic firms. These issues were explored for the UK by Driffield and Love (2005). They used data for the period 1984 to 1997 for 31 manufacturing industries which included information on country of ownership. Their results suggested that the foreign-owned manufacturing sector derived substantial productivity spillovers from UK-owned firms within R&D intensive sectors. This result therefore provided some evidence of 'technology sourcing' motivations for FDI in the UK. Analysis of productivity spillovers within the foreign-owned sector found that within knowledge-intensive industries, productivity benefits were more than offset by 'market-stealing' (competitive) effects.
- 6.2.23 The issue of investing firm motivation for FDI was also explored by Chung (2001). Chung examined changes in productivity resulting from FDI into US manufacturing industries from 1987-1991. This study attempted to distinguish the differential impacts associated with heterogeneous firm motives. The host industries initial level of competition is analysed to help distinguish between those industries where firms are likely to be exploiting existing skills versus sourcing new skills (technology sourcing). The results of this study show that productivity increases in less competitive industries but 'stagnates' in more competitive industries. Chung suggests that these results are consistent with "positive technology transfer occurring in less competitive industries where firms enter to exploit existing skills, and are consistent with less productive foreign firms entering more competitive industries to learn best practice". As noted by Chung, FDI has a complex influence on the host economy. Rather than simply expecting a technology transfer, there are at least three possible outcomes '(i) foreign firms enter, technology transfer is available, but incumbents are unable to absorb the new capabilities; (ii) foreign firms enter, technology transfer occurs and overall productivity rises; and (iii) foreign firms enter sourcing new capabilities, these new entrants are relatively less productive, and overall productivity stagnates.' p. 226
- 6.2.24 A UK analysis of FDI motivation and resulting productivity impacts was provided by Driffield and Love (2007). Their study used panel data for the period 1987-1997, and found that the UK economy only gained substantially from inward FDI motivated by strong technology-based ownership advantage. Table 6.2, which is reproduced from this paper summarises the key ideas on FDI motives and host economy impacts.

Table 6.2 Anticipated and estimated effects of inward FDI on domestic productivity

	FDI Motivation	Anticipated spillover effect	Rational	Estimated spillover effect
Type 1	Technology sourcing/location advantage	0 / -	Technology laggard; may compete on lower labour costs	-
Type 2	Technology sourcing	0	Technology laggard; nothing to offer host economy	0
Type 3	Efficiency seeking	+	Superior technology; may also compete on lower labour costs.	0 / +
Type 4	Ownership advantage	++	Superior technology as a basis for technology spillovers	++

Source: Driffield and Love (2007)

6.2.25 A final issue considered here is the spatial dimension of spillover effects. There are a number of channels through which spillovers can occur to domestic firms (demonstration and imitation effects, buyer-supplier partnerships and trade, labour movements, and competition). There is a suggestion that selected channels have a spatial dimension and with technical diffusion channels stronger at the regional level, and with effects decreasing through space (Aitken and Harrison, 1999). For example, imitation/demonstration effects are likely to be greater in the immediate vicinity of investing firms, and labour mobility effects are also likely to be more local as employees seek new opportunities in the immediate region. Moreover, economic geography perspectives also demonstrate that knowledge externalities are more effectively translated across shorter distances, and regional policy interventions may also encourage transfers over shorter distances.

6.2.26 Evidence relating to the spatial impacts of spillovers is still fairly limited. One key problem here is that officially defined regional boundaries may be less than useful as a baseline in examining the spatial spread of spillover impacts. Studies that have examined regional effects in terms of horizontal spillovers include Aitken and Harrison (1999), Sjöholm (1999), Driffield and Munday (2001) and Girma and Wakelin (2001). Studies here show mixed results in terms of a limited spatial spread of spillover impacts. On spillovers in vertical terms there are much fewer studies. In the UK, Driffield *et al* (2004) demonstrate that productivity spillovers may occur from an industry in one region to vertically linked industries in other regions (see also 6.5.41).

6.2.27 Box 6.2 summarises some of the key findings from the literature reviewed in Section 6.2 and outlines some of the issues for Wales resulting from the analyses.

Box 6.2 General productivity spillovers of FDI, Key findings and issues for Wales.**Key findings**

- Many studies have identified positive spillovers from FDI to the domestic sector in terms of productivity, but others have found mixed results.
- Results have often been sensitive to methodology used and how key variables, such as the level of foreign presence, are measured.
- Spillovers may occur through worker mobility – firms whose owners previously worked for a multinational were more productive than other domestic firms.
- Spillovers may also occur for several reasons, including buyer-supplier linkages, technology licensing or sub-contracting arrangements.
- A crucial determinant of spillover benefits is the ability of the host economy to absorb best practice techniques (issues of technology gaps).
- Spillovers may be difficult to identify if foreign firms target more productive industries in the host economy.
- Foreign firms in the UK manufacturing sector have been found to derive positive spillovers from domestic industry, but these tend only to occur in relatively R&D intensive sectors, and where technology sourcing is a motivation for FDI.

Issues for Wales

- Given Wales' long history of FDI and the scale and scope of FDI, there is the potential for spillover benefits to the Welsh economy.
- There is limited evidence to date (other than anecdotal and case-based) which empirically examines the case of general productivity spillovers in Wales.
- There may be scope for policy intervention to assist lower-tech domestic firms to increase their learning ability in order to potentially benefit from FDI spillovers.
- Existing or new policy could also consider spillover potential. For example, promoting supplier linkages may help to generate spillovers.

6.3 General competition effects

6.3.1 Much of the research undertaken into the general competition effects of FDI has been motivated by attempts to understand the channels through which spillovers are generated in domestic sectors. These channels were outlined earlier in Section 6.2. However, one of these refers to the stimulus to competition resulting from the foreign entry which may result in productivity improvements amongst domestic firms. Another could be the impact of removing worst performers from the market.

6.3.2 The increased competition in this case might result in a more efficient allocation of resources across industries which will become visible in the form of productivity improvements. However there is also the possibility of negative outcomes if foreign multinationals divert demand from indigenous firms.

Competition may reduce the scale of operation amongst domestic firms, increasing their average costs and then lowering productivity. Entry by the foreign industry may then affect overall concentration ratios, and could result in positive or negative outcomes for domestic firms.

6.3.3 The data section has earlier commented on the significance of FDI to the UK and regional economy, and that the foreign-share of output and employment varies by industry. There are some industries where the foreign sector dominates, particularly in terms of output (due to generally higher productivity levels), and as a consequence there is scope for competitive effects not only between foreign and domestic firms, but also within the foreign-owned sector. In addition, there are potentially a series of other important determinants of general competition effects on host economies.

6.3.4 Box 6.3 sets out some of the key questions arising from the review.

Box 6.3 General competition effects: Key questions in the review

- Do domestic firms become more efficient and competitive in response to FDI entry in their industry?
- Are there negative competitive effects if foreign firms crowd-out domestic firms?
- Does FDI foster evolutionary processes in the domestic firm population e.g. promoting survival of the fittest effects?
- What are the competitive effects within the foreign sector of the host economy?
- Do competitive effects vary by nationality and sector/activity?
- How does the motivation for FDI into the host economy influence the nature of any competition effects?
- To what extent do foreign-owned monopolies replace domestic monopolies?

6.3.5 One conclusion from Driffield's (2001) UK study was that domestic firms gained in terms of productivity as a result of the increased competition generated by foreign firm entry. The review of productivity spillovers (section 6.2) also suggested that one potential explanation why insignificant or negative spillovers were found in empirical studies may be that domestic firms have lost demand to the inward investor, and may hence experience a dip in productivity. The idea of competition effects between foreign and domestic sectors was also investigated by Driffield and Munday (1998). This paper specifically explored the possibility that FDI in UK manufacturing resulted in a 'profit squeeze' amongst the domestic sector. This research was partly predicated on some of the ideas suggested by Geroski (1991, 1995) in relation to the determinants of firm entry. Geroski's (1995) review suggests that industry entry will be correlated with high profits. However in terms of his stylised empirical results, Geroski noted that "entry seems to be slow to react to high profits". This result could be explained by a number of factors. It could be a consequence of mis-measuring expected post entry profits, or it may be because entry rates show much more within industry variation than profits. Another stylised result was

that “entry rates are hard to explain using conventional measures of profitability and entry barriers”.

6.3.6 Entry for FDI firms, who are assumed to possess ownership and other advantages over the indigenous competition may then be expected to impact negatively on local firm profitability. The main finding of the research by Driffield and Munday (1998) was that a FDI had a significant and negative impact on domestic profitability. A 10% increase in foreign manufacturing employment was associated with a 6% fall in domestic sector profits. The authors conclude that this result may reflect increasing industry efficiency (a positive spillover), or it may indicate that local monopolies are merely being replaced with foreign-owned monopolies, with no impacts on industry concentration ratios.

6.3.7 In relation to competitive effects within the foreign sector, Driffield and Love (2005) find evidence of substantial ‘market stealing’ within this sector, which offsets any potential productivity spillovers. In addition, this paper tested for country specific effects using data for nine major investing countries. The results suggest that there were variations in impact between countries and between high and low R&D industries. In particular negative competitive effects dominated any productivity spillover gains in less R&D intensive industries. This impact was found to be particularly noticeable in relation to Japanese-owned affiliates. Indeed European subsidiaries operating in the UK were found to ‘bear the brunt of Japanese knowledge-intensive competition’. In terms of lower level R&D, competition from the Japanese-owned sector was directed at both European and US subsidiaries.

6.3.8 A paper by De Backer and Sleuwaegen (2003) empirically assessed the role of global competition on domestic firm formation. They linked domestic entry and exit to import competition and FDI at the industry level in Belgium during 1990-1995. Their hypothesis was that domestic entry is negatively affected, and domestic exit is positively affected by increasing import competition and inflows of FDI. This study is interesting in that it analyses crowding out effects within an open industrialised economy, whereas much of the previous work had focussed on the implications for developing economies. This research concluded that both import competition and FDI crowd out domestic firms in both product and labour markets – whilst in line with their overall hypothesis, inflows of FDI were found to decrease domestic entry and increase exit. Their research also investigated the possibility of more positive impacts of FDI and concluded that in the longer term, linkages, demonstration and networking impacts by FDI on domestic firms can moderate or even reverse the crowding out effects.

6.3.9 Box 6.4 summarises the key findings from this review, and issues for Wales. One important note in relation to general competition effects is the spatial scale of analysis. Some competitive effects may be localised, however there are issues around whether Wales is an appropriate spatial scale within which to identify such effects. This is not to say impacts are unimportant but rather that they

may be best understood through qualitative research methods following case-study approaches.

Box 6.4 General competition effects: Key findings and issues for Wales

Key findings

- Foreign manufacturing investment has been found to have a negative effect on domestic profitability in the UK case.
- Any crowding-out impacts on the domestic sector may be moderated or reversed in the longer-term as a result of more positive FDI impacts on domestic firms as a result of learning, linkages etc.
- Competition effects have been found within the foreign-owned manufacturing sector in the UK. Most particularly European owned firms have been found to have lost markets to Japanese owned firms.
- Competitive effects have been found to vary by the level of knowledge intensity of activities. In less R&D intensive industries, competitive effects were found to have outweighed positive spillovers.

Issues for Wales

- Limited research to date on competitive issues in relation to Wales
- How far is Wales an appropriate scale for the analysis of competitive effects.
- There may be some scope for limited case studies. Examples could include cases where foreign owned firms have displaced domestic activities, or where foreign owned companies have enhanced the competitiveness of a local industry.

6.4 Trade Effects

6.4.1 The aim of this section is to outline some of the research on the general trade impacts of FDI. This trade literature is extensive, hence this section will be selective in reviewing and commenting on findings of relevance to Wales.

6.4.2 A review of the key ideas and some empirical research can be found in Dunning (1993). Dunning provides a useful background and allows some of the important research questions to be identified. These questions are summarised in Box 6.5 .

Box 6.5 General trade effects of FDI: Key questions in the review

- What is the contribution of FDI to exports?
- Do foreign MNEs have different importing behaviour compared to domestic firms?
- Does FDI displace trade (import enhancing or substituting)?
- How important are intra-MNE trade flows?
- Do MNEs, through their behaviour, have an impact on exchange rates, and what are the expected overall balance of payments impacts (positive or negative)?
- What is the impact of transfer pricing policies?

6.4.3 MNEs are generally found to be more trade-orientated (both relatively export and import intensive) than domestic firms. This can be partly explained by their tendency to be located in trade-intensive sectors, and also partly because MNEs tend to be more trade intensive than uninational or domestic firms. When comparing MNEs to indigenous firms, it is then important to account for industry and firm-specific characteristics. Studies have also found that trading patterns may vary by country. In addition, a considerable percentage of cross-border trade is within the same firm, with some evidence that levels of intra-firm trade vary by sector and by nationality (Dunning 1993). These levels of intra-firm trade are likely to be highly significant. There is little recent research on this. During the 1980s it was reported that 29% of UK manufacturing exports, and 51% of imports were between UK MNEs and their foreign affiliates (British Business, 1985, quoted in Dunning 1993).

6.4.4 The issue of intra-firm trade is important as there are implications for host economies, one example being that of transfer pricing of products or services. There are numerous reasons why firms may be motivated to undertake transfer pricing activities, and evidence of transfer pricing is '*largely fragmentary, circumstantial and highly industry and/or country specific*' Dunning (1993, chapter 18). Munday and Peel (1997) provide a review of the UK evidence on transfer pricing by foreign multinationals (see also Section 5.6.14-15)

6.4.5 There is no official data available on intra-firm trade, or more generally on exports and imports by foreign-owned firms operating in the UK. Research in these areas would require analysis of individual company accounts, potentially supplemented by primary research. Some evidence for intra-firm trade and importing behaviour was provided by Roberts (1996). This research, which involved a primary survey of around 100 foreign-manufacturing companies in Wales found that most of the respondent's sales were to overseas markets, largely to the rest of the Europe. In addition, for the 39 survey respondents engaged in inter-company sales, these represented an average of almost 50% of total sales. High levels of import penetration (and hence low levels of local sourcing) were also found amongst respondents. Around 50 plants provided

detailed expenditure data, and were spending just under 22% of total expenditure on materials and services from intra-company sources.

6.4.6 Pain (2001) reported on research based on UK company accounts data for 1997. Data was gathered on the UK's major exporters in 1997. Exports for the foreign-owned companies represented a higher share of turnover compared with UK companies. In addition FDI might effect levels of import penetration within the host economy, as intermediate inputs are, at least initially, sourced from abroad. Roberts (1996) found some evidence of increasing local sourcing (reducing import penetration) over time.

6.4.7 MNEs then have the potential to directly influence the host economies balance of payments position through their own exporting and importing behaviours (Blake and Pain, 1994; Barry and Bradley, 1997). There is however also some possibility of export spillovers to domestic firms. Foreign companies, through their knowledge and expertise may help domestic firms gain access to export markets. Girma *et al* (2001) explored these issues using firm-level data for the UK for the period 1992-1996. They concluded that "foreign presence affects both the entry of domestic firms into foreign markets and their export propensity". p. 119.

6.4.8 Fontagné and Pajot (2001) investigated whether foreign trade and FDI were complements or substitutes. Their research linked trade to FDI in British, US and French industries. In the British case, the stock of inward investment was found to have substituted for imports, but to stimulate exports. Hence implying a net positive effect on the balance of trade. In contrast inward investment was found to have a negative effect on the balance of trade in France and the US.

Box 6.6 Key findings and issues for Wales

Key Findings

- The role of MNEs in exporting (and importing behaviour) depends on the original motivation for FDI and the type of plant.
- FDI may promote exports by foreign as well as domestically-owned firms.
- There is evidence for transfer pricing manipulation, but MNEs policies vary by nationality of FDI.

Issues for Wales

- FDI makes a contribution to Wales' export performance (HMCE, data provides information of sectors which export, and these same sectors have a high FDI intensity in terms of employment and output in the Welsh case.
- FDI may help to increase the export performance of domestic firms.
- The importing behaviour of MNEs in Wales has important implications for local purchasing propensities (see also section 6.5)

6.5 Buyer-supplier and value chain effects

Box 6.7 What are the key questions?

- How do foreign firms impact the productivity of domestic firms and others whom they transact with?
- What is expected to determine the supply chain impacts of foreign firms?
- How do domestically based firms benefit when they purchase from MNEs?
- Does foreign entry improve competition in downstream markets from the MNE?
- Are foreign firms as embedded as domestic firms in terms of local purchasing propensities?

- 6.5.1 Foreign firms might have effects on the productivity of firms they trade with through purchasing or selling patterns. For example, Dunning (1993), demonstrated that foreign firms have impacted their suppliers not just in terms of the quantities of goods that they purchased (domestic suppliers gaining scale economies), but also through an impact on the quality of inputs, and the efficiency with which those inputs were supplied.
- 6.5.2 The case of the Japanese inward investment in Wales has often been used as case evidence of these types of effects (see below). Indeed, Dunning (1993) believed there was little doubt that investment by foreign-owned firms worked to improve standards and productivity in domestic suppliers.
- 6.5.3 Rodriguez-Clare (1996) also showed how linkages between foreign and domestic firms would improve domestic sector productivity, and Markusen and Venables (1999) also reveal that the 'linkage effect' of a (superior) foreign presence could cause the domestic sector to develop with wider beneficial effects in the host region or industry. Crone and Roper (1999), following a review of the literature on knowledge transfers from multinationals, concluded that the supply chain is the main route through which knowledge is transferred from multinational plants to firms in a host region, and that such transfers lead to important improvements in supplier performance.
- 6.5.4 The above suggests that where externalities in the value chain can be established then there are ramifications for policy. At its most basic the extent of input-output linkages between foreign and domestic firms will impact the direct and indirect multiplier effects of inward investment, with the hope that foreign subsidiaries purchase at least some of their goods and services in proximity to plants. However, attracted FDI encouraged to purchase from domestic firms may also create advantageous knowledge and technology spillovers to indigenous sectors.
- 6.5.5 In Wales, this recognition formed part of the driver for the Source Wales programme, and with the majority of RDAs in the UK working to improve the local trading intensities of foreign and domestic manufacturers (see UNCTAD,

2001 for a review of local sourcing programmes in Wales and the North East regions of the UK and other international examples). More generally growth of spatially constrained trading links between firms may also foster the types of agglomeration economies that have featured in recent debates surrounding the competitive advantages resulting from clusters.

- 6.5.6 The potential productivity and performance benefits accruing to firms that do business with foreign subsidiaries (particularly those in the manufacturing sector) need to be understood in the context of contemporary manufacturing environments.
- 6.5.7 A large part of the FDI stock in Wales (and the UK) is in electronics, engineering, and automotive sectors where there has been a strong focus on flexible production systems (see for example, Delbridge and Love, 1998).
- 6.5.8 Such systems have been accompanied with a wholesale redesign of buyer-supplier partnerships, with an associated emphasis on long term contracts with a reduced number of suppliers, and what amounts to a form of quasi-vertical integration (Blois, 1972, see also Imrie and Morris, 1992). With tighter bonds between foreign subsidiary and domestic supplier there is the potential for foreign firms with superior technology and knowledge to act in ways that improve the technical capability of their domestic suppliers.
- 6.5.9 Morris *et al.* (1993) demonstrated how Japanese multinationals within closer buyer-supplier partnerships provided technological assistance, in terms of design, purchasing, marketing information, tooling, and in the promotion and reward of productivity improvements. Moreover, buyer-supplier partnerships and close inspection of foreign firm activities has sometimes prompted indigenous supplier firms to adopt methods of personnel management and work organisation found in the foreign sector (Oliver and Wilkinson 1992).
- 6.5.10 However, the results for domestic firms transacting with MNEs may not all be positive, and with the degree of positive impacts affected by the nature of activities within the foreign subsidiary, the freedom of local management teams to direct purchasing decisions against the need to realise global level economies in complex component purchasing decisions.
- 6.5.11 Other issues affecting supply chain impacts include the combination of goods and services purchased in the local and national economy i.e. whether low or high value-added components are purchased for example.
- 6.5.12 There are also a series of more subtle competition issues where domestic firms may have particular difficulties in contracting with, what are often, larger MNEs. Many of these transactions type issues are predicted from transactions costs theory following Williamson (1975). In this vein Klein *et al.*, (1978) reveal the potential for transacting parties to engage in opportunistic behaviour,

particularly where the bargaining power of one party is reduced post-contract. Factors influencing the magnitude of this problem include the 'relationship-specificity' of the investment required, and the strength of contracting parties in appropriating any quasi-rents available in the presence of small numbers.

- 6.5.13 For foreign subsidiaries there are additional concerns relating to the loss of resource control where knowledge and expertise is transferred to the supplier. This possibility is enhanced in the presence of information technology links between firms which have been shown to increase the potential for opportunistic behaviour (Clemons *et al.*, 1993). For these reasons an element of explicit or implicitly agreed 'exclusivity' is common in such buyer-supplier partnerships, whereby the purchasing firm can achieve a degree of co-ordination similar to that achieved with in-house production, without experiencing the full costs associated with transactions risk (see also Blois, 1972). Then exclusivity can remove the agency problems that could discourage technology transfer.
- 6.5.14 Munday (1995) shows that there are other reasons why production externalities from the foreign sector may not be reflected in the value added of domestic suppliers. Closer foreign buyer-domestic supplier partnerships routinely involve the exchange of detailed cost information, often for the purposes of joint value analysis and value engineering. Consequently, where suppliers provide information in detail on their production costs there is the danger that the large foreign subsidiary will act in an opportunistic manner to 'squeeze' supplier profits.
- 6.5.15 The discussion above has largely surrounded domestic suppliers working with foreign subsidiaries of multinationals. However, equally important is the fact that foreign subsidiaries sell to domestically based customers. Where domestic firms purchase from the foreign subsidiaries they may benefit from the greater scale and scope efficiencies of larger foreign firms. This obviously links to debates on whether foreign entry breaks down domestic monopolies or not (see also 6.3 above).
- 6.5.16 Domestic purchasers may also benefit directly from the innovative capacity and technology of the multinational. Foreign (and domestic) multinationals can provide direct assistance to customer groups.
- 6.5.17 For example, Dunning (1993) found that US affiliates in the UK were more likely to provide training for clients, than their domestic competitors. Moreover, reviewing a scarce evidence base, Dunning (1993) suggested that foreign firms, through inward investments, have had the effect of raising standards in downstream sectors, this linking to the fact that by improving the quality of the output of their industrial customers, they create new advantages for themselves.

6.5.18 There is also the possibility that new foreign entry improves competition. Caves (1996) showed that entry by foreign multinationals can increase competition in domestic markets. Foreign entry potentially cracks domestic industry entry barriers, reduces prices, and might provide a partial solution to market failure (see also Driffield and Munday, 1998).

6.5.19 On the negative side foreign entry might work to increase concentration in upstream sectors from domestic purchasers. However, in the UK case, Driffield (2001) demonstrated that entry by foreign manufacturing reduced concentration, and increased the speed at which industry sectors move to equilibrium.

6.5.20 In summary, the literature review indicates that there are likely to be productivity spillovers to both the suppliers and customers of foreign manufacturing groups, but with uncertainty on the scale of impacts.

Local sourcing and embeddedness

6.5.21 It is expected that the scale of buyer-supplier type impacts will be affected by the degree to which foreign firms purchase within the domestic or reference economy. The 'low' relative transactions propensity of foreign plants has been noted in some studies, and with the inference drawn that foreign enterprises characterised by lower rates of intra-regional linkage would be expected to contribute much less to local growth prospects (for early research on this issue see Stewart, 1976; McDermott, 1979, McAleese and McDonald, 1978).

6.5.22 Investigation of the 'local' purchasing propensities of foreign firms has featured in research that has tried to encompass the boundaries of foreign firm embeddedness. In general this research has pointed to relatively low levels of purchasing linkages between foreign enterprises and local suppliers.

6.5.23 For Scotland, Turok (1993) revealed that the Scottish electronics industry (which in similarity to its Welsh counterpart, included many foreign firms) purchased an average of just 12% of material inputs in the region. Turok also concluded that where linkages had been formed they could be described as short term in nature and characterised by a high proportion of low skill and low pay jobs.

6.5.24 McCann (1997), however, challenged the findings of Turok. Using the Scottish input-output table framework, McCann argued that the Scottish electronics industry had become more integrated over time into the local economy, and that the sector was characterised by greater regional inter-linkages compared to many other Scottish industries.

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- 6.5.25 For Northern Ireland, Crone and Roper (1999) showed that lower levels of buyer-supplier inter-linkages served to restrict the transfer of knowledge between foreign firms and local suppliers.
- 6.5.26 Using regional input-output frameworks Brand *et al.* (2000) examined the regional purchasing propensities of domestic and foreign-owned firms in three UK regions including Wales. They demonstrated that foreign-owned manufacturers purchased less within given host regions than the domestic sector. This was explained in terms of the relative importance of intra-firm transfers in the foreign case, and with these same foreign firms having a greater spatial reach in sourcing. They concluded that MNE subsidiaries in more peripheral areas may be obliged to share patterns of linkage with allied group operations in more core areas. This confirmed research by Gripaios and Munday (2000) which revealed in the Welsh case that locally based multinationals tended to source business services outwith the reference region.
- 6.5.27 In a similar vein, Phelps (1993) highlighted how foreign firms form part of an increasingly international spatial division of labour which can suppress local linkages development.
- 6.5.28 Following from the above review there is a further expectation from the literature that if the impacts on local suppliers are a function of the intensity of foreign manufacturing linkages in the local economy, then a series of investor characteristics including plant age and size, industry sector, and entry mode, affect the scale of spillovers into the domestic supplying sector (Munday and Roberts, 2001).
- 6.5.29 Other factors impacting the degree of local inter-linkage could include the nature of the foreign firm activity (i.e. how integrated operations are, and underlying functionality) and policies regarding local outsourcing. For example, local supplier impact may be severely constrained by the nature of the local supply side. Morris *et al.*, (1993) in their study of the Japanese plants in Wales showed that plants utilising cutting edge technology might find it impossible to source components in proximity to plants.
- 6.5.30 Munday and Roberts (2001) examined the key characteristics of foreign firms that influenced local materials sourcing in Wales. Their results revealed that local materials sourcing increased with age and decreased as plant size grows. They also revealed a series of industry effects, with for example, age and plant size effects more important in metal manufacturing, minerals and chemicals industries as opposed to engineering sectors.

Box 6.8 Factors in supplier impacts of FDI

- Age of plant; older plants may benefit from learning and experience of local input markets; older plants may gain in autonomy giving more scope for local managements to explore local sources and opportunities.
- Plant size. Smaller firms have less opportunity to benefit from scale economies in input searches; larger foreign firms most likely to be connected to globally organised supply chains maximising scale and scope economies.
- Industry effects; industries with inputs with low value to weight ratios expected to source higher proportion of inputs in proximity to plants
- Entry mode; foreign firms which take domestic firms over expected to retain in some measure purchasing policies of the acquired firm.

6.5.31 They concluded that while larger inward investors in Wales, may well spend more in absolute terms locally, it was smaller firms that made a relatively higher contribution to the economy in terms of their supplier linkages. Hence attracting more smaller foreign firms rather than fewer larger ones may ultimately increase the development potential of parts of the foreign-owned sector in respect of supplier impacts.

Table 6.3 Summary Respondent Characteristics from Munday and Roberts study (2001)

Variable	Metal manufacturing, mineral products and chemicals	Metal goods, engineering and vehicles	Other manufacturing industries	All
FTEs	3,795	18,799	2,373	25,032 *
Average Wage (£)	17,671	13,934	16,103	14,729
Expenditure on Materials & Services/Sales(%)	65.1	69.0	55.3	67.1
Wages / Sales (%)	14.9	10.5	13.9	11.5
Local Sourcing(Materials) (%) ¹	5.6	10.9	4.2	9.7
Local Sourcing (Services) (%) ²	75.7	54.4	57.2	60.0
Local Sourcing (Materials& Services) (%) ³	23.7	16.0	13.4	16.8

* Not equal to the sum of the divisions as one plant was unclassified.¹ Spending on Materials in Wales/ total Materials spend. ² Spending on Services in Wales/ total Services spend. ³ Spending on Materials and Services in Wales / total spending on Materials and Services. Source: Munday and Roberts, 2001.

Evidence of impacts of linkages with foreign firms

6.5.32 This section concludes by reviewing empirical and case evidence of the supplier and buyer impact associated with FDI. There are some difficulties in identifying the impacts of linkages with foreign firms on domestic sector productivity. For this reason the more interesting research has examined case evidence of linkages and effects. In both cases the emphasis of research has been on linkages backward up the supply chain, rather than forwards to customers.

6.5.33 In the UK, Driffield *et al* (2002, 2005) investigated the impacts of linkages with foreign firms forged by both buyers and suppliers.

6.5.34 Driffield *et al* (2002) examined how far the linkages that domestic firms had with the foreign sector in the UK led to productivity advantages. They used Office of National Statistics (ONS) data comprising 70 industry observations for each year 1984-1992. They developed variables describing the transactions intensities between domestic firms and foreign multinationals using the UK Input-Output tables for 1990 also produced by the Office of National Statistics (ONS, 1996).

6.5.35 The results from their analysis revealed that in cases where domestic firms purchased from industries with comparatively higher levels of FDI then there was a positive association with domestic industry performance, and with this impact positive whether the purchasing links were with foreign firms in the same sector, or in other sectors. They took this to mean that domestic firms benefited from higher quality components, better technology and lower prices. This could also mean that the domestic sector was learning from the operational and managerial procedures adopted in foreign firms.

6.5.36 This research also provided little evidence to suggest that the presence of foreign firms was creating distortions in upstream product markets which could be reflected in higher prices, and with the domestic firms able to appropriate some of the gain from trade with foreign manufacturing enterprises.

6.5.37 In cases where foreign firms buy from domestic manufacturing the extent of benefit was less clear. In particular intra-industry sales by domestic firms to foreign firms in the same industry appeared to result in poorer domestic industry performances. This was taken to mean that where domestic firms sell to foreign firms in the same industry, that the foreign firms have better knowledge of the production and market environment, and operational realities facing the domestic firms. Then there was less of a propensity for opportunistic behaviour in the domestic industry, and moreover, the foreign manufacturer, was better able to financially appropriate any productivity gain resulting from the transaction. Driffield *et al*. (2002) did not take this to mean that there was no efficiency gain in the domestic firms, but rather that the foreign enterprise,

perhaps aided by its market power and size, was able to squeeze margins in a more efficient domestic sector.

6.5.38 Driffield *et al* (2005) adopted a similar approach, but attempted to combine a spatial element with the investigation of linkage related spillovers from foreign to domestic firms. The analysis collected data on 20 manufacturing sectors for 10 UK regions.

6.5.39 The analysis dwelt on the difficulties of designing variables that described the transactions intensities existing between foreign and domestic firms.

6.5.40 Driffield *et al* (2005) confirmed earlier analysis that domestic firms could be benefiting from purchasing linkages with industries with strong foreign involvement. Significant results were revealed where domestic industries purchased from the same industry group with high levels of foreign involvement, but in a different region, and where domestic industries purchased from different industry groups with high levels of foreign involvement in the same region. Driffield *et al* (2005) believed that their results offered support for the contention that foreign manufacturers do bring innovative managerial techniques and production processes to host areas which have the effect of improving standards in downstream sectors. Following prior analysis where domestic firms sold to industries with high levels of foreign manufacturing investment the nature of linkage externalities was less clear. For example, where domestic industries sell to the same or different industry with higher levels of foreign investment, but in other regions, then there was evidence of a negative impact on domestic sector gross value added.

6.5.41 The contribution of Driffield *et al* (2004) was significant because it demonstrated that supplier impacts might vary not just in relation to whether linkages were intra- or inter-industry, but also that distance was an important variable in the scale of productivity spillovers. A contention of this research was that elements of regional policy had tended to focus upon the economic significance of backward linkages from the multinational firm into the host region economy. This focus might be justified in terms of assessing the indirect employment, output and jobs supported by MNEs but the nature of production spillovers backwards to the domestic supply sector empirically was far from clear.

6.5.42 On the contrary the research demonstrated that forward linkages might be accorded more consideration in policy.

6.5.43 As highlighted above, there are difficulties in measuring transactions intensities between foreign and domestic firms, and this has led to a paucity of analyses on the issue. Case evidence for supplier impacts related to FDI is more common.

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- 6.5.44 For example, a number of research contributions during the 1980s and early 1990s focused on the supplier impacts associated with the entry of Japanese firms to the UK, US and Europe (see Helper and Sako, 1995) and examined the role of foreign firms in a more general change in the ethos of buyer-supplier partnerships (Imrie and Morris, 1992; Turnbull *et al.*, 1992). This was based in part on the more exacting quality emphases in Japanese plants, and their preference for working with a smaller number of suppliers on a much closer basis.
- 6.5.45 Research has then explored how far quality and operational practices in Japanese firms in sectors such as electronics and automotive were taken up by domestic firms and others, particularly where multinationals have worked to develop local supply infrastructures.
- 6.5.46 For example, Morris *et al* (1993) revealed in the Welsh case, that local trading linkages established by Japanese firms had become a means of transferring best practice in operational techniques, and with some firms benefiting from the longer term relationships emphasised in transactions links with Japanese firms. This same research also highlighted how Japanese firms assisted domestic suppliers with problem solving. Morris *et al* (1993) came to the following conclusion: "Suppliers had been obliged to take on board Japanese quality standards throughout their processes and this had aided them in winning other business" (p50).
- 6.5.47 Other impacts included Japanese firms asking suppliers to undertake elements of sub-assembly connected to the components being produced. Other case evidence of these positive effects was provided by Munday (1991, 1995).
- 6.5.48 On a more cautious note Munday (1992) stressed that the closer buyer supplier partnerships being encouraged by Japanese firms and the increased information burden on domestic suppliers, potentially gave the Japanese MNEs greater power, for example, in restricting the profits of domestic suppliers.

Box 6.9 What does the review of research into value chain effects reveal?

- Theory of the multinational suggests that there may be beneficial impacts for domestic suppliers of working with MNEs.
- Empirical evidence reveals value chain impacts, although the evidence base has been truncated because of the difficulties in measuring transactions intensities between foreign and domestic firms.
- UK evidence suggests that value chain impacts are fairly small.
- UK evidence reveals evidence for greater productivity spillovers in cases where domestic firms purchase from foreign firms (i.e. forward linkage effects).
- In terms of examining the spillover effects of transacting with foreign firms there is a need to differentiate intra/inter industry and spatial effects, as well as considering forwards and backwards linkages.
- A series of factors are expected to influence the scale of value chain impacts including plant size, industry, plant function and age.
- Foreign-owned manufacturing firms purchase less within given host regions than the domestic sector.
- In Wales foreign firm embeddedness in terms of local purchasing intensity has been linked to age and industry factors.

Box 6.10 What are the issues for Wales?

- Can policy interventions be justified in directing foreign firms to local purchasing and sales opportunities?
- Value chain linkages between foreign firms and indigenous suppliers in Wales are restricted by the nature of the regional supply side in some industries, and the limited autonomy of foreign plants to search for local solutions to supply problems.
- Interventions to improve linkages between foreign firms and domestic suppliers might be focused more on selected industries.

7 Stage 2 review: FDI impacts, evidence on employment, labour market effects, industrial relations and HRM/operational management

7.1 Introduction

7.1.1 In Section 7 the review focuses on evidence relating to employment effects, earnings and labour market impacts, and then reviews evidence relating to FDI related effects in industrial relations, and HRM/operational techniques.

7.2 Employment effects

7.2.1 This section seeks to examine literature which has specifically explored the employment effects of FDI. At one level this area of impact can be observed and commented on by reference to published statistics. For example, the data section (Section 4) has already outlined the direct employments, outputs etc. associated with the foreign-owned sectors both globally and locally. The literature then seeks to explore issues such as whether particular FDI characteristics affect impacts, and whether there are more indirect effects on the economy, linking through to issues of the economic development impacts of FDI.

7.2.2 This impact area is of particular relevance to Wales as FDI is important to the region in terms of levels of employment and output. In relative terms, Wales has a higher share of its employment in the foreign-owned sector compared with the UK. The earlier data section has further shown that foreign firms pay higher wages and are more productive than domestic firms in the same industry.

7.2.3 Box 7.1 outlines some of the key questions addressed in the academic literature.

Box 7.1 Employment effects: Key questions in the review

- What is the scale and scope of the direct employment effects of FDI?
- What are the indirect employment effects of FDI?
- How do the (direct and indirect) employment effects vary according to the mode of FDI entry, type of subsidiary and nationality of parent?
- How do other firm/plant characteristics, such as age and sector/activity influence employment effects?
- Does FDI change the industrial structure of the host economy?

7.2.4 The impacts of entry mode, type of subsidiary (activities and functions undertaken) and nationality of parent on employment were explored by Williams (2003) in his study of UK foreign-owned manufacturing subsidiaries in 1998. This

paper found that greenfield entry modes had a relatively greater positive effect on company employment than the other entry modes, and that the M&A entry mode had a relatively negative impact. A number of typologies have been developed in the literature to classify different subsidiaries and their expected impacts. For example subsidiaries could be classified by the amount of autonomy, or the way in which they are managed. For example Birkinshaw and Morrison (1995) identified three types of manufacturing subsidiary, the 'local implementer' the 'specialised contributor' and the 'world mandate'. Table 7.1 provides a summary of these types, which are most easily related to the manufacturing sector, and is taken from Williams (2003). Strategic autonomy was not found to be a significant influence on company employment in this case, however those subsidiaries with higher value-added functions were found to have a positive impact on employment.

Table 7.1 Subsidiary type and potential employment impacts

Subsidiary type	Potential employment effects
Local implementer	Low-level assembly type jobs; possibility of some spillovers.
Specialised contributor	More diverse range of jobs – but still limited to production; spillovers are possible.
World mandate	Jobs could be created at all levels; spillovers likely; technology transfer and acquisition of managerial/production skills likely.

Source: Williams (2003)

7.2.5 Wales has provided some exemplars of the subsidiary types noted in Table 7.1. For example, some Japanese 'second-wave' electronic component suppliers entering Wales during the 1980s might have been classified as local implementers, with production based on assembly of imported kits, and with little evidence of spillovers (Munday *et al.*, 2005). On the contrary, the larger Japanese manufacturers such as Sony and Panasonic might have fitted within the specialised contributor bracket featuring a wider range of function and employment, but with operations still limited in large measure to production only, and with limited R&D. The subsidiary featuring more of world mandate continues to be a rarity in Wales, but a firm such as Airbus at Broughton might fit this description with employment created at all levels.

7.2.6 In terms of nationality effects, some evidence was found of ownership specific impacts. Williams (2003) found Asia/Pacific ownership to create more positive company employment effects relative to the US and Europe. The author however noted this result may correlate closely with the findings in relation to greenfield entry mode, as many Asia/Pacific firms tended to use this entry mode.

7.2.7 In similarity to some other impact sections, one conclusion from analyses of the employment and output impacts is that the effects of FDI will then depend on the type of FDI and the host economy characteristics. When considering economic growth, Ford *et al* (2008) concluded that nationality was a significant factor, and that the economic growth impacts would be strongest where home and host

economies were most similar (see also productivity spillovers section (6.2) for a discussion of these findings).

- 7.2.8 Driffield (1999) examined some of the employment consequences connected with foreign inward investment. The central hypothesis of this paper was that, at the industry level, inward investment results in an increase in domestic wages, and a fall in employment in the UK-owned sector. Driffield noted that the higher wages may result in a substitution of capital for labour, which would reduce employment and increase productivity at least in the short term. Driffield estimated that this employment substitution was 'equivalent to approximately one-fifth of all the jobs created by inward investment'. This paper further found that these impacts varied by sector. For example, industries such as food, metals, glass, heavy engineering and textiles were found to be particularly badly affected, and the author suggested that growth in these domestic sectors would have been stronger without the FDI. These conclusions are similar to those of Buffie (1993) who, in a theoretical paper, analysed the impact of foreign investment using a two-sector dual economy model. This research found that FDI in high-wage manufacturing sectors crowded out domestic capital, and lowered the level of manufacturing sector employment in the long-run. However in an 'enclave sector' or in the primary export sector FDI was found to crowd in domestic capital, and to reduce underemployment.
- 7.2.9 One important determinant of total (direct and indirect) employment and output effects are local linkages and embeddedness. These issues are discussed elsewhere in this report (Section 6.5), however by way of summary, some Wales specific findings are outlined here. Munday and Roberts (2001) suggest that backwards linkages generally increase with plant age and decrease as plant size grows. These propensities were found to be greatest amongst inward investor in metals, minerals and chemical industries. In relation to the consequent multiplier impacts of inward investment, whilst these were found to vary by sector, both output and employment multipliers were lower compared to domestic firms in the same industry (Roberts, 1996). Output multipliers in foreign-owned industries ranged from 1.27 to 1.43, and employment multipliers from 1.60 to 1.85.
- 7.2.10 A later estimate by Munday *et al* (2000), which examined the Asian owned manufacturing sector in Wales found that each direct job in this sector supported a further 0.3 to 1.1 jobs as a result of multiplier impacts.
- 7.2.11 One related issue addressed in the literature is that of the impact of inward FDI on host economy industrial structure. Barry and Kearney (2006) suggest that if the foreign multinationals "operate in sectors that are imperfectly correlated with those dominated by indigenous firms, FDI can help create a better diversified economy, one that is growing more rapidly without a commensurate rise in volatility and risk" (p.404). Their study explored this possibility using the case of the Irish economy between 1974 and 1999, a period when Ireland experienced significant increases in its share of foreign-owned manufacturing

employment, particularly in high-technology sectors. Barry and Kearney found that although the foreign sector was more volatile than domestic firms, the diversification benefits allowed the manufacturing sector to grow faster without a commensurate increase in volatility.

7.2.12 Box 7.2 outlines the key findings from the employment literature and highlights key issues for Wales.

Box 7.2: Employment effects, key findings and issues for Wales

- FDI represents a significant share of industry employment and output in the UK and Wales, and this share has increased over time.
- Greenfield FDI was found to generate the largest employment effects, whilst the effect of M&A entry has been found to be negative.
- Strategic autonomy may not directly influence employment or output scales, however increases in employment have been found to be related to increases in value-added activities.
- There is some evidence that employment effects of FDI are ownership specific, with Asia/Pacific owned companies creating more positive company employment effects compared with other nationalities, although this may be linked to entry mode as these nationalities often use greenfield entry routes.
- FDI may result in employment substitution away from domestic firms where the inward investments have led to increases in industry wages.
- FDI has been found (in the case of Ireland) to have diversification benefits – i.e. FDI can create a more diversified economy capable of growth without a significant rise in volatility and risk.

Issues arising from the review/ policy issues in Wales

- The increasing global trend of M&As may generate negative employment and output effects in Wales. (This may link to research on business ownership which is currently being undertaken by London Economics for the Welsh Assembly Government.)
- FDI may have created some diversification benefits for the Welsh economy in terms of industrial structure.
- There is limited information on the significance of foreign ownership in some parts of the services sector, and the significance of direct and indirect employment creation.

7.3 Wider labour market effects

Box 7.3 Labour market impacts of FDI: Key questions

- What are the expected labour market effects resulting from increases in FDI?
- Does the type of FDI affect labour market impacts?
- Do the labour market impacts of FDI differ from impacts associated with expansion of domestic MNEs in the local economy?
- How stable is the employment created by MNEs?
- Do MNEs impact the skill content of employment?
- Do MNEs work to increase wage inequality?
- How does FDI create indirect employment impacts in an economy?

- 7.3.1 There are a host of potential labour market effects arising from foreign inward investment. As discussed above key contextual drivers of labour market impacts are the type of FDI, its motivation, the industry sector concerned, and location. Added to this, labour market effects will also be connected to supply side issues in the host state. MNEs as an organisational form have been connected to labour productivity improvements. Moreover such firms can work to lower production costs and improve the quality of production. Inevitably these characteristics of MNEs have an influence on the types of skills that they require.
- 7.3.2 Research interest in the labour market effects of MNEs are diverse. At one level research has focused on whether such firms are relatively footloose compared to domestic firms (i.e. stickers or snatchers, following McAleese and Counahan, 1978). Then the global reach of MNEs can enable them to quickly move value adding operations with negative employment consequences from place to place as local factor conditions change. It is noted that domestic MNEs can engage in very similar behaviour.
- 7.3.3 Other research on the labour market impacts of MNEs has focused on issues of skills mix and wage gaps/inequalities. The effects of MNE affiliates on both the level and skill content of employment will depend on the nature of activities being undertaken. In the Welsh case, several pieces of work have shown that international subsidiaries feature very limited functional and occupational depth and with this connected to a 'production-only' basis of regional operations (Morris *et al.*, 1993; Munday, 1988, Munday *et al.*, 1995). At the same time domestic subsidiaries of MNEs in Wales share very similar characteristics in terms of operational basics.
- 7.3.4 Dunning (1993) believed that studies of the initial impact of MNEs undertaking greenfield market seeking investment in developing and developed states,

suggested that the main labour market effects are with respect to semi-skilled and unskilled labour. However, where foreign subsidiaries are successful in backward integration then there are expected to be demands for better quality and higher skilled labour.

- 7.3.5 Consequently, Dunning argued that in developing countries that the role of MNEs in influencing labour skills and productivity will depend in part on the extant competitive advantages of the reference country, and how indigenous firms and governments react to the foreign presence.
- 7.3.6 Labour market effects will also be influenced by where labour comes from (from the unemployed or from other firms) and the role of MNEs in training people thereby improving the quality of the local labour force and improving the supply side and the demand side of the host economy.
- 7.3.7 Policy concerns have contextualised much of the interest in the labour market effects of FDI in terms of skills and wage inequalities. In part this reflects concerns over a worsening of prospects for unskilled labour in more developed states, particularly as capital exits to cheaper locations overseas. A connected issue is that MNEs with potentially stronger demands for skilled labour may through their demands work to exacerbate earned income inequality in a host nation.
- 7.3.8 However, in this respect Gaston and Nelson (2002) point out that given that FDI flows are largely centred on developed states “that the substitution of low wage labour in developing countries for domestic unskilled labour is unlikely to be an empirically important factor behind FDI growth”. p.442.
- 7.3.9 Whilst section 7.2 showed there is a firm expectation of direct employment effects associated with MNE capital, there is an equally strong expectation of indirect employment effects. These effects can come in several ways. First, the MNE spends in the domestic economy, as do its employees, and this spending creates employment along the industry and consumption supply chain. A key driver here is the earnings levels of employees, and the local sourcing level. The latter is addressed in the Stage 2 report under issues of embeddedness and buyer-supplier spillovers (Section 6.5).
- 7.3.10 There are also employment effects amongst competitors to foreign firms (these may be positive or negative). Employment effects are influenced by the role that FDI has in improving labour productivity.

Representative labour market studies

- 7.3.11 In what follows a series of studies that examine the labour market consequences of FDI are reviewed. In the main these studies are contextualised on the presence of wage, skill and labour productivity gaps

between foreign owned and domestic economies, and attempts to explain these differences, and the policy ramifications of these differences.

7.3.12 A useful starting point is to consider whether there are differences in wages and skills use between foreign-owned and domestic firms.

7.3.13 There is some expectation that wages gaps could result from differences in productivity levels between foreign owned and domestic firms. Foreign-owned firms may use more skill intensive employees (see Doms and Jensen, 1998; Feliciano and Lipsey, 1999). However, higher earnings levels might themselves be the precursor to greater worker effort.

7.3.14 Another possibility is that the higher levels of capital intensity in foreign-owned firms might encourage the payment of higher wages because the costs associated with shirking in the presence of such capital is costly. Moreover, compared to their domestic counterparts, foreign enterprises face a liability of foreignness in the host meaning that they are less able to monitor workers, and are willing to pay more to ensure effort.

7.3.15 Lipsey (1994) argued that foreign firms payed more than their domestic counterparts but that this was in large measure down to differences in size (i.e. larger firms are universally recognised as paying more). Lipsey showed that after controlling for size there was no wage gap. Caves (1996) also concluded that while many studies have found that MNE affiliates pay higher wages than domestic firms, the difference shrinks once the different industry composition of foreign and domestic firms is accounted for. Globerman *et al* (1994) showed the wage gap disappearing following the imposition of controls for scale and capital intensity. Aitken *et al* (1996) examining wage gaps in Mexico, Venezuela and the US demonstrated that higher levels of foreign investment were associated with higher wages and that a lack of spillover impacts between the foreign-owned and domestically owned sectors explained the wage gap.

7.3.16 Closely connected to wage gaps are skills gaps. These may arise because foreign-owned firms employ more sophisticated technology and then require workers with higher skill levels. Studies by Howenstine and Zeile (1992), and Blonigen and Slaughter (2001) revealed skill gaps between foreign-owned and domestically-owned firms in the US. However, foreign firms in the US tended to be concentrated in manufacturing sectors with higher skill intensities. Howenstein and Zeile found that for half of the industries they analysed that the employee skill level in foreign-owned firms exceeded that in domestically owned firms in the same industry by more than 10%.

7.3.17 Bellak (2004) provided a useful contemporary review of research treating with issues of wage gaps. His conclusion was that foreign firms differ in their patterns of factor demands compared to domestic firms, but that this was ostensibly down to factors that having little to do with foreignness.

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- 7.3.18 The next part reviews some representative studies. In the main the key studies have been completed in the UK and US where the necessary data is of sufficient quality for the more complex econometric analysis of labour market effects.
- 7.3.19 Driffield and Taylor (2000) and Driffield (1996) have undertaken a series of studies examining the labour market impacts of FDI in the UK, and with the former paper providing a useful review. This research revealed some evidence for a foreign sector productivity advantage influencing earnings.
- 7.3.20 For example, Driffield (1996) showed that foreign firms in the UK paid 7% above their respective industry averages. Driffield and Taylor (2000) revealed in their empirical analysis that an impact of FDI in the UK case has been to increase wage inequalities in the domestic sector, and lead to more use of skilled labour. Foreign entry was then seen to result in greater demands for skilled labour. However, they also discussed an indirect effect where technology spills over from the foreign to the domestic sector. In these circumstances new technology from foreign firms was taken up by domestic firms. This works to increase the productivity of skilled workers in the domestic sector, increasing demand for skilled workers at the expense of unskilled workers. Their research also showed that FDI takes two years to have its full effects on the labour market.
- 7.3.21 They concluded that FDI would have a role in increasing wage disparities and could work to potentially aggravate UK regional problems. Whilst regions may benefit from new technology and earnings, the FDI may do little to alleviate structural unemployment, and with the net result of increasing differences between skilled and unskilled labour.
- 7.3.22 Driffield and Girma (2003) examined regional FDI and the presence of wage spillovers focusing on whether there is any plant level evidence from the UK electronics industry. The study started with the proposition of the dual effects of FDI on labour demand i.e. through an output increase that is likely to favour skilled labour (but with this depending on the activities undertaken by the foreign firm); and then an impact on domestic firms as a result of new technology brought in. The result is expected to be increasing wages in the domestic sector.
- 7.3.23 However, Driffield and Girma (2003) made the point that wage spillovers may be limited by either activity, region or occupational group. For example, unskilled workers are less mobile, and so interregional effects are less for unskilled as opposed to skilled workers. Moreover they argued that because productivity spillovers are partly facilitated in the UK by domestic firms becoming more skill intensive, then wage spillovers might be expected to be greater for skilled workers. In addition they made the point that wage spillovers

are more likely where domestic industries are able to 'catch up' with the foreign sector.

7.3.24 Driffield and Girma used the ARD for the period 1980-1992. Foreign electronics firms are shown to have higher skilled wages, unskilled wages, capital intensity and labour productivity and a higher proportion of skilled workers. The empirical work suggested that wage spillovers were largely confined to the region where FDI takes place. Skilled workers in domestic plants appeared to benefit in the form of higher wages from an increase in foreign wages being paid at both intra and inter industry level.

7.3.25 In the case of unskilled wages, externalities were more confined to the level of the region and the industry, and particularly prevalent in assisted areas. The research concluded that FDI may increase demand for unskilled people, but that this encourages better unskilled people to move to higher paid jobs in foreign firms.

7.3.26 The findings from Driffield and Taylor (2000), and Driffield and Girma (2003) are not universally confirmed. A good example of a study with very different findings is Blonigen and Slaughter (2001) who also examined the role of FDI in generating wage inequality. As context they showed that the relative wages of more skilled to less skilled US people had risen after the late 1970s, and that over this same period most industries had shifted to more skilled labour. In searching for explanations for this demand shift they argued that FDI may be one reason. For example, they revealed that the US skill premium (ratio of earnings in non-production versus production occupations) grew from 1.52% in 1979 to 1.67% in 1994, and over the same period foreign affiliate employment grew from 3.7% to 13.5% of total US manufacturing employment.

7.3.27 Their paper then examined the impact of FDI flows and a rising foreign affiliate presence on US skill upgrading in manufacturing between 1977-1994. They used an industry-year panel data set which also allowed them to examine the effects of different types of FDI. Blonigen and Slaughter found little evidence that inward FDI had contributed to skills upgrading and this was confirmed with respect to different measures of FDI presence. There was one exception in terms of Japanese FDI which was correlated with lower, but not higher, relative demand for skilled workers in the greenfield investment case.

7.3.28 Blonigen and Slaughter concluded that where FDI had brought new technologies to the US, the induced technological change was not orientated towards skilled labour.

7.3.29 There have been several other pieces of research with a US labour market focus. For example, Aitken *et al* (1996) found that in the US, a higher level of foreign ownership in an industry and location was associated with higher wages in domestically owned plants. Figlio and Blonigen (1999) used county level data

from South Carolina and found that manufacturing employment in foreign plants had a positive impact on county and industry specific wages. Moreover, the addition of an average sized foreign subsidiary increased real wages for all workers in the specific county and industry by much more than a similar domestically owned subsidiary.

- 7.3.30 Axoglou and Pournarakis (2007) examined the effects of manufacturing FDI on local employment and wages across a sample of US states. Their focus was on whether plant specific employment and wages spill over to the rest of the local market. They concluded that there were fairly weak labour market impacts across states. This led through to a series of policy recommendations. In particular, given that the empirical results showed on average that rather few US states had benefited in terms of both local employment and wages from FDI inflows in manufacturing, the authors argued that different industries had different local effects. For example, FDI inflows in industries such as printing, publishing, transport equipment and instruments had positive effects on local employment and wages in several US states, whilst FDI in sectors such as stone, clay glass, had more detrimental effects on local labour markets. Then weak effects overall were expected to result from more positive labour market impacts associated with some FDI inflows being counteracted by more negative effects with respect to others, this suggesting a case for greater selectivity by policymakers.
- 7.3.31 Barry *et al* (2005) studied the role of an FDI increase on wages in domestic firms in Ireland, particularly focusing on productivity spillovers and the issue of labour market crowding out. A key issue for Barry *et al* was whether wages in domestic firms might fall because foreign firms poach labour which reduces domestic sector productivity.
- 7.3.32 Barry *et al* showed differences in wages across industries according to whether firms are nationally based exporters, non-exporting national firms or foreign-owned firms. This is taken as evidence that the different types of firms were using different proportions of skilled, unskilled and capital factors. Foreign firms were found to pay most, followed by exporting then non-exporting Irish firms. Barry *et al* posited that the use of different types of workers in different proportions amongst the three groups could cause crowding out. Here foreign-owned manufacturing firms raise demands for skilled labour (and wages) which encourages domestic firms to substitute unskilled for skilled labour. For Irish non-exporters the assumption is that labour supply is elastic and that they use higher proportions of unskilled labour such that the foreign presence has less of an effect. However, for domestic exporting firms using more skilled labour there is a greater possibility of crowding out as a result of the foreign presence.
- 7.3.33 Using plant level data for 1990-98, Barry *et al*. found that foreign presence has a negative effect on wages and productivity in Irish exporters, but no effect on wages in Irish non-exporters. This was taken as evidence that Irish non-

exporters did not benefit from productivity spillovers from the foreign sector (lack of absorptive capacity). The Irish exporting sector did, however, suffer from labour market crowding out, and with these impacts outweighing any positive productivity spillover effects.

7.3.34 Gopinath and Chen (2003) undertook a cross country analysis of FDI and its wage effect. The focus in this analysis was on whether capital inflows increased wages in host (developing) states due to a change in relative factor endowments. They analyse how FDI affects the wage gap between skilled and unskilled workers for a sample of developing states. The analysis revealed that capital flows across countries were not sources of wage inequality across states. On the contrary, capital flows worked to reduce cross country wage inequality, such that in developing states the labour share in gross national product (GNP) rises significantly with inward FDI, and then that the elasticity of wage with respect to inward FDI is positive. However, inward FDI flows served to widen the gap between unskilled and skilled labour for developing countries. The conclusion they reach is that capital mobility results in a cross country convergence of wages, but a widening of the wage gap between skilled and unskilled people in developing states.

7.3.35 A further issue is the extent to which labour market regimes in different countries affect inward investment decisions.

7.3.36 The Stage 1 review revealed that issues relating to labour costs (unit labour costs) frequently come out as significant in FDI determinant studies. Undoubtedly foreign firms may be attracted to lower unit labour cost locations, however, such location factors may be strongly correlated with other state characteristics.

7.3.37 Traxler and Woitech (2000) dealt with the issue of transnational investment and national labour market regimes explicitly. Their research was contextualised on Western Europe where relatively integrated product markets coexist with remaining differences in labour market regimes in terms of both material labour standards and industrial relations institutions. This could provide MNEs with the motivation to place their investments in states where labour standards are lowest and where institutions cause the least problems for management.

7.3.38 Their study examined US FDI across 14 European countries between 1981-92, and showed that US investors did not attribute a high priority to labour market regimes when selecting production locations. Moreover, they concluded that US firms did not pursue a coherent strategy regarding such regimes. They conclude that: "If growing economic integration across Europe has indeed stimulated regime shopping, labour markets and their institutions are certainly not the primary arena for such strategies" (p 152).

7.3.39 The boxed section (Box 7.4) reveals some of the issues for Wales arising from the review of labour market impacts. There is an expectation from the review that labour market impacts are connected with the type of activity undertaken by foreign firms in Wales. It has been stressed that in the main FDI in the region is market seeking with a fairly limited functional base. However, this does not depreciate the very real direct and indirect employment impacts connected with foreign capital in the region.

7.3.40 Much of the extant research in Wales that has investigated the defining characteristics of foreign firms versus domestic confirms issues of superior labour productivity and higher wages. These are also confirmed with respect to sources such as the Annual Business Inquiry (see Section 4) where the earnings differential between foreign firms and domestic firms was around 36% in manufacturing in 2005, but with lower wage differentials generally with respect to services sectors. Gross value added per employee in foreign manufacturing was around 67% higher than in domestic manufacturing in 2005. In line with the review it is expected that much of this difference is down to specific industry and size effects. Indeed, were it possible to compare foreign subsidiaries with the subsidiaries of UK multinationals operating in Wales, it is expected that much of the wage and productivity gap would disappear.

Box 7.4 Labour market effects of FDI, key findings and issues for Wales.

- In the UK foreign firms pay higher wages than domestic counterparts.
- FDI in the UK appears to increase wage inequalities in the domestic sector.
- Wage spillover impacts may vary by industry, occupation and across space.
- Labour market impacts may not be the result of foreignness, but rather result from the fact that firms are MNEs, and present in certain industries.
- Wage and skills gaps purported to result from foreignness can largely be explained because foreign firms differ in patterns of factor demands compared to domestic firms. This largely reflects industry and scale effects.

Issues arising from the review/policy issues in Wales

- Average wages in foreign firms in Wales in manufacturing were around 36% higher than those in domestic manufacturing in 2005; in services earnings in the foreign sector are closer to those in the domestically owned sector.
- While foreign firms in Wales tend to pay more than domestic firms; this is largely expected to be a consequence of industry and scale effects.
- The lack of a comparison sample means that it is difficult to investigate in Wales whether foreign firms pay more than domestic firms in the same industry.
- There has been very limited research as to whether FDI increases have led to wage inequality between skilled and unskilled people in Wales.
- Beyond the anecdotal there is limited evidence of labour market crowding out in the Welsh economy as a result of new FDI entry.

7.3.41 There has been very limited work in Wales that has addressed the comparative skill content of foreign versus domestic subsidiaries, and whether the presence

of foreign firms has exacerbated wage inequalities between skilled and unskilled labour. Notwithstanding there is some expectation that the empirical results reflected in UK wide research by authors such as Driffield and Taylor (2000) are equally applicable to Wales in this respect.

7.4 Industrial relations effects

7.4.1 This section examines the industrial relations impacts surrounding FDI. In this section information is provided based around the following questions:

7.4.2 In many parts of the impacts section it has been concluded that effects may not be linked to foreign-ownership, but rather might be as much to do with structural factors including whether a firm is actually multinational or not. Clearly similar conclusions might relate to IR impacts. However, there is some prospect that IR-related impacts might be better connected to 'foreignness' in the round. Selected foreign firms come from very different cultural, legal and societal contexts.

7.4.3 These same firms operate in a wide variety of social and institutional contexts. At one level this might mean that the very scope of their foreign operations results in expertise relating to the best methods (employment and personnel relations) to use in different contexts. Indeed part of Dunning's eclectic approach to the MNE suggests that ownership advantage can encompass the ability of MNEs to organise and manage resources efficiently. At another level there is also the possibility that by their very size, foreign firms are able to bend host institutions to their will, with some MNEs keen to standardise bargaining arrangements across states. Of course labour institutions with global reach may also have the ability to collectively bargain at an international level then countering the strength of the MNE (see Collings, 2008).

7.4.4 Dunning (1993), makes the important point that "the most pronounced impact of inbound direct investment on the industrial relations of a host country is likely to occur when the practices of the foreign firm are superior to those of indigenous firms, and the labour unions are receptive to the adoption of these practices" p.378.

7.4.5 The IR-related effects resulting from the foreign presence might include the following;

7.4.6 First there is the possibility that foreign firms will innovate in terms of actual IR practices and then that these same practices will be copied by subsequent foreign entrants, or by indigenous firms.

7.4.7 Second, foreign firms might have a role in actually changing the nature of IR institutions in the host country.

Box 7.5 Key questions on industrial relations effects

- What impacts do foreign firms have on industrial relations, and institutions?
- Do foreign firms engage in different IR practices, and different collective bargaining practices from their domestically-owned counterparts?
- How far does different IR practice lead to changes in industrial performance and propensities for industrial action?
- Are there other more subtle impacts relating to the impacts of FDI on trades unions and IR practice?

7.4.8 In Wales, the case of Japanese inward investment, provides examples of these different types of effects.

7.4.9 Japanese firms first entered Wales in the early 1970s. These firms entered a manufacturing industrial relations environment grounded in more traditional industries, multi-union representation in plants, and with employee relations characterised by arms-lengths ties between management and employees. The Japanese firms themselves came from a comparatively stable IR context of enterprise unionism, which itself gave greater freedom to managerial prerogative. How would the Japanese plants fare in the more adversarial conditions typical in the Welsh economy of the early 1970s and through into the 1980s?

7.4.10 According to Morris *et al* (1993) they got on very well, such that: “Non Japanese companies have some times more or less copied the collective agreements signed between Japanese companies and British unions. How well the unions have handled Japanese inward investment, on the other hand, is a subject of heated and highly emotive debate”.p.96

7.4.11 An early Japanese entrant to Wales was Sony at Bridgend. They established a pattern followed by other Japanese transplant operations in that they worked to recognise a trades union before they commenced production operations. At the time this was a fairly novel approach, with several other early agreements by Japanese MNEs based on single union representation for bargaining processes (Munday, 1990).

7.4.12 For the Japanese transplants this type of agreement was vital in developing the more flexible production operations at the heart of their manufacturing philosophy. However, the early deals struck by Japanese firms in Wales, and elsewhere in the UK, had longer term institutional ramifications. For example, subsequent inward investors were increasingly subjected to ‘beauty parades’ between competing unions.

7.4.13 The key change here was that it was foreign employers who were selecting the appropriate trades unions, rather than the employees themselves. This shift also meant that regional TUCs, until the mid-1980s at least, were acting more

as a managerial agency. In Wales one of the outcomes was that the Wales TUC became an important part of the *Team Wales* approach to winning new inward investment.

7.4.14 Inevitably, the raft of regional manufacturing closures in the early 1980s led to more overt competition between trades unions to gain representation 'rights' in incoming plants. In the Welsh case there were major problems caused in the union movement as a result of accusations of membership poaching, and with a significant number of new deals with foreign enterprises in the 1980s including conditions for either binding or pendulum arbitration in disputes. Much of the 'drama' in this process was fought out at Japanese plants such as Hitachi at Hirwaun, Orion at Kenfig Hill, and Yuasa battery at Ebbw Vale, and the end result was a very different IR environment in many parts of UK manufacturing (see Bassett, 1986 and Munday 1988).

7.4.15 Box 7.6 shows the key constituents of Japanese MNE agreements with UK trades unions during the 1980s. With the trades unions willing to sign up to these types of conditions, it is evident in the UK case that Japanese manufacturing investment had begun to have a marked effect in the employee relations realm.

7.4.16 The Japanese case is far from exclusive with other pieces of research pointing to the effects of foreign firms on IR institutions, and the mediating impacts of local IR institutions on foreign subsidiary operations.

7.4.17 Royle (1998), for example, examined the UK and German activities of McDonalds. Royle's paper, and several others reviewed below, are contextualised on the belief that host state IR practices are difficult for MNEs to circumvent because they are so well entrenched in host societies. Juxtaposed to this is the desire for some foreign MNEs to impose their own IR systems, because this is part and parcel linked to their ability to transfer other elements of best practice to their overseas operations (see Japanese case above).

Box 7.6: Key components of single union deals signed by Japanese plants in Wales

- Flexibility clauses i.e. management right to deploy labour as it saw fit; requirement for employees to undertake tasks within their individual capabilities; removal of old demarcation problems caused by multi-union deals, and summarised in essentially single status terms and conditions.
- Communications: managerial commitment to greater levels of communication with employees and reciprocal mechanisms.
- Commitment to higher levels of consultation and in some cases moves towards company advisory, or company members boards with employee representation.
- Continuity of production requirement, i.e. binding or pendulum arbitration meant that industrial action was outwith signed agreements in the Welsh case.

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- 7.4.18 Royle suggested that McDonald's had had some scope to impose their own models because of weaknesses in regulation of the German codetermination system.
- 7.4.19 In a related vein, Schmitt (2003) (see also Schmitt & Sadowski, 2003), considered the extent to which FDI in Germany was working to change the German system of industrial democracy, with American and British firms importing more 'Anglo-Saxon' type IR practices into the host. However the research could find little evidence of this, and with foreign MNEs in the field of IR (i.e. co-determination, compliance with collective bargaining) facing strong pressures to accept and adapt to local norms.
- 7.4.20 Marginson and Meardi (2006) also showed the potential for foreign firms to transfer models of IR. For example, FDI might be a means of changing IR practices in the EU accession states with new investment providing an avenue for embedding the firm-level IR dimension of Europe's social model to the post-socialist accession states. However, Marginson and Meardi concluded that the prospects for a successful diffusion depended on factors such as the reasons for the FDI, its factor composition, and the nature of extant host country institutions.
- 7.4.21 Schnabel *et al* (2006) examined the decline in collective bargaining coverage in Britain and Germany and in a model revealed how similar sets of variables can explain the structure of collective bargaining in these two states, and with these variables including establishment size and age, foreign ownership, public sector affiliation and subsidiary status.
- 7.4.22 One concluding point from the above is that it is difficult to categorise what the IR impacts of FDI will be, with these impacts mediated by a large number of firm and location specific variables.
- 7.4.23 However, the ability of the foreign firm to transfer its approaches to labour relations may have ramifications for the extent to which they can actually transfer other things to the host nation such as knowledge and expertise.
- 7.4.24 Other research has considered how far FDI might lead to a process of deunionisation. This has been a popular theme in US research. Sanyal (1989) reported that foreign firms operating in the US tended to be as opposed to unionization as were their domestically-owned counterparts. However, others have tried to link the growth of the foreign-owned sector and the internationalisation of the US economy to changes in unionization levels.
- 7.4.25 For example, Baldwin (2003) examined how far the increasing openness of the US can be associated with falling unionization. Slaughter (2007) also examined the declining unionization rate in the US over a period when the domestic economy had become more open. Here Slaughter showed that trades unions

were facing pressures to accept employment reductions or lower pay settlements because of the increasing cross border activity of firms.

- 7.4.26 Slaughter developed a model using US manufacturing data that matches unionization rates, with variables measuring international engagement such as trade, transport costs and FDI. The results showed a strong relationship between falling unionization and numbers of inward FDI transactions. Slaughter showed that the interpretation is not straightforward with US subsidiaries of foreign firms typically having higher union penetration than their US counterparts. Rather the results might reflect the pressure placed on US firms by international capital mobility, with this mobility increasing labour-demand elasticities and changing relative bargaining powers.
- 7.4.27 Innovative IR practices may have an outworking in terms of better performance in foreign firms compared to their domestic counterparts who might feature more restrictive IR practices. Ultimately innovative IR practices may lead to longer term positive outcomes for host states.
- 7.4.28 However, there are questions on how far the quality of labour market institutions results in better quality economic outcomes for host nations. For example Kleiner and Ham (2002) examine the effects of labour market institutions and demonstrate the presence of trade-offs between higher levels of economic outcomes and the presence of more equity-producing labour market institutions. This research explored the relationship between unionization rates, strike proneness, and bargaining structure and how these effected FDI levels. These relationships were examined across OECD nations and US states, and with the results showing that higher levels of IR institutions were linked with lower FDI levels and slower economic growth for U.S. states.
- 7.4.29 Ham and Kleiner (2007) came to similar conclusions using OECD state data for the period 1985-2000 showing trade-offs between economic outcomes and greater equity and employee voice associated with 'deeper' labour market institutions.
- 7.4.30 Other research has also examined how far different IR institutions may act to influence inward investment levels, and FDI decisions. Leahy and Montagna (2000) examined the welfare results for a lesser developed state of utilizing union law as a means of attracting FDI. They demonstrated that while union law might deflect MNE locations, that unionisation represents a way that LDCs can extract rents from MNEs. Then they showed that there might be incentives for short term social dumping (banning unions in the short term) in order to gain higher future rents.
- 7.4.31 Cooke and Noble (1998) showed the impact of IR-type variables on US firm FDI decisions. Cooke (2001) in a later paper showed that both U.S. and European MNE FDI decision making could be strongly affected by location factors linked

to union penetration, collective bargaining institutions and government workplace regulations. Cooke demonstrated that MNEs from developed nations gave “substantial weight to differences in national IR systems in deciding how much to invest across alternative high-skill, high wage countries”. His evidence revealed that MNEs invested more in states characterized by higher skills levels, lower employment costs and lower state and collective bargaining constraints on the MNE’s ability to establish conditions of employment, or use a preferred set of HRM practices overseas.

7.4.32 Finally here, and linked to issues of the relative performance of foreign firms, is the issue of whether foreign-owned firms are less prone to strikes or linked IR problems. At the outset it is important to recognise that strike-proneness results from a series of factors, not least macro-economic conditions, and a number of industry and environment specific factors.

7.4.33 Foreign enterprises might suffer more IR problems because decision making may be undertaken far from the subsidiary local context, and with multinationals subject to economic pressures that are less well understood by local union officials. Moreover, foreign firms may suffer more problems where they fail to adapt to local conditions or attempt to impose their own systems in subsidiary conditions. At the same time foreign firms have typically been shown to pay more than their domestic counterparts, and be more strongly represented in faster growth sectors, and being more innovative in seeking solutions to labour unrest.

7.4.34 UK evidence is mixed. Gennard and Steuer (1971) reported less strike activity in foreign firms when allowing for structural differences between firms, but with Forsyth (1972) suggesting US firms in Scotland had worse strike records than domestic firms. Creigh and Makeham (1978) report in the UK case no statistically significant relationship between the proportion of an industry groups employment in foreign firms and either its stoppage frequency or stoppage incidence, and conclude that “there is no significant relationship between foreign ownership and strike activity”. Carmichael (1992) provided a further review of the UK evidence, but inevitably the difficulties of controlling for other factors causing strikes and IR problems make it very difficult to separate out any factors relating to ownership.

Box 7.7 IR effects of FDI, key findings and issues for Wales**Key findings**

- Foreign firms operate in a wide variety of social and institutional contexts, and the scope of their foreign operations might result in expertise relating to the best IR methods to use in different national contexts.
- In the UK there is evidence relating to domestic and foreign firms adopting the IR practices of innovative new foreign entrants
- The ability of foreign firms to use parent firm IR systems will depend on the nature of extant host country institutions.
- The extent to which a foreign firm can transfer parent firm IR approaches may impact the extent to which they can actually transfer knowledge and expertise.
- Innovative IR practices may have an outworking in terms of better performance in foreign firms compared to their domestic counterparts who might feature more restrictive IR practices.
- Research examining whether foreign firms are more prone to strikes, and whether the strength of IR institutions impacts inward FDI levels come to mixed conclusions.

Issues for Wales

- In terms of location marketing there is likely to be value in showing that Wales has offered MNEs the opportunity to transfer elements of parent company IR practice.
- Trades unions can potentially offer valuable support in attempts to market Wales as an industrial location.

7.5 HRM and operational management practice effects

7.5.1 Many of the contextual issues surrounding HRM and wider operational practice impacts are similar to those discussed under the IR heading. There is the possibility that a foreign firm through its scale and scope may have experience of a wide range of HRM and operational techniques and the employment of these techniques links to the higher performance of the firms in comparison to their domestic counterparts.

Box 7.8 HRM and operational management practice effects: key questions

- Do foreign firms use different operational and HRM policies compared to their domestic counterparts?
- Do operational and HRM policies found in foreign firms spill over to the domestic sector, and how far are practices pertinent in different industrial and societal contexts?
- Are there cases of spillovers in terms of operations and HRM policies?
- How far is adoption of parent company HRM and operational policies important in determining the performance of foreign subsidiaries?

7.5.2 Where MNEs attempt to employ common working conditions and practices across their global operations then they might act as a means of improving working and operational practices in the host state. Indeed MNEs are potentially the main vehicle through which HRM practices move across international boundaries.

7.5.3 Dunning (1993) shows that managers of MNE might be expected to have greater power and flexibility in negotiating work practices, employment conditions and HRM practices, and that MNEs may have special abilities to train and upgrade human resources; this may come in part because they have gained skills in cross border management. Dunning shows that the determinants of the nature of training include:

- Strategy towards foreign operations
- Nature of long term resource commitments
- Nature of activities
- Demands these place on human resources
- Availability and quality of local training facilities and educational infrastructure
- Role played by government in promoting training

7.5.4 Each of the above is in part country, industry and firm specific. However, training and HRM may be different in the MNE because they operate in different cultural environments, can then use a range of value systems, and training systems not available to domestic counterparts. Moreover, MNEs might be able impart knowledge gained in training staffs in other parts of the world. Moreover, MNEs

may gain economies of scope and scale in training and personnel management such that they can use more systematic and specialized programmes of support.

- 7.5.5 Dunning (1993) argues that MNEs can compare favourably with respect to working practices in affiliates. Dunning shows how such practices might reflect the culture of the parent firm; for example, Japanese firms have a team ethos, and with the firm taking a keen interest in the welfare of their staffs. Dunning showed that some practices were liked and others were not; included in the latter were strict timekeeping, attention to detail, and discouragement from socialising on the shop floor.
- 7.5.6 Something of the role of MNEs in encouraging a spillover and/or harmonisation in HR techniques is discussed by Claus (2003). This study explored similarities and differences in HRM practices across the EU. Claus argued that common factors in the EU model included the importance of consultation, the emergence of flexible working, the role of work and the employer in the life of employees. Claus shows that whilst cultural diversity is strong in the EU, that the influence of large MNEs might lead to greater levels of regional integration in HRM practice.
- 7.5.7 This 'movement' of HRM and operational practices is unlikely to be frictionless. It is factors that have caused friction in the process that have contextualised a great deal of research in the HRM literature. There are expected to be limits on how far practices employed in one nation can be transferred to another nation, or practices in one firm transferred to another. Again the lessons from Japanese investment in the UK are quite instructive in terms of potential and limits of transfer.
- 7.5.8 Many pieces of research across the UK have found that Japanese enterprises have established different working practices relating to recruitment, team working ethos, staff welfare, shop floor conditions, flexible working and job rotation, TQM and quality control (see Oliver and Wilkinson, 1992; Morris *et al.*, 1993; Munday *et al.*, 1995; see also Elger and Smith, 2005, or a recent review).
- 7.5.9 However, the 'transferred' practices are rarely a mirror image of practices employed in the respective parent companies.
- 7.5.10 Japanese firms coming to the UK came from an environment where employees were expected to identify closely with the firm, and work as part of a closely integrated team. Issues surrounding single status terms and conditions and team working tended to be looked on favourably by British managements and employees. However, other elements of the 'Japanese' system linked to strict timekeeping, limited socialisation on the shop floor were not accepted so readily (Oliver and Wilkinson, 1992; Dunning, 1993). In many cases the end

result was more of a hybrid system where elements of parent company practice were used in the host industry context (Morris *et al.*, 1993) but other practices depreciated.

- 7.5.11 There was some evidence in the 1980s and 1990s of new practices being taken up in the domestic sector (and other parts of the foreign sector). For example, Oliver and Wilkinson (1992) in their study of the *Japanisation of British Industry* showed that in terms of practices such as total quality control, flexible/team working, statistical quality control, quality circles and just-in-time production (each of which was increasingly used by Japanese subsidiaries at the time) that the same practices were increasingly being used (or were being planned to be used) by UK based firms.
- 7.5.12 Oliver and Wilkinson concluded, however, that practices were not always taken up successfully because they had not been integrated properly within more general manufacturing and HRM systems.
- 7.5.13 Perhaps the best evidence of spillovers is in terms of manufacturing organisation, where there has been domestic take-up of operational methods including just-in-time, and general systems emphasising an accelerated flow of materials through plants (Munday, 1992; Morris and Imrie, 1992). Moreover, the presence of the Japanese increased the visibility of a new type of buyer-supplier partnerships which resulted in something of a transformation of these practices in sectors such as engineering, automotive and electronics (Dunning, 1986).
- 7.5.14 This was characterised in part by a movement from exit type arms length relationships, to those characterised by closer communications, 'comakership' and voice.
- 7.5.15 Suppliers and subcontractors to Japanese plants were often in the vanguard of taking up and applying new techniques, but there is evidence of wider spillovers in this respect to firms not formally linked to Japanese transplants through buyer-supplier ties (Morris and Imrie, 1992). In practical terms, for the suppliers and subcontractors at least, take-up involved the adoption in the domestic sector of similar techniques for quality and operational control as their Japanese customers, and with some expectation that this needed to occur from the Japanese MNE standpoint. Uptake was connected to productivity improvements for suppliers (Munday, 1990). Indeed, there were some cases where the take-up of new systems was assisted by the physical presence of expatriate staff from the assembler in the domestic suppliers' plant. Morris *et al.* (1993) show for example in the Welsh case that:

"Suppliers had been obliged to take on board Japanese quality standards throughout their processes, and this had aided them in winning other business" and "suppliers perceived a genuine desire amongst Japanese plants to aid them in problem solving". (p.49-50)

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- 7.5.16 These types of effects were not unique to Wales or the UK but are illustrative of patterns of impact.
- 7.5.17 For example, Mako (2005) examined the effects of FDI on work organization in the Hungarian case, with special regard to the employees' role in task structuring in the post-socialist economy. Mako argues that FDI had a strong effect in terms of the diffusion of organizational innovations in labour processes such as team working ethos, total quality management, IT use and take up of international quality standards. Mako also argues that cutting edge managerial practices in foreign investors represent a benchmarking for domestic firms (see also Ferencikova, 2000).
- 7.5.18 More generally McCartney and Teague (1997) note that much of the focus on Ireland's economic miracle has been on macro-economic rather than firm level conditions. Their survey information of Irish firms provided evidence of innovations in both work organization and HRM activity, and they argue that these changes were strongly connected to economic openness, and the activities of multinational firms in the state.
- 7.5.19 HRM and general operational practices employed in the host state may actually have the characteristics of a hybrid form. This is because the MNE is unable to employ all its parent company policies because of local societal and environmental conditions. For example, Bjorkman *et al* (2008) examine MNEs operating in the US, Russia and Finland, and show that there were large differences in HRM practices utilised. Key factors determining practices that could or would be used included the status of subsidiary HR department and the extent to which the subsidiary was involved in knowledge transfer with other parts of the MNE.
- 7.5.20 Rovai (2005) also stresses the role of 'environment-related variables' on the HRM methods used in Pacific Rim states by western MNEs. This resulted in on-the-ground practices being a hybrid of parent firm practice and local context.
- 7.5.21 In a similar vein Myloni *et al* (2004) demonstrate how factors originating from the cultural and institutional framework of the host country affect the transfer of HRM techniques. In a study of MNE involvement in Greece they show that foreign subsidiaries had adapted their HRM policies and practices, but with some practices becoming more localized than others due to regulatory constraints and cultural conditions.
- 7.5.22 Smith and Elger (2007) describe the role of Japanese MNEs in the restructuring of work organization and IR in Britain, Germany and France (states with historically different work organization "systems"). They show that the operations and influence of Japanese MNEs has been mediated by extant national institutional configurations. Smith and Elger also reveal that whilst Japanese MNEs had made a direct or indirect contribution to changes in work

and employment relations, these had not worked to produce a simple convergence to a new production paradigm.

- 7.5.23 This process of hybridization is very important. Where MNEs fail completely to impose their HRM and general operational policies then this might have more general impacts on the host state, and on the MNE performance. Bjorkman and Budhwar (2007), for example, examined Indian subsidiaries of foreign firms to examine the association between HRM practices and organizational performance. Their study showed that the introduction of HRM practices from the foreign parent to the subsidiary was negatively associated with performance, but that local adoption of HRM methods was positively associated with foreign firms performance in the Indian case. This study provided evidence of the importance of the localisation of practices in gaining performance improvements. Bjorkman and Lervik (2007) show how transfer of HR techniques is a social process where the MNE control mechanisms, features of subsidiary HR systems, and the social ties between foreign subsidiary and the parent organization will influence the outcome as methods are transferred.
- 7.5.24 How well a foreign subsidiary can develop human resources in the host economy will likely influence the extent to which these same subsidiaries and employees can absorb new knowledge from the parent company.
- 7.5.25 Indeed Minbaeva (2005) examines the impact of HRM practices adopted on the transfer of knowledge within MNEs. She suggests the use of HR practices that impact absorptive capacity of knowledge receivers and provide an organizational learning environment were associated with the extent that parent firms were able to transfer knowledge to a foreign subsidiary. Examining information from 92 subsidiaries of Danish MNEs she found that practices relating to staffing, training, promotion, compensation and appraisal had a strong effect on knowledge transfer, but systems emphasizing corporate socialization and flexibility had less of an impact.
- 7.5.26 The process of hybridization is also important in a developmental sense because the MNE subsidiary might be a pathfinder in terms of showing which elements of home country HRM and operational practices might actually be employable under specific host nation conditions. In the 1980s, for example, there was something of a rush to employ Japanese management, accounting, and organizational practices without fully recognizing that selected practices were very much grounded in foreign country environmental conditions.
- 7.5.27 A further issue is how far the take-up of HRM and other managerial/operational techniques actually improves firm performance. While studies have examined the association between the take-up of parent company methods and subsidiary performance across different states, very few studies have examined the spillover impacts to the domestic sector resulting from take up of new

techniques. Once again empirically separating out managerial and operational practices from the wide range of variables that impact performance is problematic.

7.5.28 Bae *et al* (2003) examined whether take-up of different HRM systems works to improve host performance. The subject matter here was the adoption of US style high performance work systems (HPWS) by Korean, Taiwanese, Singaporean and Thailand firms. The research revealed that the US systems worked well even under very different local conditions, and that the use of HPWS techniques in locally owned firms had a marginally stronger effect on financial performance than when the same techniques were employed in foreign-owned subsidiaries. However, one might argue here on the extent to which the take-up of the ideas by the domestic firms was actually due to FDI, or via other learning mechanisms such as managerial teams being trained overseas, or general observation of foreign practices employed in a third country.

Policy issues

7.5.29 The review shows that in the case of Wales, some of the most important spillovers resulting from take-up of observed operational and IR systems are also the most difficult to measure. However, there are a few key issues for regional policymaking in regard to this part of the impacts review.

7.5.30 First, the ability for foreign firms in Wales to transfer knowledge and technology to their local subsidiaries will partly be a function of how far they have been able to institute parent company policies in terms of HRM and manufacturing practice. There has been very little research in Wales on how far problems in this respect have inhibited the scope of foreign operations in the region. However, there is a challenge for those marketing Wales as a location to carefully explain to prospective investors the extent to which parent practices might be employed in the region, and to advise where modification is required.

7.5.31 Second, the review demonstrates that it is unlikely foreign firms can employ all parent company practices in the different societal and regulatory conditions present in the region. There may be a danger here that policymakers in encouraging indigenous firms to learn from the foreign sector, do not take enough account of how far managerial and operational practices have to be modified across space. Then development agencies may have a role as a kind of antennae revealing to the indigenous sector what types of practices are most usefully employed under domestic conditions.

7.5.32 Finally, the review of IR practice and institutions reveals that the importance of these as a location determinant should not be underestimated. 'Regime shopping' in terms of the existence of favourable IR conditions is likely to be as important as consideration of variables such as taxes and incentives. In

competing for inward investment on a European playing field the strong recent record of Wales in terms of industrial disputes and resolution, and the quality of its IR institutions needs to be communicated to prospective incoming firms.

Box 7.9 HRM and operational management practice effects of FDI, key findings and issues for Wales

Key findings

- Where foreign firms employ common working conditions and practices across their subsidiaries they may be a means of improving working and operational practices in the host economy.
- Firm internationalisation is a key portal for HRM practices moving across international boundaries. The influence of large MNEs might lead to greater levels of regional integration in HRM practice.
- Research highlights limits on the extent to which practices employed in one nation can be transferred to another nation, or practices in one firm transferred to another.
- The Japanese case in the UK is illustrative of where a hybrid system was developed utilising selected elements of parent company practice.
- Factors determining parent company practices used include the status of subsidiary HR department and the extent to which the subsidiary was involved in knowledge transfer with other parts of the MNE.
- The effectiveness with which human assets are developed in subsidiaries is expected to have ramifications for how far knowledge can be transferred from the parent firm to the subsidiary.

Issues for Wales

- There has been limited research in the region examining take-up of parent company operational methods in subsidiaries and how this impacts subsidiary performance
- In marketing Wales as an industry location, it is useful to indicate to investors how far they might have the flexibility to employ parent company operational practices.
- Regional policy makers may have a role in highlighting the types of HRM and operational practices that are most usefully employed under domestic conditions.

7.6 Summary of impacts of FDI

- 7.6.1 Table 7.2 aims to provide an overview of issues and findings relating to the impacts of FDI (Stage 2 of this report). More detail on each of these impact categories can be found in chapters 5, 6 and 7.

Table 7.2: Summary of impacts of FDI

Theoretical (section 5.4)
Impacts expected to vary according to: • Extent and nature of foreign firm specific advantages • Entry mode and FDI activity type, markets served, home and host country policy • Host economy characteristics, and the size of the technology gap between foreign and domestic firms
Superior performance in the foreign-owned sector? (section 5.6)
• Foreign-owned firms characterised by relatively higher earnings and productivity • But problems in making accurate performance comparisons; 'foreign-ness' connected with a small part of the gap, and with basic multinationality a more important factor • Lower profitability in the foreign sector may be indicative of transfer pricing activities
General productivity spillovers (section 6.2)
• Studies have questioned very existence of productivity spillovers; review found mixed results (some positive, others negative, and some with insignificant results). Study results are sensitive to specification, the measure of foreign presence used etc • There are difficulties in treating the foreign presence as homogenous; studies reveal that different types FDI have different impacts in terms of productivity spillovers • UK results have generally found evidence of positive productivity spillovers Determinants of scale and nature of spillovers shown to be linked to: • Motivation for FDI, and host economy characteristics • Technical capabilities of domestic firms – ability to benefit from foreign industry presence • Labour mobility issues (productivity in domestic firms shown to be positively effected when senior staff have previously worked within foreign sector) • Some evidence of spillovers working both ways (from foreign to domestic, and from domestic to foreign) within R&D intensive sectors
Competition effects (section 6.3)
• Problems identifying the existence of competitive effects • Research concludes that FDI has a negative effect on domestic sector profitability • Negative competitive effects shown to outweigh positive spillovers in many cases • Competitive effects have been found to exist within the foreign-owned sector, and that these effects vary by industry activity and ownership • It is difficult to identify competitive effects at the regional scale
Trade effects (section 6.4)
• MNEs are considered to be more trade intensive than domestic firms (more import and export intensive); trade intensity depends on industry and firm characteristics • Evidence that trade behaviour changes over time, for example, increases in local sourcing (and a consequent reduction in importing) over time (link to buyer-supplier impacts below) • FDI can work to increase the exporting behaviour of domestic firms (export spillovers)
Buyer-supplier and value-chain effects. (section 6.5)
• Purchasing linkages are one transmission mechanism for the generation of productivity spillovers. The supply chain is an important route for knowledge transfer and increasing standards of products amongst domestic suppliers • Impacts are affected by the type of activity and purchasing requirements of the foreign owned sector. Scale means foreign firms may exert a 'squeeze' on domestic firm margins. Where the foreign firm purchases from domestic firms, the domestic sector impact on profitability and productivity is unclear • Where domestic firms purchase from foreign firms, they have been shown to benefit from scale and scope efficiencies offered by generally larger firms • Foreign firms generally found to have lower levels of local/regional purchasing linkages compared with domestic firms, although levels may change over time • Determinants of linkages have been found to be age (time), size, sector and entry mode
Employment effects (section 7.2)
• Greenfield entry mode has been found to have a relatively greater positive effect whilst

M&As found to have more negative effects • Impacts depend on type of FDI and host economy characteristics e.g. subsidiaries with higher value-added characteristics found to have more positive employment effects • Limited country of ownership specific employment effects identified in research, but these are difficult to separate from other variables • Competitive effects may lead to negative domestic sector employment effects as a result of FDI. In addition the increase in FDI, may increase wages and then reduce employment • Indirect/multiplier effects vary by sector; foreign-owned sector employment multipliers found to be lower than those of the domestic sector
Labour market effects (section 7.3)
• Foreign firms pay higher wages than domestic firms in similar sectors; the wage gap is linked to higher productivity, skills, greater worker effort, sector and size; once size is controlled for much of the wage gap shown to disappear • FDI may take around 2 years to have its full impact on the labour market • Increasing FDI can work to increase domestic wage inequalities • There is a possibility of wage spillovers to domestic sector (as local firms take-up new technologies etc, demand for skilled labour may increase, pushing up wages). Labour market impacts may vary by type of domestic firm, there is also the possibility of negative wage spillovers due to domestic sector crowding-out
Industrial relations effects (section 7.4)
• Impacts evident where foreign firm IR practices are superior to, and where trade unions are receptive to the adoption of new practices • Foreign firms may innovate in terms of IR practices which may then be copied by other foreign firms or domestic industries • Increasing FDI and growth in internationalisation has been connected to falling unionisation. Higher levels of IR institutions has been linked to lower levels of FDI
HRM and operational management practice effects (section 7.5)
• Foreign firms may have access to a wide range of HRM and operational management techniques (including working practices, employment conditions and training) • These advantages, if passed on to the domestic industry, may lead to productivity gains • Some limits to the degree of transferability of practices to local environments • Much UK research has focussed on Japanese firms, who are found to have established innovative working practices amongst local subsidiaries, examples have included JIT and new buyer-supplier partnerships, and hybrid HRM practices • HRM practices can be a transmission mechanism for knowledge transfer

8 Stage 3 Review: Public support for foreign direct investment

8.1 Introduction to Stage 3 review

- 8.1.1 The third stage of this review focuses on the impact and cost effectiveness of public support for FDI.
- 8.1.2 A very wide range of policy interventions have been used to both attract, secure and embed foreign investors in host economies around the world. Methods of intervention to support inward investors have included capital and employment subsidies, fiscally based assistance, assistance in finding markets, and in finding suppliers of goods and services, assistance with training, and help with built and other infrastructure.
- 8.1.3 Intervention should also be seen to include the costs associated with marketing locations overseas, and informing potential inward investors of opportunities in the reference host nation. There has been extensive debate over the justification for public intervention to support foreign firms (see Harris and Li, 2005; UKTI, 2006). This debate has been complicated because of the very complexity of the impacts associated with foreign capital, and the precise nature of market failure associated with the operations of MNEs. This complexity also makes it very difficult to place inward investment support into a cost benefit framework with, for example, real problems in tracing the whole life of the benefits (and costs).
- 8.1.4 Recent research sponsored by UKTI (2006) has suggested that for every £1m of UKTI costs that between 7-12 projects have been successfully influenced either in terms of the decision to invest in the UK itself or in terms of changing the nature of extant or new projects such that their potential impacts are improved. Interestingly the UKTI sponsored research suggests that carefully targeted public support based on given project characteristics could improve the ratio of benefits to costs significantly. The UKTI study provides important context for the following review.
- 8.1.5 The consideration of public support and cost effectiveness should also not be divorced from the findings of the two earlier parts of the review.
- 8.1.6 For example, in the review of FDI determinants we have attempted to examine the role of a series of variables on the FDI decision, and amongst these are various promotional and support activities provided to such investors. Similarly, cases of public support are often based on the domestic economy effects of FDI and these issues were considered in the Stage 2 review.

8.1.7 In moving to consider public support to inward investors we first seek in this section to address a series of contextual questions as follows:

- What is the underlying rationale for government intervention to support foreign firms? A key issue here relates to the existence or otherwise of market failure.
- How can we classify the tools used to attract FDI, and what are the welfare implications of intervention, and the main questions that need to be addressed in designing these interventions.

8.1.8 The review in Section 8 then considers the specific nature of public support in the UK and its regions and considers:

- What are the tools used to support FDI in the UK and its regions?
- Are there differences in the nature of intervention and institutional support towards inward investment across the UK regions, and to what extent do some regions have greater access to public resources than others?
- How do the supports used in the UK case compare with those offered in other states in Europe and around the world?

8.1.9 The review in Section 9 then turns to examine the efficiency and cost effectiveness of different types of supports and seeks to draw conclusions of direct relevance to Wales. Ultimately the majority of the inward investment support mechanisms in terms, for example, of financial assistance, are also available to domestic firms such that it is necessary to review evidence relating to general policy evaluations and then pick out material relating specifically to cases where conclusions are pertinent to a discussion of inward investment. Then Section 9 of the review:

- Demonstrates how far public supports and incentives for FDI are shown to be a location determinant, examining results from UK and OECD studies.
- Investigates literature that has examined the general effects of different types of intervention, and at different spatial levels, and addresses issues of wastefulness, and bidding wars.
- Reviews evaluations of UK prior support frameworks and interventions, focusing on issues of cost effectiveness and highlighting cases of best practice in line with specific cases of market failure.
- Relates the findings from the different parts of the Stage 3 review to the Welsh context.

8.1.10 Section 10 draws the report to a close and provides conclusions from the Stage 3 review, and then highlights some potential directions for future research on FDI in the Welsh context following from this report.

8.2 What is the rationale for intervention to support FDI?

8.2.1 Ignoring the specific nature of intervention to assist foreign firms, it is necessary to consider why government should intervene. The core reasons for a host nation to offer services or incentives to foreign investors links to the presence

of market failures or to promote specific industry or regional policies that themselves seek to deal with market failures.

- 8.2.2 One of the main sources of market failure is associated with the expected externalities from FDI which might include technological gains to domestic firms, or trading gains. Consequently without intervention these gains may be below the social optimum. Indeed Blomstrom and Kokku (2003) argued that in cases where conditions for foreign owned firms are different from domestic firms it can be easier to justify discriminatory FDI incentives because of market failure peculiar to MNE production.
- 8.2.3 For example, the MNE through its size and scale may be more efficient in reducing host nation market failure perhaps through decreasing industry concentration in the host, or communicating new technologies and methods. Then markets may fail to reflect the social benefits of FDI. Moreover, MNEs may ignore benefits that would be associated with their overseas investment decision, such as knowledge spillovers and perhaps under-estimate benefits to themselves in terms of reduced costs and improved competitiveness. Ultimately, this leads to lower levels of overseas investment and reduced welfare.
- 8.2.4 Clearly, much of this contextualises the interest in whether spillovers from FDI actually occur. Blomstrom and Kokku (2003) make the point that practical policy making rarely attempts to link the size of subsidies to the expected spillover impacts of FDI.
- 8.2.5 The review in Stage 2 revealed that spillover impacts from FDI do vary according to type of FDI, location, industry and type of technology being used. Historically, however, incentives provided to foreign firms are fairly uniform in scope, and only more recently have incentives (and promotion activities) been centred on selected sectors of activity (see, for example, in the Irish case, Lenihan and Hart (2006)). Critically, several authors also make the point that spillover potential will also be associated by the size of the technology gap between domestic and foreign firms.
- 8.2.6 UKTI (2006) concluded that the extent of spillovers “was also found to depend on proximity to domestic firms with sufficient absorptive capacity to be able to benefit from such potential sources of knowledge” p.46. Then as Blomstrom and Kokku (2003) and others have argued, there is plenty of empirical evidence to suggest that spillover impacts are far from automatic. Consequently while there is some support for the private benefits of FDI being less than the social benefits (this providing a ground for incentives), there is a problem of uncertainty regarding when, where and how spillovers occur.
- 8.2.7 Blomstrom and Kokku concluded that there is a danger that subsidies to inward investors may be too large, and with the associated risk that selected

incentives may lead to rent seeking behaviour (see also McAleese and Counahan, 1979) as firms shift resources to take short term advantage of various incentives sets.

- 8.2.8 Incentives and general host promotion activity might also work to deal with market failures associated with risk and uncertainty. Information about market and production conditions in a potential host might not be gained without significant search costs. Moreover, a foreign firm through poor information may apply incorrect costs of capital to projects. There may also be issues relating to the additional burdens associated with being the first foreign firm to locate in a given area. For example, in the UK, the decision of Nissan in the 1980s to produce automobiles in the North East, was seen by some as showing that this location had almost 'passed muster', and with this investment linked with a series of further inward investment successes for the North East. Similar arguments have been applied in the Welsh case in terms of early success in attracting Japanese FDI (Munday, 1990). Then incentives and site promotion may lead to a more efficient distribution of FDI (and investment in general).
- 8.2.9 In relation to the above, organisations such as IBW (and the Welsh Development Agency (WDA) prior to this) provided general location information to inward investors through a series of routes.
- 8.2.10 It would be expensive for individual inward investors to generate this information themselves and with the MNEs duplicating the activity of one another. In consequence the lack of provision of public goods is a strong reason for intervention.
- 8.2.11 Associated with this type intervention is the fact that development agencies and the like can perform a role as a kind of international antennae and network coordinator helping foreign firms access specific opportunities. Clearly, the role of development agencies in these respects is equally important to domestic firms seeking overseas opportunities. UKTI (2006) suggested that while these sources of market failure are difficult to assess, that the theory and the evidence reveals that the search costs of trade and investment would be higher in the absence of measures to provide information, and strengthen the social networks that support trade and investment.
- 8.2.12 UKTI (2006) concluded that barriers to inward investment into the UK; "are less frequently experienced than barriers to selling overseas, but are nevertheless critical to a significant minority of inward investors. Understanding legal requirements, recruiting staff, obtaining visas for overseas staff, and finding suitable local suppliers are all reported as having presented barriers of critical importance to some investors"p.64.
- 8.2.13 FDI may also be encouraged to promote regional or sectoral development policies (for a review of the rationale for UK regional policy, see Armstrong and

Taylor, 1993). In the UK case incentives to locate in selected areas are generally available to both domestic and foreign firms.

8.3 FDI incentives types and welfare issues

- 8.3.1 It is accepted that the most important incentive a national or regional government can accord to inward investors is to provide a stable and predictable macro-economic environment, efficient access to factor resources, and a non-discriminatory environment for foreign firms. FDI incentives are defined by the OECD as “measures designed to influence the size, location or industry of an FDI investment project by affecting its relative cost or by altering the risks attached to it through inducements that are not available to comparable domestic investors”.
- 8.3.2 In the UK the vast majority of incentives available to foreign investors are also available to domestic firms. As such a ‘rules-based’ approach is not in evidence, but with growing evidence of specific approaches i.e. tailored incentives to specific projects (see Phelps and Tewdwr Jones, 2000).
- 8.3.3 The tools that can be used to influence the location of foreign investment are diverse. It is important to recognise that tools can be used to influence genuinely new investment but also to encourage existing investors to remain in a location and expand or re-invest; selected tools may also be used to influence merger and acquisition activity. Core tools might be classified under two headings:
- Regulatory FDI incentives i.e. derogations from national or sub-national rules and regulations (often in relation to targeted strategies);
 - Financial FDI incentives (i.e. infrastructure and investment subsidies, job training subsidies; relocation or expatriate support; administrative assistance, wage subsidies, tax based incentives).
- 8.3.4 OECD (2003) also drew a distinction between different types of competition for FDI i.e.
- Targeted competition (i.e. outbidding with a specific set of incentives for a discrete FDI project)
 - Regime competition (an overall FDI incentives set with regard to those of competitors, and not targeted on a specific investment project).
- 8.3.5 OECD (2003) suggested that regime competition is more prominent than more targeted policies. Given this any tools used to attract FDI should not be divorced from more general frameworks to influence the behaviour of multinational firms. These might be summarised in the table below.

Table 8.1: Host policies towards FDI a summary

Policies based on entry conditions	▪ Ownership constraints ▪ Sectoral constraints ▪ Market constraints ▪ Location conditions
Policies defining operating requirements	▪ Local purchasing requirements ▪ Value added rules ▪ Exporting requirements ▪ Capital and profit repatriation conditions
Policies on capital exit	▪ Organised exit following technological transfer

8.3.6 Clearly, the UK is relatively open towards FDI, and the contemporary environment is one of more liberal conditions for FDI with, for example, large states such as China and India removing elements of regulation surrounding inward investment. Even so in some locations there continue to be constraints on investment in certain sectors and markets (i.e. see US defence industry and Exon-Florio amendment). Furthermore in the EU there have been waves of activity centring on increasing the local purchasing propensities of inwardly investment firms (in the context of anti-dumping enquiries for example) and developed states have varying rules regarding profit repatriation linked to taxation agreements.

8.3.7 Common incentives in the fiscal category include reduced direct corporate taxation; incentives for capital formation (special investment allowances; investment tax credits; tax credits against reinvested profits); reduced impediments to cross border operations (withholding tax reductions of repatriated profits; reduced import taxes and customs dues; and favourable tax treatment of expatriate workers).

8.3.8 Grants and subsidies are more common in developed states and are used to promote growth in disadvantaged areas, and with incentives often justified in terms of employment creation or safeguards, and with the further hope that incoming jobs will be relatively well paid, skilled, and with the grants and subsidies used to attempt to bring new technology to these areas. We provide a review of the various types of assistance available in a selection of states later in this section. This reveals that many states offer similar packages in terms of extent and type. In consequence several authors have picked up on the trends towards wasteful bidding wars for projects.

8.3.9 Charlton (2003) provided a good contemporary review of 'bidding war' cases throughout the globe.

8.3.10 Then an incentive may have the impact of influencing the decision of the inward investor, but may have a series of unintended consequences in terms of domestic and then international welfare.

8.3.11 Where inter-state competition causes one state to improve the quality and amounts of investment inflows using more efficient incentives then there may be a positive impact on the welfare of the host state. However, there is also a

danger that an intensely competitive bidding processes, particularly for landmark projects, may lead to the use of more inefficient incentive sets, or incentive sets that actually lead to negative net benefits. This then causes domestic welfare to fall.

8.3.12 At an international level welfare changes when a domestic incentive set changes the global distribution of FDI. If this were to mean projects end up in more profitable locations then there is a welfare increase. Conversely, if a bidding war between states leads to firms relocating un-necessarily, or staying in sub-optimal locations, then there is a danger of waste and a fall in global welfare. If inter-state (or intra state) competition can be likened to a game, then there might be value in states or regions cooperating to reduce the incentives to some minimum.

8.3.13 Unfortunately there is strong incentive for one state or region to increase the resources targeted on FDI because it could gain much if others do not react. When all react in the same way there is a danger of a 'race to the bottom'. Charlton (2003) provided a useful framework for understanding the consequences of spatial competition to attract mobile investment.

Figure 8.1 Bidding wars for FDI?

Investment poaching Domestic welfare gain? International welfare loss?	Healthy competition Domestic welfare gain? International welfare gain?
Beggar thy neighbour Domestic welfare loss? International welfare loss?	Winner's curse Domestic welfare loss? International welfare gain?

Source: Charlton, 2003

8.3.14 In the top left hand corner is the scenario where a domestic incentives set works to attract a firm from a location where it was naturally more efficient. This can be understood at an intra-state level as well. For example, where firms are encouraged to move out of the core to an assisted area in the periphery by grants and subsidies, then it may not be able to gain access to the necessary skills, or infrastructure to support its activities. At a global level the result may then be no net employment creation, as the project is less efficient than it should be. Also there is the danger here that the incentives being offered in a competitive environment actually change firm behaviour such that they actually become more footloose, and adopt a functional division of labour that is designed to take advantage of incentives as well as differences in factor costs, or engage in rent seeking behaviour.

8.3.15 In the bottom left corner is a situation where the provision of incentives leads to waste at domestic and international level. This could mean that the host nation uses a set of incentives whose costs are greater than benefits in the domestic economy, and perhaps attracts firms operations that would be more profitable

elsewhere. Unfortunately, it is difficult to estimate the full sets of domestic costs and benefits associated with incentive packages until after the event, as this in part rests on the performance of the inwardly investing firm.

8.3.16 In the bottom right corner is a winner's curse situation that can be common in many auction situations. Here the state that wins a bidding war, based on levels of incentives, may have been too optimistic about the value of the FDI to the domestic economy. Consequently the FDI may now be in the most appropriate location but the domestic state has paid too much for it to be there. Note that in this outcome the government's informational uncertainty is also important, otherwise the most efficient outcome would always be achieved.

8.3.17 An outright positive scenario is where the state succeeds in attracting FDI that improves domestic efficiency and then also leads to the FDI being in the best possible location. Here incentive packages are then set at an optimum level to lever maximum benefits from the foreign firm.

8.3.18 As hinted at above placing individual FDI projects into these boxes is extremely difficult. However, the understanding of the potential for problems is important for policymakers. The potential problems are one of the contexts for the OECD (2003) guidance on the use of FDI incentives which highlights criteria for when FDI incentives can be classified as wasteful i.e:

- Ineffectiveness; i.e. no benefits to host economy given costs of the incentives
- Inefficiency; authorities fail to maximise the benefits and minimise the costs of incentives;
- Opportunity costs; resources used to attract FDI might have been employed elsewhere more profitably even when they are effective and efficient in their primary aim;
- Deadweight loss; where outcomes from the use of incentives would have occurred anyway;
- Where incentives work to trigger bidding competitions.

8.3.19 OECD then summarise the issues that policymakers should consider before employing incentives. These are summarised in the boxed section below:

Box 8.1 OECD Checklist for FDI Incentive Policies

Q1: Are FDI incentives an appropriate tool in the situation under consideration (compared to more general policies to improve the business environment)

Q2: Are linkages between the enabling environment and the incentives well understood? (i.e. targeting FDI for special attention may damage the domestic business environment)

Q3: Are there clear objectives and criteria for offering FDI incentives?

Q4: At what level are objectives set, and criteria established?

Q5: In states with multiple jurisdictions how does one prevent local incentives from cancelling out one another?

Q6: Are the linkages between FDI attraction and other policy objectives clear?

Q7: Are impacts on local business of offering FDI preferential assistance well understood?

Q8 Are FDI incentives offered that do not reflect the degree of selectiveness of the policy goals they are intended to support?

Q9 Is sufficient attention given to maximising effectiveness and minimising long run costs?

Q10: Are programmes being put in place in the absence of a realistic assessment of the resources needed to manage and monitor them?

Q11: Is the time profile of incentives correct? (i.e. might frontloading incentives encourage rent seeking)

Q12: Does imposition of spending limits guard against wastefulness?

Q13: Are there procedures in place to deal with large projects that exceed the normal competencies of bodies?

Q14: What is the maximum duration of the incentives?

Q15-18 Are there transparency and adequate evaluation frameworks.

8.4 FDI Support in the UK and its Regions: A Summary

- 8.4.1 As competition for mobile investment has increased the marketing and coordination efforts of states attempting to attract inward investment have been increasingly concentrated in investment promotion agencies (IPAs). Within the UK a network exists bringing together the national 'agency' for FDI, UK Trade and Investment, with regional partners based in the regional development agencies of England, and the devolved administrations of Scotland, Northern Ireland and Wales. This is accomplished through the coordination of the activities of public sector and private sector partners to promote "UK plc". UK Trade and Investment's primary objectives are to attract, retain and add value to UK investment.
- 8.4.2 A number of tools are available to assist FDI in the UK. Some government backed initiatives are supplemented by European Union schemes, albeit with the principal of subsidiarity overriding (so that support is exercised by the lowest level of authority possible, usually regional bodies).
- 8.4.3 Financial incentives for foreign investors in the UK include grants and subsidies for capital expenditure projects. Applications for discretionary grants may be made by enterprises needing financial aid to locate, or expand, in Assisted Areas (these areas being based on the map drawn up and agreed with the European Commission and effective from December 20, 2006 to December 31, 2013). These capital expenditure grants are distributed under the Selective Finance for Investment (SFI) scheme in England; the Regional Selective Assistance schemes in Scotland and Wales; and the Selective Financial Assistance Scheme in Northern Ireland.
- 8.4.4 Additionally, it is important to recognise that the regions of England and the devolved administrations of Scotland, Northern Ireland and Wales offer support

schemes to address strategic concerns in their localities. It is also necessary to recognise that differences in amounts of public resources available, or accessible, to support inward investment activities across the UK are largely governed by the coverage of assisted areas prevailing across the regions.

- 8.4.5 Discretionary regional assistance grants for capital expenditure projects are available in the assisted areas of the UK to enterprises looking to locate or expand their business. This means that areas designated as Tier 1 (West Wales and the Welsh Valleys, South Yorkshire, Cornwall, Merseyside, and Northern Ireland) and Tier 2, are able to offer greater incentives than elsewhere in the UK. Monies to be granted are negotiated for each individual case and are administered at the regional level. Grants of around 10 to 20 % of a project's total eligible capital expenditure are available, starting at £10,000 and with no maximum amount fixed.
- 8.4.6 In addition assistance can be obtained through the EU Structural Funds available from 2007 to 2013 for enterprises matching the convergence, cooperation, competitiveness and employment agendas of the government. The former Objective 1 areas of West Wales and the Welsh Valleys, Cornwall, the Isles of Scilly, South Yorkshire, and Merseyside qualify for highest levels of convergence funding. However, it is difficult to channel this type of funding directly to foreign-owned firms, although these monies can be used to improve elements of the regional infrastructure and skills supply side that can benefit overseas firms.
- 8.4.7 The UK does not discriminate between indigenous and foreign individuals in the formation and operation of private companies (and, therefore, regulatory FDI incentives are generally not that relevant in the UK). The vast majority of incentives available to foreign investors are also available to domestic firms.
- 8.4.8 Tools to facilitate R&D activities and support innovation in the UK are numerous, reflecting the targeting of resources at attracting high-value, hi-tech companies, in knowledge-driven industries.
- 8.4.9 Grants schemes for innovation (such as the SMART Cymru, Scotland, and Northern Ireland schemes, along with GRAND in England) operate for SMEs. Inward investors can apply for European Innovation Grants particularly in partnership arrangements with other European based organisations. The UK government works to build enterprise links with research institutions, striving to improve university relationships with business through collaborative working and Knowledge Transfer Networks (where financial support is made available to enterprises that have the capability to "establish or enhance" networks). R&D tax credits are offered in the UK as part of an assortment of fiscal tools to support FDI.

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- 8.4.10 As well as promoting university/ business networks, the UK government provides subsidy funding for specialist skills training programmes to develop the workforce. Such programmes, which are delivered by the regional governmental agencies, can: provide a training adviser; undertake detailed analysis of the training requirements of an individual business; help to source an appropriate training provider; provide information on subsidised training programmes; identify government funding where available to support specific training programmes. Subsidised programmes for training include: The National Skills Academy (employer-led sector specific network of centres of excellence); Skills for Business network (made up of the 25 Sector Skills Councils-independent employer-led organisations supporting key sectors); Investors in People (national quality standard); Learndirect (on-line learning centres); and apprenticeships (to build skills long-term). Direct financial support packages are available to businesses with specific training needs. Such funding is typically dependent on criteria such as the size and location of the business applicant, its activity and sector.
- 8.4.11 The UK has in place an extensive network of double taxation treaties with overseas nations to ensure that the earnings of foreign investors in the UK are only taxed once. Relatively high tax allowances are complemented by relatively low corporate tax rates (with a headline rate of 28% introduced in April 2008, the lowest in any G7 economy), and competitive personal tax rates.
- 8.4.12 In addition to the financial tools used in support of FDI in the UK, the investment promotion agencies of the nation (UK Trade and Investment and its regional partners) operate other services to attract, maintain and expand investment by foreign enterprises. The role of marketing the UK overseas as a location for investment originates from initial awareness-raising activities. As well as its London headquarters, UKTI have staff located in the principal markets from which FDI is sourced.
- 8.4.13 Similarly, the regional partners run offices abroad to market their areas: Scottish Development International, for example, having staff based in a number of countries that include China, Korea, Japan, Singapore, Taiwan, the United States, Canada, Russia, Germany and France. This network of offices is a key component in helping inform potential enterprises of the opportunities existing in the UK, and creating interest.
- 8.4.14 The marketing activities carried out by the agencies encompass seminars, trade missions (Welsh Deputy First Minister Ieuan Wyn Jones led a business delegation to India in November 2007 as part of the on-going programme of missions organised by International Business Wales), as well as attendance at international trade fairs (such as representation at the world's largest information technology exhibition, CeBit, held annually in Hanover, Germany). Furthermore, the agencies help create interest in the UK by advertising events

such as the Global Financial Services Conference in Edinburgh, and the British International Motor Show in London.

8.4.15 A further tool at the disposal of the UK IPAs is the provision of introductions to a network of contacts to help investors efficiently integrate into the national economy. These include contacts to sector networks and trade associations (such as The Society of British Aerospace Companies, and the Industry Forum of the Society of Motor Manufacturers and Traders) whose purpose is to facilitate innovation and competitiveness, as well as providing regulatory services in technical standards and accreditation. Contacts in universities, local development agencies, centres of excellence (e.g. the Technium Wales network) and potential collaborative partnerships can also be arranged (typically with dedicated case officers to handle individual investor's specific needs).

8.4.16 Bespoke information regarding market conditions and potential suppliers is also made available to investors, as are more general details on company formation, labour legislation, financial incentives, transport, utilities and regulatory issues. Real estate guidance, illustrating commercial property options and strategic sites, may also include organised site visits and fact-finding missions with guidance from relevant regional agency representatives. Practical support is provided via help and guidance for expatriate workers and their families in finding homes, schools and jobs for partners.

8.4.17 Aftercare services are operated by the IPAs in the UK to help investors embed in the economy. Typically these involve regular contact to ascertain progress, identify any concerns the inward investor may have, and ideally help plan expansion of the investor and its workforce in the UK.

8.5 FDI Supports in other States

8.5.1 How does the type of support offered in the UK compare to what is available in other states? Here we provide a summary of the types of support offered in a selection of states, some of which are core competitor locations in the EU. The choice of states shows a mixture of those that have both been successful in attracting FDI in historical terms (e.g. France, Germany and the US), those that have been recently successful in the Accession states (Poland and the Czech republic), together with states that are known to have been innovative in competing to attract inward investment (e.g. Ireland). The section then reflects on the key differences in support frameworks in the conclusions.

8.5.2 By way of introduction, IPAs have been formed throughout the global economy to represent each nation's interests in securing FDI. IPAs exist in all OECD countries and many other developed and developing economies. To a large extent their activities are mirror images with virtually all carrying out similar

roles and employing similar tools. Within the European Union grant and subsidy programmes are generally available to both national companies and to foreign owned investors having a base within the nation.

8.5.3 In terms of fiscal tools, despite of some reported interest among EU officials for a coordinated tax policy for Member States, the European Commissioner for Internal Markets, has recently rebuffed calls for legislation towards tax harmonization. Furthermore, a number of Member States have outlined their position to oppose any proposals that would create a “common consolidated tax basis”.

8.5.4 This review of policies begins by considering state promotion tools within the EU.

8.6 Czech Republic

IPA: “CzechInvest” <http://www.czechinvest.org/en>

8.6.1 Previous to its EU accession in 2004, the Czech Republic had harmonized its laws and regulations with those of European Union. Between 2004 and 2006, significant economic growth was attained in the state.

8.6.2 CzechInvest of the Czech republic, which was established in 1992 and currently has 13 offices in regions, launched its investment incentives scheme in 1998 in full compliance with EU regulations, with a focus on supporting investment projects in manufacturing, business support services, and technology centres. Legally foreign and domestic investors have equal status. The package of tools available includes:

8.6.3 For manufacturing projects- tax incentives (corporate tax relief for up to 5 years/ partial tax relief for existing firms); job creation grants (according to Czech region); training/retraining grants (level dependent on region, up to 45%); and site support (provision of low cost land/infrastructure).

8.6.4 For R&D projects (aimed at projects that involve the establishment or expansion of a development centre aimed at research, development and innovation of products and technologies)- subsidies for business activity are available (up to 60 % of two years' wages); along with subsidies for training and retraining (depending on the total number of jobs created up to 45 % of training costs for a maximum of 3 years/ with 40 % and 5 years in Prague).

8.6.5 For Business Support Services (including software development centres and contact centres)-. subsidies for business activity (up to 60 % of two years wages); and subsidies for training and retraining (typically up to 45 % of training

costs, paid over three years, dependent on the total number of jobs created).
See <http://www.czechinvest.org/data/files/ip-letak-624.pdf>

- 8.6.6 Other services offered by CzechInvest include: promoting the Czech Republic abroad; supplying business and market information; facilitating investment incentives (“exclusively authorised to file applications for investment incentives”); aid to investors in accessing structural funds; site searching; supplier matching; aftercare services; and business infrastructure development. Financial aid in technology centres and strategic services are available in geographical areas of persistent high unemployment for projects that lead to new job creation.

8.7 France

IPA: “Invest in France Agency”

<http://www.invest-in-france.org/international/en/>

- 8.7.1 Incentives are available equally to both French companies and foreign investors. Financial subsidies and tax incentives are offered at the local, regional and national level in order to attract investment to less affluent areas.
- 8.7.2 Invest in France Agency works with the 22 regions of France, aiming to provide help and advice at all stages of an inward investment project. It acts on behalf of the investor as a facilitator/intermediary to the French administration for legislative and tax advice, and as a link to regional partner networks. Services are offered to help expatriate personnel with their locational needs (accommodation, school advice, employment information for partners etc.).
- 8.7.3 A business-matching service is provided by the Invest in France Agency to help create opportunities for foreign investors and potential partners/ sub-contractors/ suppliers within France- the purpose of this tool being to integrate inward investors into the economy, maximising the benefits for indigenous companies.
- 8.7.4 With reportedly nearly as many jobs created in France in recent years through the expansion of existing investors, as opposed to new start-up investments, aftercare services are currently attributed a high level of importance. The recently instituted “Grands Comptes” aftercare programme, set up by Invest in France Agency ([in 2005](#)), aims to achieve two visits per year to each large foreign investor business (one of which takes place in the enterprise's home country), in order to discuss new projects and address any concerns the

investor may have. Further to this the French IPA maintains links with foreign business networks within France, such as the “Japan Club”.

8.8 Germany

IPA “Invest in Germany” <http://www.invest-in-germany.com/homepage/>

- 8.8.1 The range of services offered by Invest in Germany covers supplying general market information; sector guidance; economic data; advice on the tax and legal framework within Germany; site searching; advice on project financing; identification of suppliers and partners (e.g. for collaborative R&D); help in negotiations securing finance or with authorities; and assistance with the incentive application process.
- 8.8.2 As elsewhere in Europe grants are available to investors under the Joint Agreement for the Improvement of Regional Economic Structures for projects helping to benefit underprivileged regional economies. Distribution of these subsidies is generally subject to approval by the EU. The comprehensive package of federal and state investment incentives are available equally to domestic and foreign investors. In some cases performance requirements may be tied to the incentive may exist (such as maintaining a certain level of employment).
- 8.8.3 Investment promotion in Germany is particularly weighted towards areas of the former East Germany where tax incentives (special depreciation allowances; investment allowances), investment grants (including R&D; Improvements of Regional Economic Structures Program; export, marketing and fair participation assistance), and credit programs (preferential rate loans from the government-owned Bank for Reconstruction and subsidiary, Mittelstandsbank; loan guarantee and credit programs) are focussed.

8.9 Ireland

Main IPA*: “The Industrial Development Authority of Ireland” (IDA Ireland)¹
<http://www.idaireland.com/home/index.aspx>

- 8.9.1 Supplementing a forceful marketing drive by the IDA Ireland with fiscal and financial policy tools (particularly the low level of corporate tax) enabled the nation to firstly become a low cost location for inward investment (particularly in

¹ The Industrial Development Authority of Ireland has overall responsibility for promoting and attracting FDI in all areas of the country except the Shannon Free Zone. There also exists: Enterprise Ireland who promote joint ventures/ strategic alliances between indigenous and foreign companies; and Udaras na Gaeltachta which has the responsibility for economic development in areas of Ireland where the Gaelic language is established.

the manufacturing sector), and then establish itself as a particularly suitable territory for knowledge-driven, high value added investment (such as R&D activities). Ireland's educated workforce has been an important factor in enabling the formation of technology clusters, and laying the foundations for innovation.

- 8.9.2 All firms incorporated in Ireland are treated on equal basis. The low level of corporate tax (remaining at 12.5% since January 1st 2003) for foreign and domestic firms, has been instrumental in Ireland's success. This is guarded by the Government who oppose proposals either to harmonize taxes at a single EU rate, or standardize the accounting methods used by EU Member States to calculate corporate taxes.
- 8.9.3 Grant aid is available to investors for buildings, training, R&D, land, and capital equipment, on acceptance of investment proposals. The economic appraisal is carried out on information pertaining to fixed assets and targets, where the criteria employed to judge includes the quality of employment created and location.
- 8.9.4 Performance requirements typically centre on employment creation targets agreed between IDA Ireland and the investor.
- 8.9.5 Since the 1990s IDA Ireland has sought to balance regional investment, encouraging ventures in regions outside Dublin. EU Regional Aid Guidelines, effective from 2007, govern the amount of aid that the Irish Government can provide to companies, with the largest allocations being available in the Border, Midlands and West of Ireland locations. Here the Government can provide a maximum grant allowance of 30% on the first EUR 50m of eligible expenditure, 15% on the next EUR 50m of eligible expenditure, and 10% of the balance above EUR 100m.
- 8.9.6 In the South East, South West and Mid West of Ireland the corresponding percentages are 10%, 5%, and 3.4%, whilst no grant aid from this programme is available in the East. Grants for R&D, however, are available throughout all of Ireland (following the new 2007-2013 European framework for research, development and innovation), an important tool to backup the drive for knowledge based activities.
- 8.9.7 The IPAs of Ireland also offer a range of other services to inward investors including information on key business locations; introductions to key commercial actors (local service providers, government, industry and research institutions); and advice on property solutions.

8.10 Poland

IPA: "Polish Information and Foreign Investment Agency" (PAIIZ)

<http://www.paiz.gov.pl/index/>

8.10.1 Poland's integration into the European Union is on-going. Following the adoption of EU legislation from 2004 to 2007 the nation has been able to reform the way its economy is regulated, restricting government intervention into the market. Indigenous, or foreign companies investing in Poland are eligible to receive assistance from the Polish government.

8.10.2 The national IPA, PAIZ, was formed in 2003 and has established a network of bureaus known as Regional Investor Service Centres across Poland. These have the purpose of supplying potential investors with such data as investment opportunities, the socio-economic profile of local areas and available sites. The service centres hire consultants trained by PAIZ, and funded through the local authorities (Gminas).

8.10.3 Numerous incentive tools are available to foreign investors seeking to locate in Poland. These incorporate investment grants of up to 50% (70% for SMEs) of investment costs; employment grants of up to EUR 5,000 per new employee; grants for R&D and other activities (training, logistics, creating renewable energy sources, and environmental protection); selling of government brownfield and greenfield sites at reduced cost; and incentives for the development, or acquisition, of new technology (including partial commercial debt relief for monies owed to a state-owned bank used for the purpose of acquiring new technology). Exemptions for income tax and real estate tax exist in Special Economic Zones set up in Poland.

8.11 United States of America

IPA: Invest in America www.investamerica.gov

8.11.1 Generally in the US individual states take a strong role in location promotion although an overall umbrella is provided by Invest in America which "promotes and supports FDI in the United States, contributing to U.S. job creation, innovation, and competitiveness" (www.investamerica.gov).

8.11.2 Prior to the setting up of the Invest in America initiative in March 2007, the U.S. did not have a dedicated federal government programme to attract inward investment (this responsibility had been left solely to state and local governments). Invest in America was then formed to carry out promotional activities overseas to potential investors; act as an ombudsman in Washington, seeking to address and remove obstacles to investment in the U.S.; and

support the state and local governments of the U.S. attract foreign investment by, for example, passing on leads gained by its promotional work overseas.

- 8.11.3 Unlike in the European Union (where the EU commission more actively regulates, monitors and acts as an enforcement body for grant and subsidy expenditure), there has been little regulation on state level subsidies in the U.S., whilst discussion over the use of corporate tax incentives (“corporate welfare”) by states to attract investment (and whether they interfere with U.S. Congress’ exclusive authority to regulate interstate commerce) has continued. Despite concerns raised about bidding wars between states in these “Smokestack-chasing” activities, competition has steadily increased in recent years with state subsidies and tax incentives moving to replace decreasing federal aid.
- 8.11.4 States from the U.S. operate offices throughout the world to generate and facilitate investment enquiries- the Arizona investment promotional agency for Europe being based in Newtown, Powys, for example. These IPAs offer support and advice on investment opportunities in their home state, providing links to economic partners and contacts.
- 8.11.5 The Business Attraction Team for Arizona (<http://www.azcommerce.com/wtaac>), for example, is able to offer site selection assistance and visits, market data, labour recruitment assistance, access to regulatory authorities, and information on state incentive programs. Within this latter category falls: depreciation tax allowances; job training programmes (up to 75% of the costs of training net new employees in jobs that meet wage criteria; up to 50% of allowable training costs for incumbent workers); foreign trade zones (where located business may be eligible for an 80% reduction in state real and personal property taxes); grants for road construction projects (Economic Strength Project Program); small grants for hi-tech investments (AZFAST/ Technology and Market Assessment Grants); and R&D income tax credit. Arizona is also covered by the U.S. Department of Commerce, Trade Adjustment Assistance Program, which provides grants to U.S. manufacturing companies who have experienced reduced sales and employment due to foreign competition.

8.12 Japan

IPA: “Japan External Trade Organization” (JETRO)

<http://www.jetro.go.jp/en/invest/>

- 8.12.1 JETRO was originally established in 1958 mainly to facilitate export growth for the nation. In recent years, and particularly since 2001 where major efforts were made to rejuvenate the Japanese economy, JETRO’s core focus has been on promoting FDI in Japan, operating six *Invest Japan Business Support Centers*

(IBSCs) across the nation (Tokyo, Yokohama, Nagoya, Osaka, Kobe and Fukuoka).

8.12.2 These centres coordinate with government ministries and agencies, acting as one-stop shops to support foreign investors. They are able to provide information, help and advise on business practices and procedures in Japan; market intelligence; staff recruitment; property site finding; and contact information (for example, for potential suppliers or partners). Additionally, free temporary office space can be provided to the foreign investor (for up to 50 days).

8.12.3 JETRO works with the regional authorities to aid them in attracting foreign investment. These cooperative activities include drawing up business incentive programmes; conducting marketing and public relations exercises overseas (including symposiums and seminars in major cities worldwide); and pro-actively identifying promising foreign investors.

8.12.4 National and local authorities offer a number of incentives to encourage investment. These incentives differ by region (there are 47 Prefectures, and 17 city locations) but typically include: location promotion subsidies (especially for R&D and hi-tech investments); preferential taxation (e.g. reduction or exemption of business taxes, fixed asset taxes, real estate acquisition taxes, and taxes related to financing/lending systems); and foreign company start-up and expansion grants.

8.12.5 The Japan Investment Council adopted in 2003 a plan for the promotion of FDI in the nation which highlighted the important role of Special Zones for Structural Reform. These zones aim to make their localities more attractive to inward investment through being able to offer exemptions from national regulations- for example, exemptions for visas/ residency qualifications for key foreign staff to expand the workforce of an investor. The success of these zones, which number around 550, has however been questioned with critics pointing out that their effect has been limited by the fact that less than half of applications for exemptions have actually been approved by the government of Japan.

8.13 Some conclusions on FDI support frameworks

8.13.1 A fair degree of the UK's success in securing inward FDI may be attributed to the network of public and private sector organisations operating to support "UK Plc". A level of competition between the nine regional development agencies and also the devolved administrations has helped to drive improvements in services offered by their dedicated investment promotional agencies. The UK's history as a place open to foreign investment (evident in the network of double taxation treaties), and of central government support to coordinate FDI

activities, has helped the UK retain its position amongst the global leaders in securing foreign investment.

8.13.2 However, the present situation is one of increasing global competition, with countries that had not previously operated a dedicated government programme to attract inward investment now moving to catch-up with rivals, and being able to employ best-practices from elsewhere- e.g. the *Invest in America* inward promotional agency which was set-up in 2007. Furthermore, the new EU entrants and developing economies in the far-east have moved to set up their own IPAs (Poland's *PAiZ* set up in 2003) or to change their previous focus (*CzechInvest* launching a number of new incentives programmes in the last decade). Consequently, the myriad of IPAs competing around the world to secure mobile investments now tend to offer very similar basic services (from marketing, regional business information, contact supplying, site searching, information on incentives, recruitment/ training schemes, all the way through to aftercare).

8.13.3 Grant availability under the EU regional state aid rules has been an important tool in offering incentives for inward FDI. Commentators such as Fothergill (2006) have argued that, increasingly, the position of some of the older, more prosperous EU States (Germany, France, UK, Italy and Spain) has been weakened by the EU State Aid rules instituted for the 2007-2013 round of regional aid by the European Commission. The principal of concentrating regional aid in the less favoured regions ("less and better targeted state aid") has been applied by the Commission. This has meant that the proportion of the population in areas eligible for regional state aid for 2007-2013 has tended to be reduced in the more prosperous regions, while new member states were granted high levels (e.g. Czech Republic), or indeed comprehensive coverage (including Poland, Slovenia and Hungary where there is arguably now the potential for the introduction of a wholesale national capital investment subsidy, legal within EU rules). This shifting of funding eastwards within the EU is, furthermore, likely to continue with any expansion encompassing Bulgaria and Romania.

8.13.4 The analysis above has briefly highlighted the importance of incentives such as grants and subsidies to investors. It should, however, be kept in mind that generally these are tools utilised, foremost, as a deciding factor between two or more competing areas that may have already scored equally in a site search on attributes such as appropriate site/ building, labour availability, and communications (transport and technical/ IT). Incentives would not be economically viable if an area did not have these attributes in place to start with.

8.13.5 In this context the importance of schemes to develop relevant investor-attractive elements such as labour market skills (through retraining initiatives), and IT

infrastructure are shown to be of high significance. These factors could be particularly important in a Welsh location marketing context.

- 8.13.6 The evidence would suggest that with greater restrictions on grant incentives, combined with increased levels of global competition for FDI, countries like the UK will have to increasingly explore more innovative tools and ways to compete for foreign investment. Indications from France are of a greater concentration there on building business relationships with potential and particularly, existing investors (linking with foreign trade organisations; aftercare visits domestically and abroad to foreign enterprises based in the economy).
- 8.13.7 With IPAs such as Poland's PAiZ highlighting the availability of reduced cost government owned land for investment purposes in its economy, there comes the challenge to the UK of ensuring a quality supply of new development sites and/ or redeveloped (brownfield) sites. There may also be more opportunity in the UK to offer and market the potential for other practical incentives such as the time-limited free office space that is made available to start-up foreign investors in Japan.
- 8.13.8 The experience of Ireland has shown the potential of corporate tax policy as a tool to successfully spearhead a drive for inward FDI. The room for manoeuvre for the UK here, however, may be somewhat restricted having relatively competitive corporate tax rates compared to other major (G7) economies. In the case of Ireland's inward investment success the development and education of the workforce has been a vital component in securing the move towards a hi-technology, innovation-led economy.
- 8.13.9 There may be grounds for optimism in the future outlook of inward FDI for the UK and lessons to be learned on a regional basis for Wales. Scotland, for example, has been recognised as a particularly strong location for investment and has won the Financial Times FDI magazine "European Region of the Future 2008". Here the region was commended for: securing a number of high profile investments (including JP Morgan, Barclays and Wyeth); its overall development strategy; a number of innovative new developments, such as the Edinburgh BioQuarter and Seabraes Yard digital media park in Dundee; and the Government's economic strategy of reducing and removing business rates (Clearly, not an option at present in the Welsh case). The Scottish parliament has the right to raise limited income through the use of a defined, but limited, power to change basic income tax levels by plus or minus 3 percentage points (currently standing at 22%; the Scottish Executive has made a commitment not to make use of this power for the lifetime of the current Parliament).
- 8.13.10 The lesson here for Wales is that stronger competition, implies the need to be as innovative as possible. There remain questions on efficiency of grants, and the welfare losses deriving from bidding wars. The next section examines the evaluation and efficiency of intervention.

9 Stage 3 review: Evaluation of intervention to support FDI

9.1 Introduction

- 9.1.1 This section begins with an analysis of how far policy interventions can be shown to be a determinant of FDI flows at different spatial levels. The section then goes on to examine research that has considered the general effects of different types of intervention, and at different spatial levels. This also addresses issues of wastefulness, and bidding wars.
- 9.1.2 The section then examines evaluations of UK and overseas prior support frameworks and interventions, focusing on issues of cost effectiveness and highlighting cases of best practice in line with specific cases of market failure.

9.2 Policy interventions as determinants of FDI flows

Initial issues

- 9.2.1 Inevitably it is quite difficult to investigate the precise impacts of policy intervention on the multinational firm location decision. There are a number of issues in this regard that are considered before some of the literature surrounding the topic is reviewed.
- 9.2.2 First, analysis of the role of FDI incentives is made difficult because FDI-related interventions can take many forms. For the analyst there are then problems identifying precisely what resources have been expended in attracting a given firm to a given location. Typically evaluations focus on items such as the level of grants and subsidies provided to foreign investors. However, there are also other items such as general promotional activity in the home nation of the multinational firm, and specifically targeted marketing resources on the firm in question. There are then costs involved in MNE 'lead' generation but these are difficult to attribute to individual projects in the round.
- 9.2.3 Furthermore, even on public expenditures that can be allocated to a given MNE project, there may be issues of commercial confidentiality such that elements of the total package remain unreported. This has been a real problem in the context of recent bidding wars for more landmark-type projects where packages have included subsidised infrastructure and sites. Finally, development agencies may also support facilities that improve the quality of life for foreign employees in subsidiaries, for example, bilingual schools, fast tracked housing,

and specialised social amenities, and subsidised memberships of sports facilities (see also UNCTAD, 2001).

- 9.2.4 Second, the earlier review of FDI trends revealed that cross border merger and acquisition activity has dominated overall FDI flows in several recent periods. There is an expectation here that these types of investment are less likely to be influenced by the incentives typically targeted on greenfield type investments. Notwithstanding, the nature of tax incentives can impact the decision process underlying where firms choose takeover targets.
- 9.2.5 Third, while empirical papers often focus on the absolute level of incentives being offered to foreign firms, more important may be the way in which incentives are mobilised and targeted. This has been an important theme in the UK where research has investigated how far the institutional 'infrastructure' in the devolved regions of Scotland and Wales has impacted their ability to be more proactive in efforts to win landmark FDI projects (see Raines, 2000, and 9.5.13 for further details of findings of this research).
- 9.2.6 Fourth, there is a problem that different types of foreign investor may consider the nature of incentives at very different stages of their site feasibility work, and different investors also value selected incentives in different ways. Indeed it is difficult to generalise on the way in which MNEs actually undertake site selection. For example, does the firm decide on the nation first, and then select the best region in that nation, and then select possible sites within that region in a strictly hierarchical process. Alternatively, do firms actually consider several specific sites simultaneously. The nature of the process is expected to determine when more explicit incentives enter the feasibility process. Unfortunately there is no way of generalising on this process. Older studies of FDI determinants (see later) tend to assume a hierarchical process and with the more explicit incentives only considered when decisions are made at the sub-national level. However, with the advent of improved ICT it becomes more likely that firms making large investments have the ability to select a choice set of locations across different sites in different states such that issues of incentives enter feasibility work at an earlier stage.
- 9.2.7 Finally, and relevant to the UK case, is the issue that elements of public resources to attract FDI are not actually committed until after projects have got underway. For example, Regional Selective Assistance is discretionary and applied for by investors. However, this makes analysis of its role in the location decision quite difficult because it is the FDI itself that drives the scale of the offer, and not vice versa (see also Wren, 2005, on this issue).

9.3 FDI incentives and wider government policy and macro-economic stability

9.3.1 The OECD (2003) in its review of the role and purpose of FDI incentive policies makes the point that a key policy objective should be to create an environment in which multinational firms can conduct their businesses profitably. Key issues here are seen to include;

- Providing a predictable and non-discriminatory regulatory environment with undue administrative and related impediments;
- Providing a stable macro-economic environment and encouragement to international trading;
- Providing efficient access to physical infrastructure and human capital.

9.3.2 OECD (2003) then concluded that the usage of incentives is no substitute for pursuing the more general policy options of ensuring a good competitive environment for business. The importance of these conditions has been highlighted in recent debates. For example, while Oxelheim and Ghauri (2006) in an edited collection point out that incentives have been the most important determinants in the EU race to attract FDI. However, Dunning (2007) showed that it is actually the implementation of more general competition enhancing macro and micro-economic policies that are equally important, together with the merger and acquisition strategies of international firms.

9.3.3 This notion of the importance of more general industry and market conditions, together with institutional conditions finds support in much of the literature that has treated with the location aspects of FDI. In general, the Stage 1 review showed that studies have considered the significance of issues such as market size, growth, existence of tariff and non-tariff barriers, factor prices, infrastructure availability, political risk and stability, cultural distance, and general taxation regulations, and subsidies (Dunning, 1993).

9.3.4 Then in any consideration of the factors determining international flows of FDI, variables describing levels of incentives, fiscal and regulatory conditions may become very much secondary location factors when considered against more general issues of market size and growth rates.

9.3.5 For example, Lunn (1980), Scaperlanda and Balough (1983), together with Culem (1988) each showed that bilateral FDI flows between the US and Europe were influenced in the main by factors such as size of host market, economic growth in the host market and the overarching presence of tariff barriers. Reuber *et al* (1973) also showed that the main determinants of US FDI into Western Europe after 1945 included the presence of lucrative markets

(generally for income elastic consumer goods), liberal host policies, technological infrastructure, labour availability and cultural nearness.

- 9.3.6 With respect to the presence of relatively more liberal conditions as drivers of FDI, Taylor (2000) examined the impact of host country government policy on US MNE investment decisions. He considers whether more open countries in terms of trade and FDI policy attract more investment, and whether a relationship exists between investment flows and openness to trade. Taylor used data on comparative FDI policies from the *World Competitiveness Report*, and his analysis suggests that a 1% increase in FDI openness leads to a 3-4% larger flow of investment or increase in the assets of US affiliates. It is likely that FDI openness as a variable may also proxy for factors such as lack of corruption and quality of institutions.
- 9.3.7 Then with respect to more market seeking FDI, research covering FDI into Western Europe would suggest that items such as grants and subsidies, and individual tax conditions, would tend to feature more strongly as explanatory variables in sub-national analysis of the geography of FDI.
- 9.3.8 Studies have also focused in on more general institutional conditions. Globerman and Shapiro (2003) examined outward FDI from the US suggested that countries that do not reach a minimum level of governance (for example, in terms of property rights, legal systems, and regulatory systems) will get limited FDI. They argued then that policies that promote open markets, and effective political institutions might be as important as investing tax payer monies in grants. Flores (2006) supported these ideas, examining the location of large US MNEs between 1980 and 2000. Flores (following Dunning, 1998) bundled the determinants of location choices under two heads: economic drivers encompassing factors such as market size, and incentives; and choice factors encompassing institutional and cultural factors, legal systems and cultural similarity. He concluded that in explaining US FDI locations, country level characteristics from the economic paradigm together with similarities in political and legal institutions, and issues of cultural distance are significantly associated with the likelihood of FDI. In a similar vein, the role of institutional constraints (particularly slow rates of institutional adjustments to environmental changes) on the probability of capital flight (outward FDI) is considered by Witt and Lewin (2007).
- 9.3.9 It is likely that institutional conditions also link through to quality of life indicators which studies have shown to be important in location decisions, particularly those where foreign firms need to place relatively large numbers of expatriate staff overseas during the start-up phase of new subsidiaries.
- 9.3.10 In that macro-economic factors impact a state's prospects in gaining FDI, and that government actions can directly impact exchange rates, taxes and tariff structures, then it is worth reviewing briefly here on the role of these factors.

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- 9.3.11 Paragraphs 2.10.2 and 2.13.6 outline exchange rate issues. Moving to taxation, the general wisdom is that high taxes put off FDI. Much has been made in the Irish case of the impacts of low Corporation Tax rates in their FDI success story (although this issue is may have been overstated , see Buckley and Ruane (2006)).
- 9.3.12 Smyth *et al* (2007) also point out that in the Irish case, success in the 1990s was in part based on a low effective tax rate, but also a pro-business transparent fiscal regime. They also note that recent successes have been founded on a rethinking of the tax system, with for example, until quite recently, Ireland's credit system for taxing foreign dividends and taxing capital gains on foreign subsidiaries seen to be at odds with the government wish to make Ireland an effective base for international firm HQs.
- 9.3.13 The point here is that questions regarding the impact of taxation will vary by the type of taxation. It is also noted here that some states have limited choices in deciding between tax based incentives for investors, and grants and subsidies. Morton (2002) showed that in Central and Eastern Europe corporate tax holidays are more common rather than grants because of liquidity shortages of cash.
- 9.3.14 Blonigen (2005) also showed that the literature in regard to the impacts of taxation on FDI is far from straightforward, with impacts diverse depending on the nature of the FDI (greenfield, brownfield, cross border M&A etc), and the reciprocal tax treatments in the home and host state.
- 9.3.15 For example, Blonigen showed that where new investment takes place there is the possibility that taxation rates may have an impact on the MNE's decision to re-invest through transferring a stream of capital from the home to the host state, or by simply using retained earnings from its foreign subsidiary. He showed that it is largely the FDI that is funded through retained earnings which will respond most to host country tax rates, as opposed to home country rates. Where FDI involves a new transfer of capital from the parent then this might respond to both host and home tax rates. As highlighted above questions regarding tax will go beyond the absolute rate of tax in the host.
- 9.3.16 Key here can be how the host state treats an MNE that also pays taxes overseas (i.e. problems of double taxation). Then it can be the host economy policies with regard to double taxation which alter the effects of home and hosts tax rates on the FDI decision. Blonigen (2005) concluded that the evidence reveals that the imposition of a credit system to deal with the foreign taxes paid by the MNE can make tax levels in the host state 'relatively inconsequential'. Clearly, this provides some context for issue regarding the impacts of transfer pricing in the UK (see Buckley and Hughes, 1997; Munday and Peel, 1997).

9.4 Evidence of the role of incentives in influencing national FDI location

- 9.4.1 Studies that treat with the issue of the role of fiscal and other incentives in FDI attraction are not that common. This is in large measure because of the difficulties of collecting comparable national data on incentives offered.
- 9.4.2 The role of fiscal incentives in the location of FDI into Europe is considered by Hubert and Pain (2002). In context they showed that the majority of empirical studies had actually shown limited evidence that investment incentives had been an important determinant of either the scale or the form of FDI in individual states, but with stronger evidence on the effects of fiscal incentives and public infrastructure. This study then used a panel data set covering FDI undertaken by German firms between 1980 and 1996. Hubert and Pain explore the importance on FDI of variables including gross general fixed government investment as % GDP; general government spend on subsidies as % GDP; level of ERDF payments as % GDP; and the effective corporation tax rate. They noted that ERDF type payments were relevant for location choice decisions in that they helped support new infrastructure.
- 9.4.3 The Hubert and Pain study found that the variable describing spending on subsidies was insignificant. However, the study revealed evidence of increasing tax rates deterring FDI, but with stronger evidence relating to the impact of the level of general government fixed investment in the host relative to other EU states. The study concluded that a 1% point fall in the host effective tax rate was estimated to raise FDI stock by 3.55% if, for example, the effective tax rate averages 20% in other states, and by 3.16% if it averages 10% elsewhere.
- 9.4.4 Hubert and Pain suggested that the UK, and to a lesser extent France, have gained investment as a result of an improvement in tax competitiveness in the 1990s compared to the 1980s.
- 9.4.5 Another EU-based study by Mayer and Mucchieli (1998) examined the determinants of Japanese FDI across five EU states between 1984 and 1993. This analysis included variables describing the level of capital grants and subsidies; corporation tax rate; labour subsidies, and the level of spending financed by ERDF in each location. The results showed that fiscal variables only became significant when state specific fixed effects were ignored.
- 9.4.6 Devereux and Griffith (1998) found that although the average effective tax rate of different host economies does not influence the probability of a US firm locating in Europe, it does have a significant effect on the probability of locating in an individual country once the firms has decided to locate somewhere in Europe.

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- 9.4.7 From an EU perspective there is an active current debate on the extent to which incentives to foreign firms are becoming more important (see for example, Oxelheim and Ghauri, 2006). A critical underlying issue here is that EU enlargement and the movement towards freedom of movement in investment funds, provides greater incentives for foreign firms to actually serve more diverse EU markets from a smaller number of strategic locations, leading to the possibility rationalising and restructuring production. MNEs will have greater incentives in this new environment to go where profits are highest, and these themselves can be influenced by different state policies. Each EU state then has a strong incentive to put in place policies that will enable the attraction of FDI. This creates an issue of a 'race to the bottom' with for example the possibility that EU structural fund aid results in a transfer of employment from one EU area to another, with limited overall welfare gains.
- 9.4.8 Consequently, when MNEs do not 'publically' place incentives prominently in their site feasibility work, this is not the same as saying that these are unimportant. For example, Tavares and Young (2003) revealed that while MNEs may not place the role of various grants and subsidies high in their decision making criteria, this merely reflected that competition forces have provided an equally generous set of incentives. Clearly, there is the possibility that some EU states have been more aggressive in attempting to attract FDI (see later, Phelps and Tewdwr-Jones, 2000).
- 9.4.9 However, this more competitive environment, particularly following the admission of central and eastern European states to the EU might be seen in two ways.
- 9.4.10 First, a means of reducing differences in income and productivity across the EU, or second, a more serious and inefficient rent-seeking game.
- 9.4.11 Notwithstanding the above there is plenty of evidence that suggests an intensification of inward investment competition in the EU. Charlton (2003) draws out some interesting cases including the decision in 2001 of BMW to locate a new car plant in Leipzig. Charlton showed that 250 locations in Europe battled to attract this investment, but with Leipzig offering a 500 acre site for the sum of \$2.2m together with \$244m of EU aid for locating in a poorer region.
- 9.4.12 Charlton also provided case material relating to Nissan's decision to stay in the UK producing its Micra model in 2001. These cases are interesting because they reveal the bespoke nature of packages that are so difficult to examine in the context of more formal economic analysis. Charlton also comments on the intensification of competition between the accession states taking the example of the Czech government (Charlton, 2003, p24) which was initially hostile to tax breaks for foreign firms, but changed direction when it found itself struggling to compete with Hungary. In 1998 the Czech authorities approved a new package

of incentives including tax holidays, job creation and training grants, and low priced infrastructure.

9.5 Evidence of the role of incentives in influencing sub-national FDI location

- 9.5.1 In the round one might expect that the role of grants and subsidies might be more prominent in studies of the sub-national location of FDI, presupposing that incoming MNEs do adopt something of an hierarchical approach in deciding on locations and where incentives gain more weight once the final national location has been decided upon.
- 9.5.2 Inevitably the evidence on the impact of incentives is mixed and with many of the studies focusing on the US and UK.
- 9.5.3 Studies in the US have tended to find that it is factors linked to agglomeration, market size, labour costs, and infrastructure that have been important in determining the FDI location in different states (see earlier review). Indeed Glickman and Woodward concluded in their analysis of the distribution of FDI in the US that location factors describing regional production conditions were more important to foreign managers than state and local incentives.
- 9.5.4 However, Coughlin *et al.*, (1991) were able to conclude in their analysis that rates of state promotional expenditures and higher taxes did impact the location choices for foreign firms within the US. Friedman *et al* (1992) examining new manufacturing plant locations in the US also concluded that tax rates and state promotional spending were significant variables.
- 9.5.5 Hines (1996) examined whether US states that granted foreign tax credits influenced inward investors. The issue here was that the ability to apply foreign tax credits against home liabilities reduces an investors incentive to avoid high tax foreign locations. State taxes were shown to significantly influence the pattern of FDI in the US case. Swenson (1997) also examined the state wide distribution of FDI but focused on the tax responsiveness of different investment types. Swenson argued that state tax increases could be connected to fewer foreign plants, and fewer expansion projects.
- 9.5.6 In conclusion, the US evidence tends to suggest that promotional spending and state level taxes may have an effect but that this is small with respect to other location factors speaking to market size, local production conditions, and infrastructure issues. Indeed the growing evidence base in countries such as China and Russia would lead to similar conclusions. However, some care is needed with this conclusion following from the analysis above concerning the fact the many areas in a choice location set may offer similar levels of incentives.

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- 9.5.7 UK-level analysis has largely been contextualised on how far the drift of foreign manufacturing to the regional periphery can be attributed to interventions such as the grants and subsidies available in assisted areas, and the presence (in the 1970s) of industrial development certificate requirements in more developed areas in the south east. The geographical shift in the distribution of the foreign manufacturing stock has been confirmed in a series of studies (see for example, Hill and Munday, 1992) but with more uncertainty on the precise role of grants and subsidies.
- 9.5.8 Devereux *et al* (2003) concluded that studies tended to show that grants are a rather poor explanatory variable with agglomeration effects dominating the firm location choice. They examined the location of new (foreign and domestic) plants in GB 1986-92, and show Assisted Areas are a less attractive location, but that grant availability does have a significant effect on location, but that this effect is very small. Their conclusion was that a 1% increase in the grant available works to increase the probability of location being selected by only 0.04-0.13%.
- 9.5.9 Hill and Munday (1992) found that regional performance in attracting FDI projects and jobs could be linked to relative levels of regional preferential assistance to industry. However, a problem with this study was that the regional preferential assistance variable covered regional development grants, regional selective assistance and spending on land and factories. As such some element of the funding was provided ex-post after firms had actually made their location decisions such that there was an endogeneity problem.
- 9.5.10 Taylor (1993) examined the county distribution of Japanese FDI in the UK and did specifically explore the role of assisted area status and showed that they had been influenced by assisted area status and the existing industry mix of county locations.
- 9.5.11 A further comprehensive study of FDI location in the UK by Billington (1999) examined project successes at the regional level did not show that grants and subsidies were a significant explanatory variable.
- 9.5.12 The econometric work on the sub-national location of FDI in the UK has used variables describing either whether a location has assisted area status (i.e. a dummy variable) or focuses on the absolute level of funding available. However, there is a different vein of critical work which suggests that it is not just absolute levels of assistance, and development area status that might be relevant but also the ways in which regional administrations are able to mobilise incentive frameworks to bid for projects. One historical context for this has been the strong record of success in regions such as Scotland and Wales with relatively well funded development agencies.

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- 9.5.13 This theme is picked up by Raines (2000) who examined inward investment into the UK and regional variation in incentives. Raines argued that devolution processes and the movement of responsibility for economic development to English RDAs, has tended to re-ignite debate on whether Scotland and Wales have had an advantage in terms of attracting foreign projects and outbidding other regions for landmark projects.
- 9.5.14 Raines argued that while empirical work has suggested that financial incentives have a minor impact on final location decisions. This might be the result of an equal level of incentives across several locations. However, under these circumstances how precisely incentives are 'activated' became important i.e. processual elements. Raines then investigated whether Scotland and Wales have systematically been able to command and target above average financial assistance resources at inward investment projects.
- 9.5.15 Raines used information relating to RSA offers to show that Scotland and Wales accounted for larger shares of total employment and investment in all RSA projects than their shares of national assisted area coverage would suggest, and that spending per capita in the assisted areas also showed Scotland and Wales well ahead. Raines argued that with respect to large projects that these two regions have consistently been able to devote more RSA resources to larger grant offers than their English counterparts. Also many more large grants have been offered in Scotland and Wales compared to elsewhere. This also supports Hill and Munday's (1992) conclusion that incentives have been important in the relative success of Wales and Scotland in attracting FDI.
- 9.5.16 The conclusion was that Scotland and Wales were better able to commit public resources to attracting and retaining large investment projects. This did not necessarily mean that their institutions had more financial muscle, but that an ability to offer large incentive packages on a regular basis, suggested a more active governance system in these regions, in either being able to access higher than average resources for making incentive offers, or having the capacity to use the same level of resources as other regions more effectively. In the case of Scotland and Wales, the relationship between award making powers and promotion activities is closer than it had been in the English regions case. One result might have been greater speed and efficiency in making offers and countering offers from other regions. The further devolution process might then fortify the Scottish and Welsh positions in this regard with more scope for these areas to tailor incentive packages and resources.
- 9.5.17 This line of argument also links through to work undertaken by Tewdwr-Jones and Phelps (2000) who examined inter-regional competition for inward investment projects, and issues of an 'uneven UK playing field'. They in similarity to Raines (2000) observe that devolution can permit 'novel' departures from a central policy stance on FDI, and with devolution occurring at a time when there had been a noticeable escalation in inter-regional

competition for larger projects. However, the focus on financial incentives was seen to be misplaced and with more consideration needed to show how competition had seen the planning system subordinated to economic development imperatives as regional and local institutions collaborated to minimise the transactions costs of inward investors.

- 9.5.18 Tewdwr-Jones and Phelps then considered the unique ways in which collaboration had taken place in packaging, bidding and marketing of regions to MNEs; and how the land use planning process had been used in the promotion and 'gazumping' process. They reference Welsh case material on the massive LG inward investment highlighting the creativity with which RDAs assembled a package of incentives i.e. training and input sourcing, land gifts, and customised sites and infrastructure, and work to ensure that once location decisions are confirmed that local planning procedures do not get in the way. As with Raines (2000) attention was drawn to the more difficult environment for English regions where organising bidding processes is more involved because of less coherent arrangements and institutional capacity. A key concern voiced in this paper was the sub-ordination of the planning system, and with case evidence revealing instances where approval had been granted in a matter of days, and with limited public consultation. Then an important contribution of this analysis was that financial incentives and their respective levels are only likely to be a small part of picture from the point of view of the inward investor, and with customised sites, and processual elements uppermost.
- 9.5.19 The complexity of the packages put together to either attract or retain inward investors is also considered by Brooksbank *et al* (2000). They note the interchangeability of assistance granted to large firms such that if they perhaps fail to meet RSA-based criteria, assistance can sometimes be found from other sources.
- 9.5.20 The importance of customised space and fast tracked planning procedures for inward investors is also explored by Phelps and Tewdwr Jones (2001) with case evidence from three large South Korean investment in the UK electronics industry. They argue that the planning system in the UK does not deal well with large strategic inward investments, with landmark FDI developments being essentially undertaken outwith the formal planning process, which was too long term in outlook to accommodate quick fire reactions to FDI.
- 9.5.21 This contribution also reviewed the significance of WDA strategies to identify strategic greenfield sites that were physically large, unconstrained, uncontaminated, and accessible. A concluding issue for Phelps and Tewdwr-Jones (2001) was the degree to which the nation state intervened directly at the regional scale specifically to regulate regional competition for FDI, given they were keen for devolved regions to be successful in winning such investment.

9.5.22 In conclusion identifying the precise role of incentives in the location decision is far from easy. Importantly, actual levels of more explicit grants such as RSA in the UK may provide a poor guide to the totality of incentives under offer, and with more contemporary research based on case material suggesting that the processual elements underlying the promotion and bidding process are perhaps as important as the actual packages on offer.

9.6 UK level evaluations of support frameworks for FDI

- 9.6.1 Evaluation of the effectiveness of policy towards FDI in the UK has historically focused more on the effectiveness of grants and subsidies offered under national programmes of assistance. Rather less research has been undertaken on the processual elements of gaining FDI 'leads', effectively marketing regions overseas, or linking FDI outcomes with total levels of promotional spending (but see UKTI, 2007).
- 9.6.2 Then in large measure the effectiveness of policy on FDI has been considered in conjunction with the effectiveness of policy in moving industry in general to more peripheral areas. Notwithstanding in several of the main evaluations (reviewed below) inward investment has been considered separately in the context of the fact that a large proportion of grants have gone to the foreign sector in value terms.
- 9.6.3 Several studies have attempted to draw inference on the effectiveness of policy interventions simply by considering how far regions have been successful in attracting FDI projects and jobs. Up until the early 1990s the then Invest in Britain Bureau made publicly available data relating to regional 'successes' in attracting foreign projects and related jobs. This led to the creation of league tables of inward investment successes. Unfortunately these types of tables gave limited consideration to the uneven playing field in terms of the number of assisted areas within competing regions, and the strength of regional institutions. Neither did the strict count of projects and jobs, take adequate account of the issue that the RDAs tended to count planned jobs associated with projects, with little recourse to how the actual out-turn related to what was planned at inception.
- 9.6.4 More academic debate on the effectiveness of grants and subsidies offered to foreign (and domestic) firms has a long vintage tied to more aggregate studies that have tried to examine the impacts of regional policy on employment changes in assisted areas of the UK. Given that foreign capital made up a significant element of total flows to the UK regions in the post war period it is worth briefly reflecting on several of the classic studies. These pieces of work were set in the context of:

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- Concerns over the costs per job of interventions such as Regional Development Grants (RDGs), RSA and Regional Employment Premiums
 - Issues surrounding the type of employment that was being created in grant assisted enterprises
 - The large number of grants (and in value terms) that went to foreign firms but with much of the determinants literature questioning the role of grants and subsidies as a key location motivation
 - Issues surrounding the extent to which grant assistance was going to certain types of firms with lower relative productivity levels, and with therefore less potential to close persistent GVA per capita gaps.

- 9.6.5 Some examples of key studies are now presented. Moore *et al* (1986) worked to examine the impact of labour and capital subsidies on employment in assisted areas for the period 1950-1981. This study revealed that each of automatic RDG, the discretionary RSA and REP had a positive effect on employment growth in the UK assisted areas.
- 9.6.6 Wren and Taylor (1999) performed an analysis which allowed for employment trends to be affected by regional specific variables other than the level of grants and subsidies available. This approach resulted in more cautious conclusions, with the automatic grants such as RDG actually causing a decline in employment levels. Wren and Taylor suggested that the automatic grants may have been used to improve efficiency and productivity. However, labour subsidies led to employment increases, whilst the results for the discretionary RSA were mixed.
- 9.6.7 Armstrong and Taylor (2000) make the point that these initial studies failed to focus on the firms that actually gained the assistance, and did not fully consider whether the assistance levels actually led to improvements in regional competitiveness.
- 9.6.8 Other work has focused on examining how far regional policy instruments can be connected to movements of inward investment into assisted UK areas. Armstrong and Taylor (2000) show that studies have followed two main directions. First has been work which examines why the aggregate movement of industry into certain areas changes through time. Second, analysis in a cross sectional setting that explores industry movements between regions over specific periods.
- 9.6.9 In terms of time series analysis key studies have been undertaken by Moore *et al* (1986) and Ashcroft and Taylor (1979). The former study revealed that discretionary and non-discretionary capital subsidies, and labour subsidies each impacted industrial movements to the UK assisted areas. Moore *et al* (1986) estimated that around 2,000 manufacturing firms moved to the assisted areas as a result of the various types of regional policy in the period 1960-1981. Ashcroft and Taylor (1979) also suggested a strong policy-led

impact with policy intervention causing 500 establishments to relocate over the 1960s, and with employment in the assisted areas increasing by over 100,000.

9.6.10 Cross sectional studies in the UK following Twomey and Taylor (1985) examined the influence of factors such as home and host region size, distance between regions and the attractiveness of regions. In these studies movement of firms between regions are positively related to the stock of plants in the home and host region, and negatively related to the distance between regions. Various variables define attractiveness including factor conditions and the availability of various incentives to movement. Using a model based on these types of conditions, Taylor and Twomey (1988) showed that an estimated 29% of manufacturing movements in Britain between 1960-1977 were down to location controls, and 13% due to investment incentives.

9.7 Recent evaluations of RSA

9.7.1 More recent evaluative work has worked to estimate cost effectiveness of interventions (particularly in terms of employment creation), and with continued analysis of issues surrounding deadweight and displacement effects (with new foreign investment often assumed in practice to create little displacement impacts).

9.7.2 In terms of the impacts of regional grants there have been a series of studies (for example, King, 1990; PACEC, 1993, Arup, 2000; Hart *et al.* 2008) which analyse the direct employment effects and seek to allow for multiplier and leakage effects, deadweight and displacement. The boxed sections below highlight some of the key elements of more recent studies, and we underline elements focusing on foreign investors.

9.7.3 Each of the studies has battled with the issue of establishing how far a location decision was due to the assistance offered or the promise of that assistance. Moreover, where evaluation has focused on the discretionary RSA there is a problem that a location or re-investment decision may have been impacted by non-RSA components of the offer. This type of problem is alluded to by Brooksbank *et al* (2000) who quote a case where a Welsh firm was refused an RSA application of £25m, but subsequently went on to be granted £19.5m in other types of assistance. More generally where studies have relied on industry survey there is the problem that respondents may not actually know what the key factors actually were in initial feasibility work on sites, with plant level staff not always involved in strategic site selection.

9.7.4 The core studies of RSA (King, 1990; PACEC, 1993; Arup, 2000 and Hart *et al.* 2008) have attempted to come to conclusions on the additionality of the assistance. Wren (2005) provided a useful critique of the King, PACEC and Arup evaluations and suggested that additionality for the three studies would imply

that around 18% of projects would have gone ahead unchanged even without the assistance, 24% would have occurred at a later date (i.e. the availability of assistance brought forward the investment plans), 14% would have gone ahead at smaller scale (i.e. the grant assistance made the projects larger than they otherwise would have been), 13% would have gone ahead outside of the UK, 5% would have gone ahead elsewhere in the UK, 5% some combination of the previous, and 21% would have been abandoned without the assistance.

Box 9.1 Headlines from recent UK RSA and related grant evaluations: ARUP

Evaluation of Regional Selective Assistance 1991-1995,

Arup Economics and Planning, September 2000, for DTI/National Assembly for Wales/Scottish Executive:
<http://www.berr.gov.uk/files/file22008.pdf>

Report assessed the impact of the scheme in delivering net additional jobs in the Assisted Areas of Great Britain, and to assess cost-effectiveness.

5,377 projects, £1.1bn, create/safeguard 210,000 jobs.

“...While almost 90% of projects were from UK owned-companies, internationally-owned companies accounted for almost 50% of the grant offered, reflecting the larger scale of projects implemented by such companies...”

Duration of RSA assisted jobs (job years)- gross employment estimates were adjusted to take account of expected life (based on capital asset life) to derive permanent job equivalent estimate: 100,000 over period 1991-1995; expected average job life was about 10 years.

Additionality- In the absence of RSA it was found that as a proportion of grant aid 20% of projects would have gone ahead unchanged; 18% would have been abandoned; 14% would have taken place elsewhere in UK but outside Assisted Areas; 9% would have occurred more slowly; and 9% on a smaller scale or on an otherwise different basis. For larger projects the refusal of the RSA grant would most likely have resulted in an alternative location being chosen.

Displacement- About 20% of additional jobs were estimated to have displaced those from elsewhere in the Assisted Areas.

Net Cost per net job- £17,500 per net permanent discounted job in 1995 prices (internationally-mobile £17,776 against non-internationally mobile £17,224).

Net permanent job equivalents (adjusted for deadweight, displacement & linkage effects) estimated that almost 40,000 net discounted permanent job equivalents were supported as a result of RSA (1991-95)

Section 8, pg.61-65 Internationally Mobile Projects- foreign-owned projects comprised some 10% of projects and 49% of the total grant offered over the period 1991- mid 1995: Internationally mobile projects comprised some 10% of all projects and 38% of the total grant offered;

“...The proportion of respondents that suggested that in the absence of RSA the projects would have proceeded in the rest of the EU (19% of net grant paid), was lower than suggested by the site search (32% of net grant paid), but was similar to the actual number of projects that considered locations in the rest of the EU. This confirms the accuracy of direct additionality claims and suggests that RSA was highly significant in the location decision...” p.64.

“...Additionality ratios were slightly higher in internationally mobile cases than non-internationally mobile cases. Assisted Area displacement was also lower and linkage effects are slightly higher. Notwithstanding these differences, cost per net job was slightly higher than for non-internationally mobile...” p.65

Box 9.2 Headlines from recent UK RSA and related grant evaluations: NIERC

Northern Ireland, "Evaluation of the Effectiveness of Financial Assistance to Industry"

Northern Ireland Economic Research Centre, Queens University Belfast & University of Durham, April 2002

<http://www.detini.gov.uk/cgi-bin/downutildoc?id=1000>

Split into two sections looks at Selective Financial Assistance (as operated by the Industrial Development Board), and Support for Innovation and Enterprise. First part compares assisted and non-assisted plants and compares outcomes to identify whether SFA made a difference.

FDI:

"... 1.5- With regard to SFA that was aimed at larger indigenous and FDI firms, there was a concern that policy was not leading to the self-sustaining growth required to shift the NI economy away from one of dependence to that of a dynamic, self-reliant economy. Indeed, there was a major concern that much SFA resulted in a culture of reliance on government continuing to transfer resources from the public to the private sector, in the form of grants and loans, and therefore significant deadweight loss (and possibly displacement)..."

1.55- SFA reduces "...start-up or relocation costs of investing in a peripheral region like NI. It is likely that FDI would be adversely affected if SFA involving capital grants were withdrawn...."

Drawback of SFA: "...1.63 ...FDI is unlikely to be attracted by just 'soft' grants – much of the innovation by such firms is undertaken in the home countries from which they originate. Also, the level of assistance available through such 'soft' loans (which is not linked to production activities in the main) is unlikely to be enough to make NI an attractive location (i.e. offset other locational costs associated with the province)..."

Box 9.3 Headlines from recent UK RSA and related grant evaluations: DTI

Regional Grants in England, The Department for Trade and Industry:

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL HC 702 Session 2002-2003: 17 June 2003

http://www.nao.org.uk/publications/nao_reports/02-03/0203702.pdf

Executive Summary pg 7

"...21 Our conclusion is that regional grants have led to a number of additional jobs in disadvantaged areas, but probably fewer jobs and at a higher cost than the latest evaluation had estimated. Evidence on broader effects on competitiveness is mixed, with some evidence of low-level training benefits, and technical benefits from inward investment. Plants supported by Regional Selective Assistance have improved their labour productivity, but so have non-assisted plants within the Assisted Areas. Overall effects on productivity were not large, and although evaluation methodologies and assumptions varied, the Department assessed the Scheme, as administered up to 1998, as relatively poor value for money in generating productivity improvements compared with some of its other schemes.

Pg.15

"...Our discussions with Department and Development Agency staff revealed a general belief that Regional Selective Assistance remained an important and effective tool for attracting inward investment and encouraging indigenous companies to remain in the Assisted Areas. This was particularly the case where companies had a choice of possible locations in Britain and overseas. Staff also believed that assisted projects provided a substantial 'knock-on' effect beyond the assisted firm, raised skill levels and productivity through the supply chain and in competing firms, and created further jobs although they were unable to quantify the effects. Staff identified, however, a number of challenges in the administration of the schemes and the appraisal of individual grant applications..."

Pg.32

"...There were ambiguous results about the impact of foreign ownership on efficiency. Some analyses showed that foreign-owned plants were more efficient than domestic plants, but this might be the result of their greater scale. However, the evidence suggested that where foreign-owned plants were more efficient than their domestic counterparts, this effect was stronger in non-assisted regions than in assisted regions. Thus, to the extent that the goal of promoting inward investment was to raise efficiency, location of such investment in Assisted Areas was not ideal..."

Pg 33

"...These findings suggest that there are some competitiveness and productivity benefits from inward investment supported by Regional Selective Assistance. But there is no strong evidence that the scale of benefit is substantial. And there is also evidence that there is some tension between maximising productivity and competitiveness benefits, and securing location of the investment in Assisted Areas.

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- 9.7.5 The Arup (2000) study on RSA suggested that between 1991-95 210,000 gross jobs were created by the scheme. Net additional jobs were around 84,000. Foreign firms accounted for around 10% of offers but nearly 50% of the value of offers in the 1991-1995 period.
- 9.7.6 Each recent RSA study has attempted to discount net job creation to produce an estimate of present value job years. Here it is usually assumed that the created jobs last as long as the manufacturing assets. Wren (2005) concluded that there is some disagreement in the precise methods to be employed in discounting, and with additional concerns on the value of evaluations based on industry surveys with the danger of optimistic estimates of additionality.
- 9.7.7 In a similar vein Gillespie *et al* (2001) also raise issues with the displacement and multiplier impacts of RSA. They acknowledged that the issue of additionality had featured heavily in RSA evaluation, but that inadequate attention had been given to regional system wide displacement and multiplier effects, and with extant studies of RSA focusing on displacement in product and not labour markets, and ignoring spatial capacity constraints. Where RSA resulted in crowding out and wage increases then impacts of RSA were shown to be in danger of being serially overstated. Gillespie *et al* suggested a CGE approach capturing capacity, regional wage bargaining, and migration constraints. They concluded that conventional attempts to quantify the multiplier and displacement effects of regeneration policy are almost certainly well wide of the mark, and do not take enough account of labour market failures.
- 9.7.8 Taking the RSA evidence into account Wren (2005) shows that for the 1991-1995 period that over 210,000 gross jobs were connected to the scheme, and 84,000 net jobs after allowing for non-additional jobs, displacement and multiplier effects. Indeed taking the three periods of RSA from 1980-84. 1985-88 and 1991-1995 he concluded that: "Overall evidence is that RSA performed well. The survey results find that additionality is achieved in 80% of projects and there is an absence of Type II error (i.e government offers too much grant to a firm that would have proceeded with no grant or reduced rate of grant) in half the projects. Further the grants seem to have had a major impact on locating large FDI projects, albeit at an international level, while there is evidence that they have other beneficial effects, such as on competitiveness". (p.267)
- 9.7.9 However, other work has been more questioning. National Audit Office (2003) examined regional grants in England (RSA and Enterprise Grant Scheme) and strongly questioned methods of evaluation being employed, and with their review (undertaken by NERA) showing that while there were some

competitiveness and productivity benefits from inward investment supported by RSA, that there was no strong evidence that the scale of benefits was substantial (p33).

Box 9.4 Evaluation of Regional Selective Assistance (RSA) in Scotland 2000-2004

Hart, M. *et al.*, For the Scottish Government. Research Findings No.1/2008
<http://www.scotland.gov.uk/Publications/2008/03/20102544/3>

Background

"...research carried out by Kingston University, Aston University and the University of Warwick between March 2006 and October 2006 examining the outcomes of funded projects and an overall assessment of the effectiveness of the RSA Scheme in terms of value for money and efficiency..."

"...While it is important to derive an average effect of intervention upon recipient businesses the challenge is to understand the ways in which the intervention can achieve a set of positive outcomes. For that reason, we included questions in the survey on the ways in which RSA assistance helped change the behaviour of the firm in terms of, for example, enhanced technical capacity, improved production processes, upgrading labour skills and the strategic thinking of management..."

Findings

Overall, 360 firms/plants in Scotland in the period 2000-04 received an offer of RSA financial assistance totalling £126.6m (average grant of £351,648; median £100,000).

Four-fifths of the assisted businesses were UK-owned with the vast majority of these being Scottish-owned firms and/or plants. Around a tenth of assisted cases, irrespective of ownership, were relocations from elsewhere in the UK. Scottish-owned businesses received significantly lower levels of financial assistance compared to both foreign-owned businesses and projects from the rest of the UK (Scottish owned businesses are primarily SMEs).

Overall, the econometric modelling results of the effects of RSA assistance, which include a non-assisted control sample to embed the counterfactual situation, were broadly supportive of RSA interventions and encouraging for policy makers.

"...The employment growth equations for Scottish firms and externally-owned multi-plants (primarily inward investors) indicate that, after controlling for selection bias in the assisted sample, RSA support in the period 2000-04 was positively and significantly related to employment growth in the period 2004-06. However, there was no similar relationship between assistance and productivity* (measured as sales per employee) and sales..."

"...**Levels of deadweight** (i.e., wholly non-additional) from RSA-assisted business and/or plants **appear low** with the majority of firms citing some form of partial additionality in terms of either having achieved business outcomes more quickly or to a greater extent. Complete additionality occurred in around 29 % of cases..."

"...**Cost-per-Job (CPJ) estimates**, using two methods derived from the econometric analysis, indicate that the cost-per-net additional job for the RSA Scheme in Scotland (2000-04) range between £16,591 and £43,024 using the amount of assistance offered, and between £13,273 and £34,419 on the actual amount of assistance paid. The most relevant figures are the CPJ estimates based on the actual amount of money received by the assisted firms and plants..."

"...We also generate estimates for the **additional value added generated by the RSA** scheme in Scotland in each year. Using the higher CPJ estimate of £34,419, therefore, suggests that RSA financial assistance in Scotland provided between 2000 and 2004 – a total of £126.6m – has generated 2,944 net additional jobs and that these jobs are increasing total Scottish and UK value added by £59.3m pa compared to a broadly based employment counterfactual (assuming that the people employed in the assisted firms would have gained employment in other non-assisted businesses)..."

"...Overall Assessment of the RSA Scheme

Reviewing the range of evidence from this evaluation study, it is our view that the operation of the RSA Scheme in Scotland over the period 2000-04 has met its objectives in terms of job creation by supporting investment projects in firms and plants located in Scotland that might not otherwise have taken place, or proceeded on the scale or timescale originally anticipated. There would appear to be a significant degree of additionality associated with RSA grant support to create jobs in both Scottish and foreign-owned businesses. Further, it has achieved these results in a cost effective way and with significant positive short-term returns to the Scottish economy..."

9.7.10 Finally here, a more recent contribution from Jones and Wren (2008) question the impact of various grants and subsidies in the UK case, with Wales, Scotland and the North east of England tending to gain shares of UK FDI similar to their shares of UK employment, and with the South East re-emerging as the strongest FDI location in the UK. Jones and Wren show that the South East share of foreign-owned investment increased year on year after 1990, and even when the region's greater size was taken into account, it had attracted more FDI than any other region in the period after 2000. Conversely there was a sharp decline in the share of FDI projects going to the Assisted Areas from over 90% in the early 1990s to around 40% in 2005, and with this fall only loosely related to the pattern of grant offers.

9.7.11 Jones and Wren then empirically examine the distribution of UK FDI and the role of grants and subsidies, and find that over the period 1985-2005 that grants and subsidies had an impact on FDI distribution, but that these effects had declined over the period, largely they suspect, because of declining spending on grants and subsidies in the new Millennium. They conclude that grants may have more of an impact on early stage location, but that over time agglomeration factors become increasingly important.

9.8 Evaluations in Wales

9.8.1 There have been a number of accounts relating to the use of grants and incentives to attract inward investment to Wales. Much of the academic evidence and debate was reviewed earlier in Section 8. Here we review the latest evaluation of general inward investment activity undertaken by PACEC (2001).

9.8.2 Much of the general context for this evaluation of WDA inward investment activity in 2001 centred on the extent to which the institution had an undue focus on inward investment attraction at the expense of indigenous industry development. Some of these types of concerns were outlined in the report of the Welsh Affairs Committee in 1998 (see boxed section below) which raised concerns about the efficiency of inward investment promotion overseas, and how far attracted FDI could be connected to exports. Indeed the Welsh Affairs Committee seemed to advocate a further move away from an 'inward investment' model of economic development towards one based on indigenous enterprise. By the mid-90s there had been questions raised on the efficiency of selected WDA functions, and the provided further context for the wholesale restructuring of the organisation following devolution.

Box 9.5 House of Commons (1998), Investment In Industry In Wales

Welsh Affairs Committee Fourth Report, House of Commons Session 1997-98, HC 821.
<http://www.publications.parliament.uk/pa/cm199798/cmselect/cmwelaf/821/82103.htm>

"...In our view, more needs to be done to monitor and evaluate the effects of inward investment projects on the local economy, and thus the cost-effectiveness of public sector support for such projects..."

"...The WDA must adopt a more strategic approach to attracting inward investment and dedicate sufficient resources to identifying potential international growth markets, perhaps ten years ahead. Targeting key sectors must be part of that approach..."

"...We would urge the National Assembly to look carefully at the WDA's overseas offices to ensure that they provide good value for money. there may be scope for using the resources currently allocated to attracting inward investment more efficiently by linking them with export promotion..."

"...While we would want the WDA to ensure that inward investors consider sites in West and Mid Wales, and believe that the grant regime should be weighted to encourage this, it is essential that we do not lose for Wales high quality investors who are only interested in location in the East..."

"...There seems to be a growing consensus that the key to future economic growth in Wales is in developing indigenous industry... Encouraging indigenous businesses to expand, and new businesses to start up, is the only realistic way of creating new jobs and increasing prosperity in rural Wales.... We share the view that the old WDA concentrated on inward investment at the expense of indigenous industry. Promoting inward investment and indigenous growth are not mutually exclusive - indeed we accept that they can be complementary - but it is time to shift the balance of emphasis and funding in favour of indigenous industry..."

9.8.3 The PACEC (2001) report examined the effectiveness and achievements of WDA inward investment activities and the process of delivery. Much of the report was based survey responses from investors and face-to-face interviews. Part of the report treated with the motivations for coming to Wales, and found that site availability and premises was very important or important in 80% of inward investment cases. The report highlighted that it was the range of services that were provided by the WDA that were important to inward investors (i.e. not just grants and financial assistance). The report using the industry survey gained some insights into project additionality. The conclusion here was that nearly 40% of projects in Wales would have gone ahead even without WDA International Division services. That 35% would not have gone ahead without the supports offered, with 25% either expected to occur at a later date or at a smaller scale without the supports offered. In terms of employment it was reported that 39% of industry respondents attributed all employment to the package of assistance and services offered, with 28% having fewer employees associated had it not been for the package of assistance, and with 33% reporting no additionality whatsoever.

Box 9.6 Welsh Development Agency Inward Investment Final Report, PACEC, August 2001

Report prepared by PACEC, on behalf of the WDA, with the aims of assessing the effectiveness and achievements of the WDA's inward investment activities from 1995 onwards. The inward investment activities explored were those services WDA provides to generate interest in new projects for Wales and the aftercare provided to encourage further expansion.

Pg.43 4.5.2 **Deadweight?**

"...there was a roughly equal split between projects which would, and projects which would not, have gone ahead in the absence of WDA encouragement and support.The very important result from this part of the survey, however, was that the WDA's services had a major impact on job creation..."

"4.5.4 ...four fifths of the respondents...indicated that they found Wales a more attractive investment location as a result of their contacts with the WDA..."

Pg 3 of Conclusions & Policy Implications section 8

"...The **main reasons for locating in Wales were the availability of sites and premises**, followed by proximity to customers, grants, the presence of a pre-existing company facility and labour supply factors..."

"...The **services offered by the WDA and its partners which were regarded as most valuable by inward investors are related to site/ premises** (including identification, negotiation, feasibility studies and provision), grants/funding, especially RSA. The latter is not delivered directly by the WDA..."

Pg 4 of Conclusions & Policy Implications section 8

"...**Without WDA support and assistance, about a third of projects reviewed would have gone ahead**, a third would not, and a third may or may not have gone ahead. Of those that would have gone ahead, the timing and scale would probably not have changed. In general the large projects (100+ employees) would not have gone ahead and the smaller ones (<100 employees) would have gone ahead mostly unchanged. Again, WDA services have more impact on the larger inward investors than on smaller ones..."

"...The **specific services that play the biggest part in encouraging inward investment** are information provision/ networking by WDA International Division, and the grants/funding and premises which forms part of the services of the inward investment support package provided by WDA's partners..."

9.8.4 Section 10 next provides some conclusions relating to the policy review of Stage 3 and more general conclusions and research questions arising from the wider report.

10 Conclusions and future research

10.1 Direction of the review

- 10.1.1 The report as a whole has attempted to give an overarching review on issues relating to the determinants of FDI, the impacts of the MNE, and then a consideration of the policy literature regarding interventions to either attract foreign capital or support MNE activity in the host.
- 10.1.2 The study of the economics of the multinational is found to be increasingly complex, and with this reflected in the streams of FDI determinants literature. Ultimately it is very difficult to pick up on the various motivations underlying the decision for a final investment location.
- 10.1.3 The review of global, UK and UK regional trends in FDI evidences the growth of the global FDI stock and the growing significance of FDI to the UK and its regions. In the Wales case the hypothetical extraction of the foreign-owned sector in total would leave remarkably little behind. Policy intervention to develop the indigenous industry base through the 1990s and into the new Millennium has been undertaken at a time when overseas ownership of the manufacturing and services industry base in Wales has increased, and at a time when the region has become more open and integrated into the global economy.
- 10.1.4 The report shows that FDI motivations do link through to expected impacts of FDI. The report covered FDI impacts under a number of headings speaking to issues of productivity spillovers, competition effects, value chain effects, employment, HRM, and industrial relations impacts. This review revealed that many of the impacts (positive and negative) are actually down to firms being multinational rather than foreign, with strengths a function of structure as much as ownership. In the Welsh case the foreign sector is associated with strong economic impacts, set against a series of expected costs in terms of loss of control loci and limited functionality. While critics highlight that the FDI boom experienced by Wales in the 1980s and 1990s has not led to an underlying change in the structure of the regional economy, the conclusion remains that alternatives are unlikely to have been associated with the same scale of benefits.
- 10.1.5 The review of interventions tended to focus on more explicit policy instruments. This review highlighted the welfare impacts of competition from FDI and the negative impacts of bidding wars for foreign projects. The review showed similarities between the policy instruments used across developed states to

attract FDI, and demonstrated the need for constant innovation in inward investment policy development.

- 10.1.6 We now focus on some conclusions arising from the Stage 3 policy review, before finishing the report with conclusions from the wider report, and with a consideration of further research issues.

10.2 Some conclusions from the policy review with reference to Wales

- 10.2.1 It is clear that the role of FDI in the UK regional economic development toolkit is not as prominent as it was during the 1980s. During the 1990s there has been a far greater focus on indigenous firm development, and improvements to the supply side of the economy. Moreover, the level of funds available to market the regions overseas, and to provide monies for grants and other types of assistance has fallen, and with regional development authorities in the round having to be careful to work within EU rules on subsidy payments to inward investors.
- 10.2.2 The changed policy background has also occurred when there have been real pressures brought about by greater competition, particularly from the Accession states, and pressures to ratchet up the grants and subsidies available to well informed large inward investors. There is also strong competitive pressure from other regions of the UK. For example, IBW revealed² that it currently competes on IT and software and financial services sector projects with other regions of the UK as opposed to other parts of the EU. In the current environment the Welsh Assembly Government and its local partners have to work harder and harder to attract FDI.
- 10.2.3 Leading from this an initial issue is the extent to which the policy stance of using scarce resources to market Wales, and offer various assistance to incoming firms, can be justified. One of the problems facing each of the UK regions in this respect is the paucity of evidence of how precisely the market actually fails in the inward FDI case, and with this report revealing the questionable additionality associated with different types of intervention to encourage on foreign industry location.
- 10.2.4 The review pointed strongly that there are problems of deadweight, and wasteful competition in inward investment attraction. Some proportion of firms would locate regardless of assistance offered. The evidence for overt rent seeking by firms entering Wales is weaker, and it is unlikely that the explicit levels of assistance available, at least in RSA terms, are sufficiently high to encourage this type of behaviour.

² Information derived from email from IBW, 10th July 2008.

10.2.5 However, this still leaves Wales with strong European and UK-region competition to attract the largest inward investment projects, and with evidence of incentive bidding for these projects with welfare reducing effects. Indeed the devolved administrations in the UK are found to have a competitive advantage in the processual elements of bidding for strategic projects.

10.2.6 The review went on to question the role of grants and subsidies as a key location determinant for FDI. In part this may merely show that comparative levels of assistance are available across the board, such that it is difficult to conclude authoritatively on their underlying role in a UK and EU frame of reference. It may also reflect that empirical studies find it difficult to pick up on more latent forms of support such as subsidized infrastructure, sites and premises, support to improve the quality of life of foreign firm expatriate employees, and even the way in which the more explicit forms of support are activated.

10.2.7 Sitting adjacent to the concerns over the effectiveness and/or desirability of intervention is a stronger evidence base speaking to the economic impacts of FDI. There are valid concerns about the functional base of much of the Welsh FDI stock (see below) but the contribution of FDI to output, employment and exports is well established. There is also evidence of spillovers in local value chains. Indeed during the 1980s in particular, and with massive problems facing Wales, it is not clear whether there were actually any real alternatives to attracting foreign capital to fill the gaps left by structural decline. Moreover, proponents of the 'inward investment model' of development might point to a stronger evidence base of regional economic impacts when compared to policies to promote SME development where real additionality of policy resources can be very difficult to establish.

Box 10.1: Some policy development issues

- Competition across the EU has become intense and endemic with some limited evidence of a ratchet effect which has been intensified through the accession process
- Competition may be particularly intense between near neighbours, where regions have similar incentives to offer; and may be particularly intense at subnational levels
- The role of the expanding EU/Transition Economies
- There have been incidences of RDAs attempting to poach projects from one another
- There is a clear concern that incentives might reduce both national and international efficiency

10.2.8 In the following paragraphs are shown some of the general issues that need to be reflected on in the Welsh policy development case following from the review.

10.2.9 First, there is a need at a regional level to reflect more carefully about whether the types of assistance offered to firms should be better connected to the expected level of benefits. Clearly this has ramifications for the time profile of assistance being offered. There is a strong regional kudos in winning large inward investment projects. However, it is possible by looking at the motivation for the inward investment decision, the sector involved, the expected levels of earnings, and the stage of the cycle reached by the reference project products, to provide some predictions about the likely future embeddedness of the project, and the potential for drawing down higher order functions to Wales. Basically, there are some types of projects from which one would expect greater development potential, but it is not clear whether these are 'rewarded' in the process.

10.2.10 Second, and associated with the above, is how far policy can be steered such that Wales begins to attract inward investors who bring HQ-type functions. Pervading the impacts section of this review for Wales has been the persistent problem of the functionality of the FDI stock. The uncomfortable issue is that a large part of FDI manufacturing stock is still characterized by the branch plant syndrome, and with these problems now being carried forward into much of the services FDI entering the regional economy. This undoubtedly feeds through into the type of low skills equilibrium that acts to maintain productivity gaps between the core and the periphery of the UK.

10.2.11 There is clearly a strong market to attract HQ type operations. UNCTAD in their 2003 *World Investment Report* for example, estimated that over 800 HQ operations were newly established or relocated between January 2002 to March 2003, and stressed the importance of location determinants associated with international accessibility, labour quality, low taxation rates, and ICT linkages. Some states have tried actively to attract HQ style operations, For example, during the 1990s Australia launched a regional HQ initiative which used incentives such as tax exemptions on selected imported capital equipment and set up costs, exemptions from some dividend related taxes, and streamlined immigration procedures for expatriate staffs. They also instigated a strong 'campaign' element, for example targeting the managers of foreign subsidiaries in Australia, working to make them 'champions' for the area. This campaign saw some success with 121 regional HQs set up during the programme. Similar initiatives have been undertaken in Malaysia (see Avenell, 1996). Ireland has also enjoyed some success in its attempts to attract HQ type functions, but this required a shift change in policy. Then an issue for Wales is how far policy resources can be tailored to attract, not just particular sectors of investment, but particular functions.

10.2.12 Third, and related to the above, the review raises some questions about regional development policies that have increasingly focused on inward investment sectors as opposed to functions. At the very least more consideration needs to be given to functions within targeted sectors, and it is noteworthy that IBW already considers the functions that inward investors bring to Wales in their marketing efforts. The Welsh Assembly Government has worked to prioritise selected industries for special attention. These sectoral targeting policies face a series of problems, but on the positive side, the preceding review in questioning the role of grants and subsidies to inward investors, would give support to new economic geography approaches which highlight the greater importance of agglomeration factors in firm location decisions.

10.2.13 In this sense the more targeted approach to selected sectors, and building network capacity and infrastructure to support the same, might be expected to become a more important location determinant when grants and subsidies are more equalised across space. Even in cases where Wales cannot compete on absolute levels of grant assistance, it might better compete in terms of appropriate and tailored infrastructure. Indeed the last evaluation of WDA inward investment activity undertaken by PACEC (2001) strongly flagged the importance of appropriate sites, premises and infrastructure for inward investors.

10.2.14 A fourth issue is the extent to which location marketing resources should be channeled to manufacturing-type investments. Section 4 of the report revealed that GVA per capita was stronger in the manufacturing as opposed to the services sector. In the Welsh case the bulk of the academic and government sponsored research has focused in on manufacturing, yet we have less knowledge about the policy instruments that might be pertinent to developing the services sector.

10.2.15 In this context the report reveals that the largest numbers of UK FDI jobs are in sectors such as real estate, tourism and leisure, and then financial and business services. Whilst research resources may need to be focused on services, the report as a whole in Section 4 reveals that the foreign manufacturing sector is still very important to Wales. For example, analysis of the information in Section 4 shows that when one removes the foreign sector, there is in fact remarkably little left with foreign firms accounting for around 40% of employment, and nearly 60% of manufacturing sales. Then an important conclusion here is that future productivity growth in Wales will be tightly associated with events in the foreign-owned sector.

10.2.16 Fifth, there is a need to for policymakers in Wales to question how well policies of location marketing to inward investors are integrated into overall regional economic development strategy in Wales. The links between dynamic changes in the FDI stock, the presence of new investors, and policies towards

indigenous firms have not always been made clear. Then focusing resources on FDI is not necessarily at odds with the promotion of the indigenous business sector. Furthermore, discussion of FDI and its role tends to be sidelined in documents dealing with the EU structural funds. There is a need for clarification of how policies encouraging FDI into Wales can be associated with the convergence programme, and how far the use of Structural Funds leads to benefits for the foreign sector.

10.2.17 Sixth, are issues of comparative cost effectiveness. How far has analysis in Wales actually compared the cost effectiveness of resources used in marketing and grants to attract inward investment, with the funds employed to encourage SME development and entrepreneurship? The Mid-Term evaluations of the EU Objective 1 funds suggested that there were high levels of deadweight associated with selected Priorities and Measures to encourage indigenous sector development. As yet there has been very little by means of comparative work on the two broad streams of activity. As funds to support regional development become increasingly tight in future public spending rounds issues of comparative cost effectiveness will become more and more important.

10.2.18 Finally here there are a series of more specific issues to consider.

10.2.19 A number of potential foreign entrepreneurs pass through Wales to be educated, and domestic alumni may go on to positions in UK and foreign MNEs. Many of the students develop links here. Practically there is a question on how far these contacts are developed and whether investment opportunities are sought through this route.

10.2.20 Policy interventions do work with existing inward investments. At a time when there are pressures for rationalization and restructuring across multinational groups there is a need to ask how far the policy community works with these firms to empower local managers themselves to market Wales as a location for development and re-investment. There are good cases in this respect (see INA Bearing at Llanelli where managers made a strong business case for re-investment) to illustrate what might be possible for more proactive managerial teams, and potentially a role for the Welsh Assembly Government in disseminating the case evidence.

10.2.21 The review of impacts suggested that productivity spillovers are due as much to structure of the firm as to ownership. In this regard then similar regional impacts might be gained from attracting UK MNEs to set up operations in Wales. Clearly, there is a need to be careful of displacement effects, but there are questions on how far marketing resources are distributed between seeking overseas as compared to domestic firms.

10.2.22 In conclusion in the strongly competitive environment to attract inward investment there will be an increasing need for more innovation in policy

approaches, and with the impact of explicit and blanket instruments such as grants, reducing through time.

Box 10.2 Concluding policy questions

- Do we really know how the market is failing with respect to FDI in the regional case?
- Can we link spending on promotional activity and incentives to the scale of economic outcomes?
- Can we link subsidies provided to the types of impact expected?
- How far can a devolved Wales be innovative in regard to policy towards inward investment?
- How far are those involved in location marketing rewarded for working to attract FDI projects with greater potential impacts for the regional economy?

10.3 Potential future research directions

10.3.1 This final section outlines possible research priorities for the Welsh Assembly Government in respect of FDI.

10.3.2 In making these recommendations we are mindful that a great deal of research on FDI has already taken in Wales led by both policymakers and the academic community (in and outside of the region). The review showed that a stream of work has already examined the determinants of FDI location into Wales, and with a larger body of work examining various impacts issues in economic, social and cultural terms. Moreover, a stream of work on FDI continues. For example, the Welsh Assembly Government, has recently supported research examining the determinants of exits of FDI in the Welsh case (by Swansea and Cardiff University), and with a project examining the issue of business ownership in the region (by London Economics). It will be important to consider the findings of these pieces of work with the conclusions from this review. However, the evidence base on FDI is relatively extensive in the Welsh case, and with one policy challenge to fully reflect on this base in future policy development.

10.3.3 However, the review points to some gaps in the research base.

10.3.4 First, policy development with respect to FDI attraction and location marketing to inward investors could benefit from research that reflects more critically on the processes that firms adopt in actually making their decisions for Wales (and not). For example, in the current climate there is value in reflecting on, for example, how far local teams of managers in subsidiaries can work to influence re-investment decisions? Moreover, are there common patterns emerging in projects that Wales has won in terms of the marketing channels and tools used. Then the review in this report would argue for less of a focus on the explicit

tools of grants and more investigation of the processual side in marketing, and inward investment decision making. With this type of research in place policymakers might be better placed to examine how policy instruments work to change decision maker behaviour.

10.3.5 Second, the review provided some evidence of the growing importance of services FDI in the Welsh case. Much of the research reviewed has focused on manufacturing sectors (particularly work in the UK regions). Regional intelligence on services FDI is still comparatively limited. For example, little is known in the UK case about the determinants of services FDI. Other issues relate to the extent to which productivity spillovers result from the presence of services FDI, and how these compare to those evidenced in the manufacturing case. Furthermore, how far does the FDI services base locally source, and what are comparative operating and employment conditions like. Given the growing significance of services FDI in the Welsh case, a more thorough audit is required to identify high productivity components, and the extent to which services FDI faces the same structural limitations and functionality issues facing the FDI manufacturing sector.

10.3.6 Third, part of the review of policy and impacts has highlighted the low number of HQ-type operations in Wales (see 10.2.11 for examples of areas that have targeted HQ functions). This situation has been exacerbated by the processes of privatization of the larger utilities (and associated takeovers) in the 1980s and 1990s which took many regional HQ functions outwith the region. Research might examine the types of barriers to setting up HQ type functions in Wales, and then what sort of intervention might be required. In parallel there is a need to ask why those who have set up HQ functions in Wales been able to succeed. The lack of higher order functions amongst inward investors (and domestic firms) represents a real barrier to breaking away from the persistent type of low skills equilibrium which effectively works to maintain productivity gaps between Wales and other UK regions.

10.3.7 Fourth, there is a need for research to consider how issues such as climate change and increasing energy costs might impacts FDI trends into and out of Wales. Currently, the extended scope of the EU provides opportunities for firms to focus manufacturing operations on a smaller number of sites. However, increasing energy costs could conceivably work to reverse these centripetal pressures, creating the need to place activity nearer to final markets. In this respect Wales is still comparatively well placed having Tier 1 assisted areas close to the largest UK consumer goods markets. However, issues surrounding climate change, and energy costs may increase the pressures on some sectors to exit. For example, stronger regulation surrounding environmental externalities could increase the probability of exit for some sectors. A related issue might be the extent to which the developing environmental regulations might work to deflect certain inward investors from UK regions.

10.3.8 Fifth, there has been very little research that has examined the role of FDI in maintaining and improving the regional base of skills. UK studies have shown that foreign firms tend to use higher levels of skilled labour, but there is little information on the details. This is surprising given that it is known that selected foreign firms in the region place a very strong emphasis on training. This type of research is important because the review in Stage 2 showed that staff mobility can be a key driver of productivity spillovers, particularly at the local level. Then in Wales there could be value in research that shows the extent to which personnel within the domestic base have gained general and specific skills in the foreign sector, this providing a better evidence base for FDI-related policy in the regional context.

10.3.9 Finally, there is still relatively little known in Wales about how trends in FDI have affected regional imports and exports. The regional information base from HM Customs and Excise provides some insights into trade behavior of international firms in Wales, but there is still much to be done to understand how current trends in manufacturing exits will impact export performance, and for example, the extent to which services FDI has any positive trade impacts. Related to this is a call for better quality information on the FDI stock and flows in Wales. Data on the foreign sector in the region has improved markedly with organizations such as International Business Wales working to improve datasets on FDI inflows into Wales. Inevitably there is still a need for better intelligence regarding FDI outflows, and the composition of the FDI stock.

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Appendix 1

Table A1.1 Recent Contributions to the Literature on FDI Determinants

General studies of FDI location

Author	Issue relating to FDI determinants & geography of study	Key findings
Lim (2008)	Role of promotion agency in influencing FDI inflows (various states)	Examines effectiveness of investment promotion as a mediator between host FDI environment and FDI inflows. Effectiveness of investment promotion agencies (IPA), measured by IPA age, IPA's overseas staff intensity, and number of IPA staff, positively impact on FDI attraction. Concludes effective promotion can be useful means of gaining FDI via mediation effect that coordinates other determinants of FDI such as market size, market growth, and low labour costs.
Bang & Sung (2008)	US inflows into Korea ; 1980-2001	Examines Korea's FDI inflows from US and locational, financial, and macroeconomic variables using firm-level data on FDI transactions. Inflows have significant associations with real exchange rates, relative wealth, relative wages, expected exchange rate changes, and interest rate differences. Industry-specific factors also showed to have a role in determining FDI inflow.
Ang (2008)	FDI inflows determinants into Malaysia 1960-05	Real GDP found to have a significant positive impact on FDI inflows, and growth rate of GDP exerts a small positive impact on inward FDI. Concludes that increases in the level of financial development, infrastructure development, and trade openness promote FDI. On the other hand, higher corporate tax and exchange rate appreciation shown to discourage FDI inflows.
Kimono <i>et al</i> (2007)	Home country determinants of FDI into Japan	Results suggest that FDI into Japan is inversely related to trade flows, meaning that FDI and trade might be substitutes. Also suggests FDI increases with home political/economic stability. Highlights that previous results, on importance of exchange rates, borrowing costs and labour costs are sensitive to the econometric specification and estimation approach. In specific Japanese case cultural and geographic distance are of limited importance in explaining FDI.
Ismail & Yussof (2003)	Labour market competitiveness and FDI into ASEAN states	Analysis based on time series data on FDI, wages, the labour force, skills, R&D expenditure, the interest rate and variables important for economic development. Study shows that labour market determinants differ between countries in terms of impact on FDI inflows. Implies different states may need different policy recommendations in order to attract FDI inflows.
Tuan & Ng (2003)	FDI into China , role of agglomeration effects. Firms in Guangdong province 1998.	Examines the impacts of agglomerations on FDI including whether different industry FDI flows respond differently in the core-periphery system, given agglomeration effects; and if FDI source and scale affect FDI flows. Results show agglomerations impact FDI flow patterns, but manufacturing and services MNEs from different sources responded differently to the impacts.
Medvedev (2006)	Impacts of preferential trade agreements (PTAs) on FDI inflows, various states	PTA membership linked with positive change in net FDI inflows, and the FDI gains increase with market size of the PTA partners and their proximity to the host. Paper shows threshold effects (signing the agreement) and market size effects (joining a larger and faster-growing common market) are determinants of net FDI inflows.
Smarzynska & Spatareanu (2004)	Labor market flexibility affects on FDI flows; 25 Western and Eastern European countries	Firm level data on new investments 1999-2001 period. Shows greater flexibility in host labour market relative to that in the investor's home state is associated with larger FDI inflows, and this effect is found to be stronger in the case of transition economies. FDI in service sectors shown to be more affected than investments in manufacturing.
Clegg & Scott-Green (1999)	European integration and FDI into EC from US and Japan .	Focuses on effects of market size and growth on FDI, and impact of exchange rate effects on FDI. Model developed using comparable US and Japanese data on new FDI flows 1984-89. The data are clustered and pooled to enable intra-EC differences in the model to be investigated. New FDI linked to conventional host characteristics variables, whose effects vary considerably between groups of member countries. Differences for the USA and Japan attributed to the contrasting degrees

		of establishment of US and Japanese affiliates. For Japanese firms, as comparative outsiders (compared with US firms), the impact of single market more marked.
Grosse & Trevino (1996)	FDI into the US analysed by home origin	Evidence shows that the main significant positive influences are home country's exports to the US and home country market size. Significant negative influences include the home country's imports from the US, the cultural and geographic distances of the home country from the United States, and the exchange rate.
Galan <i>et al</i> (2007)	Location decisions of Spanish MNEs overseas	Examines links between choices and development of host state. Shows the importance that home country managers give to diverse location factors depends in part on the stage that each group of host countries has reached. Shows managers consider mainly factors associated with strategic asset-seeking when deciding to locate in more developed states; however, when selecting LDCs socio-cultural factors play a more important role, thus suggesting the importance of historical and cultural ties between the home and host.
Blonigen <i>et al</i> (2007)	FDI inflows and spatial interactions; US FDI	Examines how FDI in host might depend on FDI in proximate states. Shows estimated relationships of traditional determinants of FDI are robust to inclusion of terms to capture spatial interdependence, even though such interdependence is estimated to be significant. However, the traditional determinants of FDI and the estimated spatial interdependence are sensitive to the sample of countries examined.
Yung-Ming (2006)	Taiwanese outward FDI	Taiwanese firms with higher relocation costs and greater post-acquisition restructuring experience prefer acquisition to greenfield. Where it is important for firms to transfer specific technological resources to host and to avoid competition within their own industries in the foreign market, a brownfield strategy seems a compromise between acquisition and greenfield.
Fung <i>et al</i> (2005)	FDI into China and role of infrastructure	Uses information on FDI into various regions of China from 1990-2002. While controlling for regional market sizes, wage rates, human capital and tax policies, shows soft infrastructure consistently outperforms hard infrastructure as a determinant of FDI.
Chakrabarti (2001)	Meta-level study examining FDI determinants, various states	Examine whether conclusions from existing determinants studies are robust to small changes in the conditioning information set. Reveals robustness of the correlation between FDI and market-size, as measured by per-capita GDP, but indicates that the relation between FDI and many of the controversial variables (namely, tax, wage, openness, exchange rate, tariff, growth, and trade balance) are sensitive to small alterations in the conditioning information set.
Cooke (1997)	Industrial relations role in FDI inflows, US outward FDI to OECD	Examines influence of key industrial relations variables on US FDI across nine industries and nineteen OECD-states. US FDI shown to be negatively affected by the presence of high levels of union penetration, centralized collective bargaining structures, stiff government restrictions on layoffs, and pervasive contract extension policies. FDI was positively affected by high levels of education and policies requiring works councils.
Klein & Rosengren (1994)	FDI inflows; role of exchange rates, FDI to US	Context is correlation between inward FDI in US and the value of the dollar. FDI to US tended to decrease with a strong dollar and increase with a weak dollar.
Culem (1988)	Bilateral flows determinants, developed states 1969-82, US outward FDI	Impact of two locational determinants of foreign direct investment; shows impact of host market size and growth rate on US FDI in EC.
Yamawaki (2006)	FDI inflows from Japan and US into Europe during 1990s	Shows location decisions of US and Japanese manufacturing MNEs not the same. The Japanese results are consistent with the behavior that firms consider production-cost factors more important than demand-side factors, suggesting Japanese firms' motive to establish local production capacity to export within the EU market. On the contrary, both cost-side and demand-side factors are found important determinants of location choices for US firms. The results also suggest that location decisions are industry-specific.
Buch <i>et al</i> (2005)	Outward FDI by German firms	Examines determinants of the activities of German MNEs demonstrating relative role of country-level and firm-level

		determinants of FDI. Finds market access motive for internationalization dominates. Firms move abroad mainly to gain better access to large foreign markets. Cost-saving motives important for some manufacturing sectors. This research also notes positive agglomeration effects for the activities of German firms that result from the number of other German firms that are active in a given foreign market
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Recent FDI determinants papers focusing on sectors

Li & Moshirian (2004)	FDI in insurance services in US ; determinants	Reveals economic fundamentals in hosts are key determinants, while uncertainty of the international exchange market increases the investment risk and reduces foreign investors' willingness to invest. Results implied national income, the source countries' insurance market size and financial development of the host countries contribute to the expansion of FDI in insurance services, while the relatively higher wages and higher cost of capital in the host countries discourage FDI in insurance services.
Love (2003)	Sectoral FDI flows between US and OECD , 15 year period	Examines technology sourcing versus technology exploiting hypotheses for panel of sectoral FDI flows. Shows evidence that FDI flows to US are attracted to R&D intensive sectors, very little support is found for the technology sourcing hypothesis either for inward or outward FDI flows. The results suggest firm-specific 'ownership' effects remain powerful determinants of FDI flows.
Moshirian (2001)	FDI in banking (US, UK and Germany)	Proposes model for FDI in banking having explanatory variables peculiar to FDI in banking as compared to FDI in manufacturing. Shows that bilateral trade, banks' foreign assets, the cost of capital, relative economic growth, exchange rates and FDI in non-finance industries are the major determinants of foreign investment in banking.
Fisher & Molyneux (1996)	FDI into London banking	Shows size of the banking sector in the foreign country is positively correlated with that country's bank presence in London. Foreign bank presence also greater among main trading partners. FDI from European and non-US or Japanese sources has a positive impact on foreign bank presence from those states.
Hultman and McGee (1989)	FDI in US banking 1973-86	Growing foreign presence in U.S. bank subsidiaries was found to be directly related to changes in FDI (excluding finance, insurance and real estate) and the exchange rate, and inversely related to bank price-earnings ratios. The growth of foreign bank branches and agencies in the U.S. was found to be directly related to changes in FDI (excluding finance, insurance and real estate), the exchange value of the dollar, and the passage of the International Banking Act of 1978.
Terpstra & Chwo-Ming Yu (1988)	FDI of US advertising agencies; determinants	Shows importance of impact of host country market size, host country geographic proximity, firm size, firm's international operations experience, oligopolistic reaction, and presence of home country customers abroad. Also reveals effect of oligopolistic reaction among the top ten and the second ten largest agencies and finds a stronger impact for the former.

Recent FDI determinants papers majoring on Central and East European states

Pusterla & Resmini (2007)	Firm-level manufacturing data for 4 CEE states to examine location and determinants of choice processes	Shows that sector specific factors affect the choice of the final location. These characteristics influence both the determinants and the structure of MNEs location choice process.
Bellak <i>et al</i> (2008)	FDI into CEE and role of labour costs: review and analysis	Bilateral net-FDI flows between 7 home and 8 host countries for 1995–2003. Shows that higher unit labour costs and higher total labour costs affect FDI negatively, but higher labour productivity impacts positively on FDI. Supports choice of unit labour costs as the proper measure of labour costs. Analysis also implies all cost factors taken together (distance, taxes, labour costs) exert a considerable influence upon the decision to invest in the CEECs.
Janicki and Wunna (2004)	Bilateral FDI between EU and 8 CEE candidate (CEEC) states awaiting accession	Cross-section data for 8 CEEC states for 1997. Study shows main determinants of FDI inflows in CEECs are size of the host economy, host country risk, labour costs, and trade openness.

Carstensen & Toubal (2004)	FDI determinants in CEE	Reveals traditional determinants including market potential, low relative unit labor costs, a skilled workforce and relative endowments are important. Moreover transition-specific factors, such as the level and method of privatization and the country risk, important in explaining relative success between states.
Walkenhorst (2004)	FDI inflows to Poland	Shows appropriateness of the basic gravity model formulation for FDI analysis in transition countries, as well as important links between FDI, trade, and labour costs. However, notes diversity across manufacturing industries with respect to the extent to which factors such as capital costs and industry competitiveness influence foreign investment activities.
Galego <i>et al</i> (2004)	FDI inflows into CEE and impact of accession	Using a random effects panel data model in the analysis, this research examines the main determinants of FDI and probability of FDI diversion from the EU periphery to accession states.
Bevan & Estrin (2000)	FDI determinants in the transition states	Uses panel dataset with information on FDI flows from market to transition states. Determinants shown to be country risk, unit labor costs, host market size and gravity factors. Risk linked to private sector development, industrial development, the government balance, reserves and corruption. Movement towards EU accession positively impacted on FDI receipts.
Resmini (2000)	FDI determinants: EU FDI to CEECs	Examines the extent to which FDI undertaken in different sectors reacts to the characteristics of the host countries. Focuses on manufacturing sectors. The model incorporates variables, such as labour costs as well as country-specific variables, i.e., the stage reached in the transition process. The results confirm the presence of heterogeneity at sector level.

Recent FDI Determinants papers majoring on tax issues

Azemar and Delios (2008)	Role of tax rates on FDI to developing states; Japanese firm location decisions 1990-2000	Elasticities between FDI and determinants might vary with levels of host economy development. Examines differences in regional tax rates and argues special tax sparing provisions signed with Japan can alter the effect of host country taxes on Japanese firms' location choices. Tax competition should not lead to an effective rate of zero taxation for developing countries in their competition for FDI inflows.
Wijeweera <i>et al</i> (2007)	FDI into the US (1982-2000) and importance of tax rates	Uses panel of nine investing tax exemption and tax credit countries making up around 85% of total US FDI inflows. Analyses if corporate income tax rates are important determinant and if investors from tax credit countries differ significantly in their tax response relative to those from tax exemption countries.

Quan (2006)	Tax incentives as FDI determinants, analysis of 52 developing states	Shows how political regime type might affect tax incentive policy. Findings show states with better rule of law offer lower levels of tax incentives, and the effect is stronger for more democratic countries. In democratic states, FDI inflows negatively associated with the level of incentives. Autocratic states maintaining restrictions on foreign entry adopt lower levels of incentives than those without restrictions.
Blazic & Vlahinic-Dizdarevic (2006)	FDI determinants SE Eastern Europe states	Paper notes broad consensus that key FDI determinants include market size, prospects for market growth, the degree of development, transition progress (i.e. institutional development). However, shows specific FDI determinant in SEECS has been privatization process, especially that of large-scale state assets. Notes effects of incentives strong in the competition for FDI within regions, when the initial investment decision has been taken and the investor selects alternative locations in a given region. Accelerated depreciation and tax credits (allowances) for investment are cost efficient and tax holidays should be avoided.
Lahreche-Revil (2006)	Tax sensitivity of FDI inflows; EU-15	Tax differentials shown to impact FDI in the EU15, but no impact on the new member states during the period of analysis (1990-2002). Also factors such as unit labor costs and price-competitiveness fail to explain FDI inflows to the accession states.
Wolff (2006)	FDI inflows to EU , and role of taxes	Examines effect of taxes on FDI flows and on three sub-components of these flows for the countries of the enlarged European Union. After controlling for unobserved country characteristics and common time effects, the top statutory corporate tax rate of both source and host country, turn insignificant for total FDI and investment into equity. However, high source country taxes clearly increase the probability of firms to re-invest profits abroad and lower the percentage of debt financed FDI. This might reflect profit re-allocation to avoid taxes. Market size factors have the expected signs for total FDI. Non-productivity adjusted wages as determinants of FDI are less robust.

Recent FDI Determinants papers focusing on institutional conditions and political factors

Busse & Hefeker (2007)	Political risk and FDI; developing countries	Examines links between political risk, institutions, and FDI inflows (83 developing countries 1984-2003). Shows that government stability, internal and external conflict, corruption and ethnic tensions, law and order, democratic accountability of government, and quality of bureaucracy are highly significant determinants of FDI inflows
Benassy-Quere et al (2007)	Institutions quality and FDI inflows in developing states	Shows that a wide range of institutions, including bureaucracy, corruption, but also information, banking sector and legal institutions, do matter for inward FDI independently of GDP per capita. Notes institutional proximity between home and host country important, Moving from a low level to a high level of institutional quality shown to have as much impact as suddenly

		becoming adjacent to a home country.
Daude and Stein (2007)	Role of institutional variables as FDI determinants, various states	Uses bilateral FDI stocks data. Shows better institutions have overall a positive and economically significant effect on FDI; some institutional aspects important including unpredictability of laws, regulations and policies, excessive regulatory burden, government instability and lack of commitment play a major role in deterring FDI. Estimated 1 standard deviation improvement in the regulatory quality of the host increases FDI by a factor of 2.
Penev (2007)	FDI into South Caucasus and Central Asia	Improvement of the investment climate by accelerating the transition process and reducing investment risks viewed as key determinants of FDI inflows.
Larrain & Tavares (2007)	Impact of corruption on FDI inflows, various states	Notes plenty of literature on how corruption impacts FDI flows but this paper looks at how FDI inflows impact corruption. State dataset for 1981 – 2000; finds FDI inflows (as % GDP) significantly decrease corruption in the host country.
Bengoa & Sanchez-Robles (2003)	FDI inflows, economic growth and economic freedoms, Latin America	Examines links between economic freedom, FDI and growth using panel data for 18 Latin American states for 1970–1999. Shows economic freedom in the host positively effects FDI inflows. FDI is also positively correlated with economic growth in the host. Goes on to show host state needs adequate human capital, economic stability and liberalized markets to benefit from long-term capital flows.
Jensen (2003)	Political regimes and FDI inflows, various states	Uses cross-sectional and time-series data to examine FDI determinants for over 100 states. Democratic political systems attract higher levels of FDI inflows both across countries and within countries over time. Democratic states get as much as 70% more FDI than authoritarian counterparts.
Bandelj (2002)	FDI determinants, CEE , role of institutional effects	Focuses on a relational approach that emphasizes institutional, political, economic, and cultural connections between investor and host countries. Shows political, migration, trade, and cultural relations between investors and hosts impact FDI flows.
Campos & Kinoshita (2008)	Role of structural reforms on FDI inflows; Latin American and CEE states	Examines structural reforms (financial, trade liberalization, and privatization) as FDI determinants. Found to be a strong relationship between reforms and FDI.

Appendix 2

Table A2.1: UK FDI 2002-2007 by sector – jobs

Jobs		2,002	2,003	2,004	2,005	2,006	Jan - Sept 2007	Grand Total
Property / Tourism & Leisure								
	Hotels / Tourism & Leisure	1518	10428	12024	2620	9398	1880	37866
	Real Estate	3207	5737	7528	419	9942	5643	32476
Property / Tourism & Leisure Total		4725	16165	19552	3039	19340	7523	70341
Business & Financial Services								
	Financial Services	2500	5596	3333	3182	7126	3839	25576
	Business Services	1487	3779	5631	3544	4405	3109	21956
Business & Financial Services Total		3987	9375	8964	6726	11531	6948	47531
Transport Equipment								
	Automotive OEM	3930	1859	2474	1833	8929	1507	20532
	Aerospace	663	1952	5266	1072	2408	1816	13177
	Auto Components	873	1229	2089	1413	1656	220	7480
	Other Transport OEM		183	141	290	235	29	878
	Plastics & Rubber			88	33	18	152	291
Transport Equipment Total		5466	5223	10058	4641	13246	3724	42351
Consumer Products								
	Consumer Products	2475	5373	5740	7351	10237	3604	34780
Consumer Products Total		2475	5373	5740	7351	10237	3604	34780
Food/Beverages/Tobacco								
	Food & Drink	4616	3182	7304	10466	4974	2079	32621
	Tobacco		100				95	195
Food/Beverages/Tobacco Total		4616	3282	7304	10466	4974	2174	32816
ICT								
	IT & Software	3416	2360	3680	5450	3662	4732	23300
	Telecom Equipment	450	204	720	832	807	988	4001
	Telecom Services	626	192	242	255	781	192	2288
ICT Total		4492	2756	4642	6537	5250	5912	29581
Heavy Industry								
	Energy	496	5744	1550	2914	3104	6555	20363
	Machinery & Industrial Goods	316	1742	737	1099	1166	635	5695
	Metals / Mining	133	900	752	887	162	70	2904
Heavy Industry Total		945	8386	3039	4900	4432	7260	28961
Electronics								
	Business Machines & Equipment		1832	5539	1960	1100	1807	12238
	Electronic Components	977	718	643	208	640	835	4021
	Consumer Electronics	493	1774	19	598	496	94	3474
	Semiconductors	202	1149	595	401	534	248	3129
Electronics Total		1672	5473	6796	3167	2770	2984	22861
Logistics & Distribution								
	Logistics & Distribution	499	587	1045	1337	14439	1172	19079
Logistics & Distribution Total		499	587	1045	1337	14439	1172	19079
Light Industry								
	Textiles	1266	890	2826	2192	3597	1426	12197
	Paper & Packaging	137	659	1218	506	460	150	3130
	Building Materials / Ceramics & Glass	403	576	246	222	221	773	2441
	Wood Products	362	15	403	60	150		990
Light Industry Total		2168	2140	4693	2980	4428	2349	18751
Life Sciences								
	Pharma	1373	652	668	1237	980	1429	6339
	Healthcare	615	714	62	1586	855	970	4802
	Biotechnology	362	302	395	332	350	610	2351
Life Sciences Total		2350	1668	1125	3155	2185	3009	13491
Chemicals / Plastics & Rubber								
	Plastics & Rubber	235	378	634	822	1623	636	4328
	Chemicals	716	74	547	207	386	195	2125
Chemicals / Plastics & Rubber Total		951	452	1181	1029	2009	831	6453
Grand Total		34346	60880	74139	55328	94841	47490	367021

Source: fDi Markets (Crossborder investment monitor)

Note: Job numbers include estimates using a complex matrix calculator

Note: 2002 data should not be used for trend analysis

Table A2.2: Regional Breakdown of inward investment successes in each of the last 6 years

2006/07					2005/2006			
Region	No. of Projects	No. of New Jobs	No. of Safeguarded Jobs	Total No. of Associated Jobs	Total No. of Projects	Total No. of New Jobs	Total No of Safeguarded Jobs	Total No. of Associated Jobs
East Midlands	84	2,630	3,103	5,733	74	1,567	2,979	4,546
East of England	119	793	3,864	4,657	92	2,381	2,144	4,525
London	388	7,118	901	8,019	323	4,412	2,340	6,752
North East	64	1,828	3,831	5,659	63	4,253	1,522	5,778
North West	138	3,492	4,028	7,520	112	3,385	3,418	6,801
Northern Ireland	31	4,220	497	4,717	23	947	3,132	4,079
Scotland	89	3,185	3,057	6,242	60	1,901	1,014	2,915
South East	235	3,241	3,054	6,295	223	4,511	1,832	6,343
South West	57	2,279	3,562	5,841	61	1,169	2,756	3,925
UK Wide	1	50	0	50	2	200	24,000	24,200
Wales	67	3,379	2,788	6,167	51	3,132	2,072	5,204
West Midlands	104	2,510	12,101	14,611	82	4,285	6,015	10,300
Yorkshire & Humber	54	1,801	1,045	2,846	54	1,934	2,565	4,443
TOTALS	1,431	36,526	41,831	78,357	1,220	34,077	55,789	89,866

2003/2004					2002/2003			
Region	No. of Projects	Total No. of New Jobs	No. of Safeguarded Jobs	Total No. of Associated Jobs	No. of Projects	Total No. of New Jobs	No. of Safeguarded Jobs	Total No. of Associated Jobs
East of England	30	1,982	444	2,426	42	631	914	1,545
East Midlands	56	430	762	1,192	32	1,314	1,875	3,119
London	170	2,572	1,591	4,163	155	2,305	513	2,818
North East	61	1,919	4,216	6,135	62	4,653	2,098	6,751
Northern Ireland	63	3,162	9,549	12,711	11	787	1,840	2,627
North West	26	1,496	1,567	3,063	59	7,486	2,272	9,715
Scotland	74	1,632	2,981	4,613	49	3,599	1,724	5,323
South East	134	2,734	1,094	3,828	118	3,786	847	4,633
South West	39	2,147	1,523	3,670	33	654	834	1,488
UK	5	0	100	100	1	0	601	601
Wales	67	4,064	4,067	8,131	60	4,083	3,696	7,779
West Midlands	61	2,391	4,646	7,037	52	2,369	2,155	4,524
Yorkshire & Humber	25	934	1,214	2,148	35	2,729	546	3,220
Totals	811	25,463	33,754	59,217	709	34,396	19,915	54,311

Source: Published figures from the UKTI Database

Table A2.3. A comparative analysis of domestic and foreign-owned company characteristics in the UK, 2005

		av. wage domestic	av. wage foreign	for/dom %	Turnover per emp domestic	Turnover per emp foreign	for/dom %	GVA per emp domestic	GVA per emp foreign	for/dom %	Total output per emp domestic	Total output per emp foreign	for/dom %	av. no of employees per site domestic	av. no of employees per site foreign	for/dom %	purchases /turnover domestic	purchases /turnover foreign	for/dom
01	Agriculture/ hunting and related services	10	16	150	49	37	75	29	22	75	49	37	75	2	32	1334	43	41	96
02	Forestry/ logging/ etc	16	21	134	*	*	*	39	42	108	*	*	*	3	18	603	*	*	*
05	Fishing/ operation fish hatcheries/farms	13	17	131	101	147	145	48	87	180	102	141	139	2	6	380	55	41	75
10	Mining coal/lignite; extraction of peat	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	Extraction crude petroleum/natural gas	52	60	116	1037	1614	156	619	1012	163	908	1361	150	36	99	271	40	36	91
13	Mining of metal ores	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14	Other mining and quarrying	28	25	90	215	198	92	68	59	86	202	182	90	10	24	236	65	66	103
15	Manufacturing of food products and beverages	19	24	127	*	*	*	*	*	*	*	*	*	34	196	573	*	*	*
17	Manuf textiles	17	21	124	86	107	125	32	36	111	80	98	123	14	76	559	62	67	107
18	Manuf apparel;dressing/dyeing fur	17	15	88	108	80	74	39	39	100	99	74	75	8	28	351	64	49	76
19	Tanning/dressing of leather/ etc	18	15	87	96	74	78	36	23	65	90	63	70	10	93	930	63	69	109
20	Manuf wood/products/cork/ etc	17	22	125	95	166	175	36	42	116	89	146	164	8	132	1643	62	74	119
21	Manuf pulp/ paper and paper products	20	27	134	110	216	196	40	36	92	106	205	194	22	113	510	64	83	130
22	Publishing/printing/repro recorded media	22	28	126	105	134	128	47	63	135	100	131	131	9	72	814	55	53	96
23	Manuf coke/ refined petroleum products	18	39	223	526	4217	801	49	345	708	471	2765	587	83	135	163	87	61	70
24	Manuf chemicals and chemical products	29	35	121	196	298	152	78	83	107	187	262	140	29	112	391	61	72	119
25	Manuf rubber and plastic goods	20	25	124	99	147	148	40	45	114	95	138	146	20	102	506	60	69	115
26	Manuf other non-metallic products	22	25	112	118	133	112	48	54	112	110	122	111	13	66	523	60	60	100
27	Manuf basic metals	26	28	108	181	309	171	44	57	130	178	281	158	30	118	394	78	82	105
28	Manuf fabricated metal products/ etc	20	26	130	95	130	136	39	48	124	90	121	134	10	72	740	59	63	106
29	Manuf machinery and equipment nec	23	27	119	104	168	162	41	48	117	98	155	158	14	88	620	61	71	115
30	Manuf office machinery and computers	24	30	126	127	182	143	40	66	165	117	173	149	10	148	1525	69	64	93
31	Manuf electrical machinery/apparatus nec	21	24	116	96	135	141	39	42	108	90	126	140	15	102	702	60	68	114
32	Manuf radio/ tv/communications equipment	24	31	125	109	233	213	35	57	162	102	217	214	15	115	760	68	76	113
33	Manuf medical/precision instruments/etc	22	28	124	97	140	145	44	67	151	91	129	141	13	86	672	56	52	94
34	Manuf motor vehicles/trailers/etc	22	29	131	120	308	257	37	55	147	117	273	234	22	346	1570	70	82	117
35	Manuf other transport equipment	30	32	106	144	169	118	64	56	87	136	172	126	36	212	596	56	70	126
36	Manuf furniture; manufacturing nec	19	23	123	94	155	166	36	40	110	88	144	165	8	82	1054	61	74	121
37	Recycling	19	20	108	167	180	107	47	65	137	161	178	110	8	26	323	72	65	91
40	Electricity/gas/steam/hot water supply	32	37	116	711	722	102	217	255	117	728	719	99	46	69	149	72	66	91
41	Collection/purification/distri of water	22	31	145	181	231	128	143	229	161	189	307	163	23	63	275	25	34	133
45	Construction	21	26	124	127	152	120	49	42	86	127	151	119	5	59	1149	63	72	115
50	Sale/maintenance/repair motor vehicles	16	22	143	224	930	414	36	92	256	52	132	253	6	21	336	84	90	107
51	Wholesale trade/commission trade/ etc	21	28	133	319	954	299	53	74	139	90	130	144	7	27	375	82	90	110
52	Retail trade/ except of motor vehicles	10	10	103	86	91	106	20	19	94	32	31	98	9	25	268	77	78	102
55	Hotels and restaurants	8	9	110	34	29	85	16	14	89	28	28	99	10	25	248	53	51	96
60	Land transport; transport via pipelines	19	24	128	74	104	141	33	41	125	75	105	140	10	64	636	62	67	109
61	Water transport	30	44	148	264	412	156	91	120	132	231	242	105	8	42	493	67	70	105
62	Air transport	31	26	83	219	241	110	86	68	79	214	236	110	56	148	266	60	70	118
63	Supporting/auxiliary transport/etc	24	23	97	163	216	132	56	42	75	155	199	128	14	29	206	65	79	121
64	Post and telecommunications	27	27	101	133	212	159	66	83	127	105	141	134	20	86	430	53	62	117
70	Real estate activities	16	26	165	86	113	131	54	57	107	88	107	122	4	13	316	43	50	116
71	Renting machinery/equipment/ etc	19	21	109	118	204	173	70	88	126	108	126	117	6	15	238	40	57	141
72	Computing and related activities	29	44	149	93	149	160	58	91	156	86	135	157	3	53	1681	38	39	103
73	Research and development	34	41	121	92	133	144	48	43	90	84	116	139	22	109	493	49	68	138
74	Other business activities	20	23	115	63	93	146	39	49	125	59	76	129	7	52	790	37	45	121
80	Education	18	29	158	19	91	485	7	39	548	19	91	485	32	25	77	63	58	91
85	Health and social work	11	15	128	22	37	169	14	24	170	21	37	173	14	59	411	34	33	98
90	Sewage/refuse disposal/ sanitation/ etc	26	24	90	140	136	97	84	102	121	137	153	112	13	40	295	39	37	95
91	Activities membership organisations nec	15	24	166	47	72	152	21	53	251	44	71	162	7	33	451	55	26	48
92	Recreational/ cultural and sporting	17	23	136	136	129	95	35	65	185	129	122	95	7	44	611	71	49	69
93	Other service activities	12	13	108	48	48	100	24	25	104	44	44	100	4	6	159	50	48	96

Source ABI, ONS (special analysis).

Table A2.4: Wales inward investment (incl. UK) 1984 - 2006 - Top 10 origin countries (by total number of projects)

I. England	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects		21	31	54	39	51	64	92	119	94	81	48	83	46	71	43	30	33	40	48	52	39	46	50	1,275
New jobs		2,544	1,845	4,678	5,180	3,389	5,232	3,464	4,110	3,726	2,243	1,141	3,669	3,320	4,466	4,707	4,458	1,706	1,677	2,308	2,698	2,404	1,816	2,907	73,688
Safeguarded jobs		200	0	24	310	813	696	1,614	2,429	2,969	1,463	1,075	1,035	1,323	1,042	1,263	4,253	254	878	3,225	1,233	405	122	561	27,187
Capital invest (£m)		14.66	20.62	80.76	108.01	63.88	267.56	130.87	159.32	171.41	122.26	62.03	129.27	188.81	228.47	211.33	90.59	97.05	98.15	172.67	57.73	117.54	41.67	41.79	2,676
I. USA	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	18	21	23	23	21	10	32	30	30	18	31	33	22	24	21	17	13	23	14	24	20	12	22	14	516
New jobs	2,261	893	788	873	3,080	572	790	2,019	949	526	896	1,544	1,366	1,400	2,717	1,089	1,787	2,106	1,573	1,312	1,854	580	1,274	1,482	33,731
Safeguarded jobs	3,233	933	2,593	641	756	764	3,834	1,833	2,798	522	2,256	3,012	864	539	834	2,359	767	1,960	190	1,646	1,188	399	1,516	1,037	36,474
Capital invest (£m)	92	54	108	48	797	98	161	276	582	328	549	474	262	745	178	450	49	409	101	105	127	146	130	104	6,372
I. Japan	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	9	6	6	13	8	11	11	14	7	11	9	3	10	12	8	7	5	9	2	3	7	6	5	7	183
New jobs	830	880	601	2,301	1,019	1,056	1,159	2,061	74	1,103	1,292	286	1,324	1,804	841	449	71	500	80	57	249	241	258	403	18,939
Safeguarded jobs	801	145	0	0	0	940	0	444	450	95	91	80	381	967	645	37	65	624	829	686	100	229	558	328	8,495
Capital invest (£m)	27.00	31.00	23.29	80.12	29.01	217.50	31.17	193.70	67.08	58.14	246.52	10.99	65.75	156.91	232.99	20.49	11.15	36.39	22.00	6.10	11.07	12.51	13.62	101.59	1,706
I. Germany	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	6	7	2	3	8	8	6	12	8	9	6	4	4	7	7	8	6	4	3	3	4	2	3	3	133
New jobs	425	203	41	70	788	1,491	350	471	187	224	437	131	127	317	340	515	945	511	81	58	266	22	101	65	8,166
Safeguarded jobs	274	0	0	0	0	0	221	910	146	186	387	36	0	141	239	365	160	461	300	900	79	104	140	0	5,049
Capital invest (£m)	14.13	12.32	2.16	0.56	29.40	117.57	9.08	35.92	4.71	11.77	37.18	7.03	4.05	22.07	9.15	76.35	16.47	30.47	13.10	20.17	38.55	11.03	10.71	27.68	562
I. France	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	3	2	1	0	2	4	6	6	7	3	4	2	2	4	3	4	0	2	5	4	3	2	5	10	84
New jobs	108	145	200	0	177	0	18	399	222	53	60	213	311	193	54	431	0	227	166	250	180	650	25	564	4,646
Safeguarded jobs	0	0	0	0	0	630	1,585	158	660	10	52	334	0	47	0	457	0	0	223	240	34	200	42	60	4,732
Capital invest (£m)	2.93	3.50	5.50	0.00	3.50	20.00	60.60	45.25	35.80	0.76	4.36	16.80	12.79	20.59	2.55	22.71	0.00	17.46	16.64	9.33	1.98	9.10	0.00	16.17	328
I. Republic Of Ireland	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	2	1	5	2	5	1	3	3	1	6	3	2	1	2	1	5	5	4	4	4	4	2	3	69
New jobs	0	90	12	234	66	124	14	121	51	0	224	129	45	64	157	14	1,661	599	150	663	99	510	8	376	5,411
Safeguarded jobs	0	0	0	0	14	14	0	0	28	35	0	11	0	0	0	0	50	0	204	395	0	148	0	85	984
Capital invest (£m)	0.00	3.52	0.29	6.97	2.20	2.21	0.20	2.53	4.22	0.54	9.90	7.93	14.90	1.00	5.92	0.58	13.23	6.78	16.71	37.07	2.28	139.39	0.40	67.04	346
I. Canada	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	4	2	4	3	5	1	3	6	2	5	2	3	2	1	0	1	1	3	0	3	2	2	0	4	59
New jobs	885	168	53	243	399	90	24	751	130	95	60	366	6	30	0	0	60	438	0	0	60	80	0	134	4,072
Safeguarded jobs	89	0	19	116	30	0	500	625	180	458	70	0	55	0	0	200	0	0	72	0	40	0	162	2,616	
Capital invest (£m)	11.96	8.38	3.85	7.82	37.85	3.00	14.25	69.00	14.43	14.95	1.50	12.80	0.66	10.00	0.00	3.50	3.00	22.32	0.00	9.15	0.15	0.41	0.00	7.61	257
I. Italy	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	1	2	0	1	2	1	3	4	5	3	0	3	5	3	2	2	4	0	1	5	4	1	1	1	54
New jobs	342	75	0	40	57	44	70	124	95	40	0	68	363	112	14	182	133	0	2	336	396	125	12	11	2,641
Safeguarded jobs	0	0	0	0	450	0	200	750	70	30	0	23	141	667	0	19	134	0	0	362	0	134	68	0	3,048
Capital invest (£m)	0.20	1.02	0.00	0.50	7.00	1.70	5.20	58.07	11.43	2.83	0.00	4.42	22.35	17.86	0.29	17.83	11.21	0.00	0.12	190.09	35.64	7.95	5.34	1.48	403
I. Sweden	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	2	2	4	4	4	3	3	3	3	1	1	1	3	0	0	0	0	2	0	2	4	1	0	1	44
New jobs	22	215	40	88	60	215	66	98	54	0	36	12	82	0	0	0	0	41	0	46	176	33	0	16	1,300
Safeguarded jobs	131	50	188	0	835	0	0	42	76	0	40	16	0	0	0	0	0	0	0	80	0	0	0	0	1,458
Capital invest (£m)	2.93	15.43	0.65	5.59	15.35	4.50	0.82	6.28	4.96	5.50	2.10	0.83	3.65	0.00	0.00	0.00	0.00	0.20	0.00	12.38	1.46	1.66	0.00	0.95	85
I0. Netherlands	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	1	0	3	2	1	0	1	1	3	6	4	1	2	0	3	0	1	1	3	1	2	0	0	0	36
New jobs	85	0	155	100	100	0	20	50	18	160	44	0	33	0	53	0	50	140	46	66	520	0	0	0	1,640
Safeguarded jobs	0	0	0	120	0	0	0	0	0	80	29	197	0	0	0	0	0	150	95	0	0	0	0	0	671
Capital invest (£m)	0.45	0.00	5.35	6.50	0.00	0.00	0.05	0.00	0.20	9.28	1.99	6.80	1.45	0.00	6.20	0.00	4.10	0.00	63.79	4.29	4.33	0.00	0.00	0.00	115

Source: IBW

Table A2.5: Wales inward investment (excl. UK) 1984 - 2006 - Top 10 sectors (by total number of projects)

L. Automotive	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	3	3	7	5	5	9	11	12	13	8	9	13	16	20	7	9	6	9	5	8	11	7	8	3	207
New jobs	420	140	109	132	2,222	1,891	270	1,226	735	443	495	1,177	1,691	1,315	740	810	325	1,788	263	308	438	470	432	82	17,922
Safeguarded jobs	647	600	807	142	1,180	1,715	2,637	1,078	1,455	137	707	1,659	568	629	362	2,461	790	568	999	1,437	1,202	313	323	241	22,657
Capital invest (£m)	10	22	8	24	753	298	56	67	149	19	30	377	104	169	233	96	36	313	34	32	72	30	28	97	3,057
I. Other Manufacturing	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	10	8	12	6	2	4	4	5	5	5	5	2	2	3	73
New jobs	0	0	0	0	0	0	0	0	0	0	1,138	216	652	276	120	236	361	195	152	172	364	28	15	23	3,949
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	432	38	510	667	0	0	55	649	720	313	0	104	0	87	3,575
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	414	23	62	682	3	303	8	14	85	131	23	1	1	28	1,778
J. Electronics	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	0	2	5	11	8	2	1	6	4	6	4	2	6	3	60
New jobs	0	0	0	0	0	0	0	0	0	0	0	416	5,138	2,556	923	137	29	187	110	169	155	258	513	124	10,715
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	0	0	242	967	698	0	0	323	365	686	0	0	662	60	4,003
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	414	23	62	682	3	303	8	14	85	131	23	1	1	28	1,778
K. Healthcare	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	5	1	2	2	6	4	7	7	3	2	2	0	0	0	0	0	0	0	0	0	1	1	1	0	44
New jobs	871	20	0	52	357	238	206	431	86	0	35	0	0	0	0	0	0	0	0	0	20	1	0	0	2,317
Safeguarded jobs	290	0	225	0	0	0	230	310	0	95	14	0	0	0	0	0	0	0	0	0	0	0	32	0	1,196
Capital invest (£m)	22	2	1	0	22	40	62	57	51	0	0	0	0	0	0	0	0	0	0	0	6	0	3	0	267
L. Food / Drink	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	1	3	2	1	4	4	5	2	4	7	1	5	1	1	41
New jobs	0	0	0	0	0	0	0	0	0	0	0	97	71	0	191	70	245	21	164	433	0	35	16	0	1,343
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	358	59	0	63	0	17	160	90	225	635	0	90	0	130	1,827
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	7	7	1	0	5	1	17	3	18	66	0	5	0	5	135
M. Chemicals / Oil	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	4	10	4	4	5	0	2	4	2	0	1	1	3	1	41
New jobs	0	0	0	0	0	0	0	0	0	0	68	347	56	22	145	0	50	101	80	0	7	10	2	13	901
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	70	617	0	0	317	0	0	179	0	0	0	0	0	37	1,220
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	6	56	4	22	27	0	9	26	62	0	1	0	0	1	213
N. Plastics / Paper	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	3	5	3	3	4	8	3	3	1	3	2	1	1	0	40
New jobs	0	0	0	0	0	0	0	0	0	0	196	252	81	78	323	641	291	95	34	414	166	0	99	0	2,670
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	184	34	2	0	120	470	0	585	31	50	80	140	140	0	1,836
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	28	17	7	3	14	77	11	23	1	75	44	10	11	0	319
O. Metals / Metal products	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	2	6	3	4	4	4	2	1	2	5	1	1	1	2	38
New jobs	0	0	0	0	0	0	0	0	0	0	17	71	55	132	138	29	0	0	35	461	0	3	4	10	955
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	36	277	0	0	42	120	20	0	0	565	26	0	35	147	1,268
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	2	14	13	18	7	4	5	0	2	17	0	0	1	6	90
P. Software / IT Applications	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	4	1	1	4	5	2	2	4	11	37
New jobs	0	0	0	0	0	0	0	0	0	0	19	3	0	0	3	216	12	0	62	434	22	1	67	771	1,610
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	50	0	0	5	0	0	79	0	146
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	2	1	0	0	5	73	86
Q. Pharmaceuticals	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Grand Total
Projects	0	0	0	0	0	0	0	0	0	0	2	5	5	2	3	2	4	1	1	4	0	2	2	0	33
New jobs	0	0	0	0	0	0	0	0	0	0	55	192	414	64	88	140	132	14	107	444	0	15	20	0	1,685
Safeguarded jobs	0	0	0	0	0	0	0	0	0	0	480	43	12	0	14	270	0	29	74	65	0	200	69	0	1,256
Capital invest (£m)	0	0	0	0	0	0	0	0	0	0	8	8	27	1	4	4	6	4	7	62	0	5	23	0	160

Source: IBW

Table A2.6: Summary comparative statistics for foreign and domestic industries, Wales, 2005.

IC Section/ subsection	av. wage domestic	av wage foreign	for/dom %	Turnover per emp domestic	Turnover per emp foreign	for/dom %	GVA per emp domestic	GVA per emp foreign	for/dom %	Total output per emp domestic	Total output emp foreign	for/dom %	av no of employees per site domestic	foreign	for/dom %	purchases/ turnover domestic	purchases/ turnover foreign	for/dom %
Agriculture, hunting and forestry	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Fishing	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Mining & quarrying	31	22	70	223	149	67	74	45	60	212	136	64	11	26	240	63	99	
Manufacturing	19	26	136	116	269	233	33	54	167	110	232	210	16	148	916	73	71	
Manufacture of food products, beverages and tobacco	17	21	123	117	185	159	33	66	200	110	142	128	35	171	486	71	46	
Manufacture of textiles and textile products	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Manufacture of wood and wood products	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Manufacture of pulp, paper and paper products, publishing and printing	18	25	137	84	180	214	33	53	159	81	173	214	10	99	962	61	71	
Manufacture of coke, refined petroleum products and nuclear fuel	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Manufacture of chemicals, chemical products and man made fibres	22	26	122	114	241	211	41	70	169	105	221	211	23	111	490	63	72	
Manufacture of rubber and plastic products	18	21	116	87	146	167	34	36	106	85	142	168	17	108	627	61	75	
Manufacture of other non-metallic mineral products	22	29	133	105	168	160	44	60	138	102	158	154	10	94	933	59	62	
Manufacture of basic metals and fabricated metal products	22	33	148	173	301	174	30	45	152	169	286	169	19	101	537	85	86	
Manufacture of machinery and equipment not elsewhere classified	20	28	143	84	150	178	32	31	100	80	123	154	15	104	717	62	80	
Manufacture of electrical and optical equipment	19	25	131	123	144	117	31	49	159	113	137	121	17	155	932	75	65	
Manufacture of transport equipment	21	28	132	88	200	227	34	38	112	86	186	215	27	418	1,551	62	83	
Manufacture not elsewhere classified	17	21	119	85	122	144	30	36	123	80	118	148	11	91	858	66	71	
Electricity, gas and water supply	25	21	84	543	515	95	272	251	92	552	519	94	19	47	249	52	53	
Construction	18	22	119	100	90	90	42	34	81	100	90	90	5	49	938	58	62	
Wholesale and retail trade; repair of motor vehicles, motorcycles and mopeds	10	10	98	109	148	137	22	23	104	36	44	122	8	22	273	79	84	
Hotels and restaurants	7	7	106	30	22	74	13	11	87	24	22	92	8	29	346	57	50	
Transport, storage and communication	18	23	129	77	140	182	37	56	152	75	122	162	10	43	424	57	61	
Real estate, renting and business activity	14	17	119	44	42	95	29	29	99	43	40	93	5	32	605	34	30	
Education	17	26	153	12	30	252	*	*	*	*	*	*	33	11	33	*	*	
Health and social work	11	9	85	22	21	98	*	*	*	*	*	*	13	42	319	*	*	
Other community, social and personal service activity	13	11	80	72	43	59	23	24	104	69	42	60	7	24	359	66	43	

Source: Derived from ABI, ONS (Special analysis)

Key

- Nil or negligible
- * Represents data that has been suppressed because of confidentiality

