

**Electronics Foreign Direct Investment
in Scotland: Lessons for
Nordrhein-Westfalen**

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Abstract

The paper is based on a study undertaken by EPRC to identify the main lessons behind Scotland's success as a location for electronics foreign direct investment (FDI). In order to inform promotional policy in Nordrhein-Westfalen, the research sought to review the nature of investment flows into Scotland, especially in terms of sector, nationality and type of production. It also attempted to determine the factors which have contributed to Scotland's success as a destination for incoming FDI (such as the role of macroeconomic factors, financial incentives, government institutions, and other variables). The research also examined the importance attached to FDI in Scotland's Objective 2 programmes and what measures they contain for promoting FDI.

The research incorporated primary fieldwork, consisting of a interview programme with officials from Locate in Scotland, the Scottish Office, Scottish Enterprise and Strathclyde European Partnership. In order to elicit evidence on the key current locational determinants and factors involved in corporate decision-making processes, these interviews were supplemented with a small number of interviews with four of Scotland's major electronics inward investors. A fieldwork visit to Nordrhein-Westfalen was undertaken in order to inform the study's recommendations regarding the region's institutional framework and FDI promotional policies.

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1. INTRODUCTION

1.1 Objectives

This report represents the final stage in a project examining the nature of foreign direct investment (FDI) in Scotland with a view to identifying policy lessons for Nordrhein-Westfalen. In determining the factors underpinning Scottish success in attracting overseas investment, especially in the field of electronics, the research has five key objectives:

- to review the nature of investment flows into Scotland, especially in terms of sector, nationality and type of production;
- to determine the factors which have contributed to Scotland's success as a destination for incoming FDI (such as the role of macroeconomic factors, financial incentives, government institutions, and other variables);
- to examine the importance attached to FDI in Scotland's Objective 2 programmes and what measures they contain for promoting FDI;
- to identify the policy lessons for Nordrhein-Westfalen from the experience of successful FDI locations such as Scotland; and
- to make recommendations concerning the types of FDI most suitable for Nordrhein-Westfalen and the policy and institutional changes necessary in order to compete for these investments.

The interim report focused on the first two objectives outlined above. It analysed the main foreign investment patterns and location determinants in Western Europe with particular emphasis on Scotland. The interim report also looked at foreign investment in other regional economies to contrast their experience with Scotland. The final report covers all elements within the study, particularly the final three issues above. Special attention is paid to the institutional factors behind Scotland's success as an inward investment location.

1.2 Methodology

The methodology employed during the second stage of the research encompassed three different elements, involving both secondary data-gathering and primary fieldwork. First, the bulk of the research is based on *desk research*, utilising a number of different sources held within the EPRC, such as existing information on inward investment in Objective 2 programmes. The results of previous survey research undertaken by the EPRC were used to examine the changing composition of Scotland's FDI flows. Data collated by Scottish Enterprise, Locate in Scotland and the Scottish Office Census of Production data also provided valuable information on the qualitative nature of FDI flows within Scotland's electronics industry.

Second, the research incorporated primary fieldwork, consisting of a *limited interview programme* with officials from Locate in Scotland, the Scottish Office, Scottish Enterprise, and Strathclyde European Partnership. In order to elicit evidence on the key current locational determinants and factors involved in corporate decision-making processes, these interviews were supplemented with a small number of interviews with four of Scotland's major electronics inward investors.

Lastly, a *fieldwork visit* to Nordrhein-Westfalen was undertaken in order to inform the study's recommendations regarding the region's institutional framework and FDI promotional policies.

1.3 Report Structure

The report has five sections following this introduction:

- *Section 2* provides an in-depth assessment of foreign investment in Scotland's electronics industry;
- *Section 3* reviews the main location determinants accounting for these trends, and examines the factors behind Scotland's success as a location for FDI, including some case study examples, and examines the policy actors at different levels involved in the inward investment attraction process in Scotland and their various roles in inward investment attraction and development;
- *Section 4* examines the Western Scotland Single Programming Document (SPD), with particular reference to Objective 2 priorities and measures which promote foreign investment in Western Scotland;
- *Section 5* provides a brief overview of the regional economy in Nordrhein-Westfalen and the processes of inward investment attraction in the region; and
- *Section 6* provides policy recommendations for Nordrhein-Westfalen to promote and develop inward investment in the region's economy.

2. FDI IN SCOTLAND

2.1 The Scottish Economy

Comprising approximately one third of the total land area of the UK, Scotland accounts for around nine percent of the UK population with a population of just over five million. Scotland is roughly twice the geographical size of Belgium or the Netherlands. With much of the country mountainous, Scotland is the least densely populated of the countries and standard regions of the UK. The majority of its population is concentrated in the 'Central Belt' area between Glasgow and Edinburgh. Scotland also has one of the lowest population densities in Western Europe as a whole

and its population has been falling since the mid-1970s. The primary reason for this population decrease is net out-migration: between 1979 and 1989, Scotland's population fell by nearly 113,000 (equivalent to 2.2 percent of the region's 1979 population), with net out-migration of almost 156,000, which more than offset the natural increase of some 33,000. Nevertheless, net out-migration from Scotland in the 1970s and 1980s was considerably less than in the 1960s.

Results from the Spring 1997 Labour Force Survey reveal that there were 2,278,000 people employed in Scotland, or 8.8 percent of the UK workforce, an increase of 26,000 since Spring 1996. Seasonally adjusted unemployment in Scotland currently stands at 6.3 percent of the workforce, the lowest level since March 1980. However, the Scottish unemployment rate has been above the UK rate for 18 months: e.g. in July 1997, it was 0.8 percent higher. Most economists forecast that unemployment will have continued to fall during the remainder of 1997 with little change expected in 1998. Average male weekly earnings are £351 (94 percent of the UK national average) and average female weekly earnings are £254 (again, 94 percent of the UK national average).¹

With regard to the structure of employment, Scotland again displays little variation from the UK average. The Scottish economy has undergone a period of profound industrial restructuring over the last three decades. The traditional industrial heart of Scotland - mining, steel making, shipbuilding, transport equipment and heavy engineering - have all experienced substantial decline over the last thirty years. These industries are gradually being replaced with new industries including electronics, telecommunications, software, oil and gas engineering, chemicals and producer and consumer services. While the traditional industries were predominantly indigenously owned and controlled, these new industries have developed through inward investment and are characteristically branch plants of multinational corporations. Decision-making powers concerning R&D, finance, and marketing are often located outside the Scottish economy.

Broadly speaking, there are five principal weaknesses in the Scottish economy. First, there is a continuing dependence on heavy manufacturing industries with poor growth prospects and limited autonomy in branch plants. Second, few sources of indigenous growth exist, reflected in the poor performance of small and medium-sized enterprises. Third, Scotland suffers from a low rate of new business start-ups owing to the weak entrepreneurial climate. Fourth, Scotland has an above-average dependence upon the public sector as a proportion of gross domestic product (GDP) and employment. Finally, an absence of high-technology growth sectors in Scotland and a poor rate of technological innovation in the established industrial base has left the economy with few local sources of future industrial growth.

¹ 1 DM = £2.967

2.2 Scotland's Inward Investment in the UK Context

The UK has traditionally received relatively high levels of foreign investment, currently making it the world's second largest recipient of inward investment after the US. As a share of GDP, FDI has consistently not only had a more significant role in the UK economy than in most other European countries, but one that has increased in recent years as well. In global terms, the UK remains the world's second largest recipient of inward investment after the US. The UK attracts 40 percent of US FDI in Europe and more than 40 percent of FDI from Japan and Asia's tiger economies. The reasons for this are difficult to determine but key contributory factors include the early liberalisation of foreign ownership regulations in the UK, London's importance as a financial and mergers and acquisitions centre, the overall favourable environment for foreign businesses, the country's strengths in certain manufacturing sectors, the importance of the English language in global business and the explicit promotion of FDI by successive British Governments during the 1980s and 1990s.

Within the UK, Scotland has been one of the key regions attracting FDI. According to 1991 figures, for the regional employment accounted for by foreign-owned enterprises, Scotland has the fourth largest total in the country, following the South East (the economic powerhouse of the UK where foreign enterprises traditionally concentrate), the North West of England and the West Midlands (Table 2.1). The Scottish share of foreign-owned employment was relatively constant over the decade, in contrast with regions such as the South East, whose share fell from 36.2 percent in 1981 to 27.9 percent in 1991. Moreover, foreign investment has had a more substantial presence in Scotland than in most other regions. When ranking UK regions by the share of total regional employment accounted for by foreign enterprises, Scotland has had the third largest percentage.

Table 2.1: Employment in foreign-owned manufacturing in the UK , 1991

	Number (,000)		Percentage	
	<i>Foreign-owned enterprises</i>	<i>All enterprises</i>	<i>Foreign share of total region</i>	<i>Region share of total foreign</i>
North East	49.4	251.5	19.6	6.4
Yorkshire/ Humberside	56.6	444.1	12.7	7.3
East Midlands	44.4	434.7	10.2	5.7
East Anglia	30.5	161.7	18.9	3.9
South East	216.4	1,058.4	20.4	27.9
South West	42.3	329.8	12.8	5.5
West Midlands	87.5	608.9	14.3	11.3
North West	97.8	561.0	17.4	12.6
Wales	48.3	220.0	22.0	6.2
Northern Ireland	24.6	113.1	21.8	3.2
Scotland	77.0	354.3	21.7	9.9
UK	774.8	4,537.6	17.1	100.0

Source: Report: Census of Production, Central Statistical Office, London, various years.

A similar picture emerges when examining statistics for Regional Selective Assistance (RSA). RSA is the principal financial incentive used in attracting foreign investment

into the UK (apart from Northern Ireland, where separate policy instruments have been used). It is only available in specified Assisted areas within the country - consequently, companies are not eligible for the grant in areas like East Anglia and most of the South East. Using the figures for foreign companies receiving RSA, it is clear that Scotland has been particularly successful at attracting inward investment (Table 2.2). With regards to associated employment, nearly a *third* of all new jobs created and safeguarded with inward investment projects were in Scotland (more than any other region). Similarly, over a third of all capital investment linked to FDI projects receiving financial assistance was located in Scotland.

Table 2.2: Employment and investment in foreign-owned manufacturing enterprises receiving Regional Selective Assistance, 1986-96

	Assisted employment		Assisted investment	
	Total (,000)	% of GB	Total (£m)	% of GB
North East	22.3	12.2	2,955.8	23.8
Yorkshire/ Humberside	6.8	3.7	397.6	3.2
East Midlands	1.5	0.8	61.4	0.5
East Anglia	-	-	-	-
South East	0.6	0.3	11.4	0.1
South West	7.1	3.9	256.0	2.1
West Midlands	22.6	12.4	929.7	7.5
North West	18.8	10.3	972.8	7.8
Wales	45.1	24.7	2,613.2	21.0
Scotland	57.8	31.7	4,228.7	34.0
Great Britain	182.5	100.0	12,426.6	100.0

Source: Industrial Development Act 1982, *Annual Report*, HMSO, London, various years.

2.3 Electronics FDI in Scotland

2.3.1 Origins

The electronics sector has assumed increasing importance in the Scottish economy since the end of the Second World War. With the steady decline in Scotland's heavy industry - especially shipbuilding, steel and mechanical engineering - electronics growth has been the main source of new job creation in manufacturing. In 1959, the electronics sector's share of total manufacturing employment in Scotland was 1.1 percent; this had risen to 5.7 percent in 1973 and 16.4 percent by 1994 (Brown, 1996; Botham, 1997). Growth has been particularly notable over the last decade: the sectors accounted for 13 percent of total manufacturing output in Scotland in 1986, but 20 percent by 1991. Indeed, during the 1980s as a whole, gross output in electronics increased fourfold (Turok, 1993).

Broadly speaking, foreign investment in 'Silicon Glen' has taken place in several waves (see Table 2.3 below). Walker (1987) has identified three main periods of electronics

FDI in Scotland. The first phase of inward investment occurred between 1945 and 1959: during this time overseas-owned firms - nearly all of whom were American - began locating across the industrial Central Belt of Scotland. For example, NCR arrived in 1947, Honeywell in 1948, Burroughs in 1948 and IBM in 1951. These multinationals were primarily involved in manufacturing electro-mechanical products, such as time clocks, typewriters, cash registers and first generation computers. The reason for the arrival of these firms in Scotland during the immediate post-war period seems heavily influenced by the desire for US firms to gain greater access into the European market place, especially important given the weak state of Europe's indigenous producers in these product markets.

The second phase occurred between 1960 and 1975 and featured the emergence of a microelectronic components sector. During this period Motorola, General Instruments, Hughes Microelectronics and National Semiconductor all established plants in Scotland. These companies used semiconductor materials to manufacture transistors. National Semiconductor and Motorola were engaged in mass production of standard integrated circuits whilst Hughes and General Instrument manufactured specialised 'chips' for defence applications. The onset of semiconductor production gave rise to the term 'Silicon Glen' to denote the cluster of firms in Scotland's Central Belt.

These initial periods of investment activity were followed by a period of retrenchment during the early to mid-1970s which saw the levels of employment in the sector diminish due to some divestment. This was followed by a third wave between 1976 and 1985 which saw a broader array of firms coming to Scotland. For example, Burr-Brown and Digital Equipment both came to Scotland during this period. This period was also notable for the inclusion of Japanese firms in Scotland's stock of FDI. Mitsubishi Electric, for example, was the first Japanese firm to move to Scotland and began making colour televisions (CTVs) in Haddington in 1979.

Since the mid-1980s, a fourth wave of inward investment has occurred which has witnessed a number of new firms locating in Scotland, particularly in the data processing sector (Brown, 1996). Most notably, the rapidly growing personal computer manufacturers Compaq and Sun moved to Scotland during the late-1980s. They have been joined by a variety of other consumer electronics firms such as JVC (established in 1988) and telecommunications firms, such as Motorola which opened a cellular telephone plant in 1992. This FDI activity broadened the overall profile of Scotland's electronics industry to include a higher emphasis on consumer electronics and computer peripherals. Another feature of this fourth investment wave is the emergence of large investments made by Taiwanese and Korean firms (Chung Hwa and Hyundai respectively) expanding into Western European markets, though this has been partially suspended following the recent financial crises of several Asian economies.

Table 2.3: Leading companies in Silicon Glen

Company	Nation	Products	Location	Workforce	Opened
IBM	USA	personal computers (PCs) & monitors	Greenock	2,300	1951
Motorola	USA	semiconductors	East Kilbride	2,000	1969
Motorola	USA	mobile telephones	Easter Inch	1,600	1990
AT&T ¹	USA	automatic teller machines	Dundee	1,600	1946
DEC	USA	workstations	Ayr	1,600	1976
National Semiconductor	USA	semiconductors	Greenock	1,300	1969
Hewlett-Packard	USA	communications systems	S. Queensferry	1,000	1964
NEC	Japan	semiconductors	Livingston	850	1980
Polaroid	USA	cameras	Dumbarton	800	1950
Compaq	Japan	PCs	Erskine	700	1987
SCI	USA	electronics assembly	Irvine	800	1990
JVC	Japan	televisions	East Kilbride	700	1985
Motorola ²	Japan	semiconductors	S. Queensferry	550	1986
Mitsubishi ³	Japan	televisions	Haddington	515	1968
Oki	Japan	printers	Cumbernauld	500	1979

¹ Formerly NCR ² Opened as DEC, subsequently acquired in 1995 ³ Opened as Tandberg, acquired in 1987

Probably the most important difference between earlier phases of inward investment activity and contemporary investment patterns is the increasing importance of additional or 'top-up' investment by firms already located in Scotland. As competition for FDI intensifies, new greenfield FDI projects are becoming increasingly scarce (Amin *et al*, 1994; Young *et al*, 1994). This makes plant upgrading and reinvestment all the more important for Scotland. Plant reinvestment appears to be displacing greenfield investment as the key driving force within Scotland's electronics industry in the 1990s. In fact, much of the recent FDI flows in the electronics sectors comes from expansion investments (approximately 60 percent of all new foreign investment in Scotland).

Several of the existing investors have expanded their initial establishments in recent years, upgrading their plants to European headquarters (e.g. IBM) and principal production sites for the European market (e.g. Compaq). Such has been the scale of this investment, Scotland is being now used as a major export platform for several international electronics companies entering into EU markets. As a result, over a third of all the EU's personal computer production and 20 percent of Europe's semiconductors are produced in Scotland (*Financial Times*, 1995).

2.3.2 Recent Growth

Foreign investment in the Scottish economy has grown quickly over the last decade, particularly between 1995-97. The main reason for the scale of this recent growth is the increasing flows of electronics investment. Along with Wales, Scotland has a large share of its inward investment in electronics and data-processing equipment industries. As shown in Table 2.4 below, electronics accounts for roughly two thirds of all inward investment in Scotland between 1989 and 1997. It is in these sectors that Scotland has won several of the largest FDI projects located in the UK in recent years, such as the Taiwanese maker of cathode ray tubes for televisions and computer monitors, Chung Hwa (creating approximately 3,300 jobs).

Table 2.4: Inward investment in Scotland (£ million, 1990 prices)

	1989-91	1991-93	1993-95	1995-97
Total inward	1,240.4	682.4	1,386.5	3,158.5
Total non-UK	842.7	576.3	1,268.9	2,941.1
Electronics	810.5	290.3	930.3	2,540.7
Electronics as % of total inward	65.3 %	42.5 %	67.1 %	80.4 %

Source: Locate in Scotland.

The industry is divided into several key sectors (Botham, 1997). The most important in both employment and gross value-added terms is radio, TV and telecommunications production (accounting for approximately a third of both categories for the sector as a whole). Office machinery and computing are also very important: just over a quarter of electronics employment is in this sector and it generates over a third of sectoral gross value-added. In both sub-sectors, foreign firms have a dominant role, holding approximately 70 percent of total employment.

In general, electronics is consistently dominated by incoming foreign-owned firms. By 1994, foreign-owned companies were responsible for 51 percent of total employment (Botham, 1997). According to the 1992 Annual Census of Production, they produced over 80 percent of gross value added in the sectors (Jackson and Patel, 1996). This owes to the high capital intensity of the semiconductor and telecommunications sectors which are mostly foreign-owned. In purchase terms, foreign companies are even more dominant, as they are responsible for 90 percent of electronics components purchasing within Scotland. Consequently, the share of sectoral employment in electronics held by UK companies has fallen from 52.5 percent in 1983 to 38.4 percent in 1993 (Brown, 1996). US companies have been the main investors, employing nearly half of all electronics workers in Scotland by 1993.

2.3.3 Electronics Exports

One important consequence of this sectoral pattern of FDI is the knock-on effect this has on Scotland's export profile. Scotland's export activity is heavily concentrated in a few key sectors. Three-quarters of all Scottish manufacturing exports in 1995-96 were made in three industrial sectors (Table 2.5). Within these three, the electronics sector -

composed of office machinery, communications equipment, consumer electronics and electrical machinery sub-sectors - have dominated the Scottish export profile over the past decade. Of the sub-sectors, office machinery has been responsible for the bulk of electronics exports - 70 percent in 1995-96. The strengths of the electronics sector as a whole have been particularly highlighted in recent years, as the sector's share of manufacturing exports rose from 42.2 percent in 1989-90 to 54.8 percent in 1995-96. Electronics are of greater significance to manufacturing exports in Scotland than for the UK more widely - between 1989 and 1996, electronics accounted for 46.9 percent of the value of Scottish manufacturing exports, but only 17.4 percent of UK manufacturing exports.

Table 2.5: Scottish manufactured exports

	1989-90		1991-92		1993-94		1995-96	
	<i>Total</i> ¹	% ²	<i>Total</i> ¹	% ²	<i>Total</i> ¹	% ²	<i>Total</i> ¹	% ²
Scottish exports	8.41	9.5	8.65	9.8	11.18	11.0	14.02	12.0
- electronics	3.55	42.2	3.52	40.7	5.08	45.5	7.69	54.8
- whisky	n.a.	n.a.	1.85	21.4	1.86	16.6	1.79	12.8
- chemicals	0.81	9.6	1.08	12.4	1.19	10.6	1.23	9.2
UK exports	88.51	100.0	87.82	100.0	101.59	100.0	116.81	100.0

¹ - £ billion, 1990 prices.

² - 'Scottish exports' share is given in relation to UK manufacturing exports as a whole; 'electronics', 'whisky' and 'chemicals' shares are given in relation to Scottish manufacturing exports.

Source: Scottish Council Development and Industry.

Apart from electronics, the other two key export sectors in Scotland have been whisky (16.2 percent of total manufacturing exports between 1991 and 1996) and chemicals (10.3 percent of exports between 1989 and 1996). However, both sectors have not experienced the same sustained export growth as electronics: as a share of all manufacturing exports, they have either declined (as in the case of whisky) or remained relatively stable (in the case of chemicals) over time.

Moreover, Scottish exports have been dominated by large firms. The 25 largest exporters accounted for nearly 70 percent of the value of total manufacturing exports. The Scottish Council statistics allow for more detailed analysis of the relative contributions of large (as defined as firms with over 200 employees) and small firms. Over the past decade, the balance between both categories of firms has been stable - large firms have been responsible for approximately 85 percent of total exports. When examining the leading export sectors in the Scottish economy, the dominance by large firms is even more pronounced. While figures are not available for whisky, large firms have consistently accounted for approximately 94 percent of electronics and 87 percent of chemicals exports.

2.3.4 Current Challenges

The growth in electronics foreign investment has been accompanied by concerns over their level of 'embeddedness' within the Scottish economy (Brown, 1996). It has been argued that the major investments have been assembly plants with low levels of technology transfer and weak linkages to local suppliers. Turok (1993) found that only 12 percent of the sector's material inputs were sourced locally and that the higher value-added functions of the companies - notably strategic management, RTD and marketing - have consistently been located outside of Scotland. Jackson and Patel (1996) found that only 22 percent of total purchases were made within Scotland and noted that Scottish firms tend to supply lower value-added components to the major investor plants.

Another important feature of Scotland's electronics industry is the nature of the skills and technical expertise inherent within plants. There is some controversy over the range of skills used within Scotland's electronics plants. Some researchers have noted the considerable degree of skill polarisation within the industry (Dunford, 1989). Dunford argues that the relatively high number of managerial and professional workers is, in turn, mirrored by equally high levels of unskilled and semi-skilled workers. He also notes that the proportion of craftsmen/women and skilled operators is conversely low. This polarised skill structure has also been detected in other electronics regions (Munday, 1995).

The extent of RTD and product design work carried out in Scotland is also open to question. A study of Scotland's electronics plants during the early 1980s noted that the level of product design was often circumscribed by their production-related nature (Haug *et al*, 1983). In other words, most development work involved work of a process rather than a product nature. More recently, researchers noted that more design was being undertaken in Scottish branch plants than had hitherto been the case (Young *et al*, 1988). Clarke and Beaney (1993) point out, however, that RTD is restricted to all but a few best practice plants, with only a limited number of firms undertaking sophisticated design work in Scotland while the majority remain primarily geared towards high-volume assembly. Owing to the process of reinvestment made by existing foreign-owned firms within Scotland, the composition of electronics firms is complex and subject to continual change and transformation.

The evidence has led to debate over the long-term stability - and value - of FDI in this sector and what policy options are available to increase the level and value of local sourcing by foreign investors. While electronics FDI has been associated with a range of positive effects (mainly income and employment), there is widespread concern at how little of the value of these FDI plants has been transferred to the local economy. Scotland's indigenous electronics industry does not appear to have grown greatly in response to the demand of the major electronics investors. Local purchasing has largely been made in low value-added parts of the sectors, such as packaging and sheet metal presswork (Botham, 1997). Criticisms continue to be made of the policy of attracting large FDI projects to Scotland, as it has a danger of turning the region into a 'branch plant' economy. Consequently, in recent years, policy has begun to consider ways in which foreign investors can be linked into the local economy more securely.

The most recent period has been particularly turbulent for Scotland in relation to inward investment for other reasons. Several new developments could potentially have important long-term effects on investment trends within Scotland's electronics industry. First, Scottish inward investment agencies will face a combination of greater restraints and more competition in future. The UK government is currently reviewing the institutional arrangements for inward investment attraction in order to prevent excessive competition between different regions (especially, Scotland and Wales) for foreign investment projects, particularly in relation to Regional Selective Assistance (RSA) awards. At present, RSA is eligible in all designated areas of the UK. The Department of Trade and Industry is responsible for RSA and is currently drawing up new guidelines which will ensure that inward investors do not 'play off' different parts of the UK against one another. The new 'concordat' on inward investment could potentially lead to greater restrictions in the way Locate in Scotland - the Scottish inward investment agency - negotiates financial packages with overseas investors. Moreover, with the creation of new Regional Development Agencies in the English regions with enhanced powers for attracting inward investment, Scotland's advantage of a well-organised system for inward investment promotion will be challenged.

Second, external factors have threatened the major new sources of Scottish inward investment. Owing to the recent turbulence in Asian financial markets, doubts have been expressed over the ability of Asian companies to proceed with their investments in Scotland. One of the most significant recent developments has been the cancellation of the Hyundai project in Dunfermline. The South Korean company had planned to build a new wafer fabrication plant in Scotland, but were forced to delay the project for the near-future at the end of last year owing to the financial turmoil in their domestic economy. The company had already spent more than £100 million on the project. According to the firm, the recent devaluation of the Korean currency has made foreign investment in Scotland more expensive while at the same time making exports from Korea more cost-effective.

More than £14.3 million of public money has already been spent by Scottish Enterprise on buying and preparing the site for Hyundai. This included: the cost of the land purchased at £4.9 million; levelling of the site £4.0 million; utility provision of power £3.6 million; utility provision of water £0.8 million; utility provision of gas £0.7 million; and fees of £0.4 million. Against the wishes of Scottish Enterprise, Hyundai is seeking to have ownership of the site transferred to the company as a means of securing further capital for the project. Although it is still too early to know how far these financial difficulties will affect Scotland's foreign investment inflows from Asia, the problems suffered by Hyundai suggest that the investment plans of some Asian companies may be on 'hold' for the immediate future.

2.3.5 *Determinants of Inward Investment in Scotland's Electronics Industry*

The key location determinants which account for Scotland's success in attracting FDI are predominantly regulated at the UK level (e.g. overall business environment, regional incentives, labour market regulation etc.). Nevertheless, a number of issues which influence location decisions are shaped by institutions and policies which are different in Scotland compared to the rest of the UK.

The following sub-sections focus on the main factors which attract foreign-owned firms to locate in Scotland, particularly the human, intellectual and physical infrastructure. Some empirical case study evidence is also provided.

2.4 Location Factors for FDI

2.4.1 *UK Location Factors*

Much of Scotland's ability to attract foreign investment - especially in the electronics sector - is based on national and international location factors. Although the choice of Scotland as a location *within the UK* is dependent on its regional advantages, its selection compared to regions in other European countries often results from the desire of investors to be based in the UK. The national factors which have been most important in the UK's inward investment attraction have been:

- EU market access;
- the UK as a national market;
- the UK's business environment;
- relative labour costs and productivity; and
- financial and policy incentives.

A comprehensive review of each of the above location factors is outlined in the interim report (see Brown, et al, 1997).

2.4.2 *Scottish Location Factors*

This section examines the region-specific factors which play a part in attracting inward investors to Scotland, particularly factors affecting electronics firms.

(i) Human and Intellectual Infrastructure

Scottish Enterprise and Locate in Scotland (Lis) recently commissioned a study to identify the main reasons why foreign-owned companies located in Scotland. A total of 79 companies participated in the study. One of the main findings of the independent survey was the importance of the skills within the workforce, attitudes to work, and worker willingness to accept and embrace new technology. The survey found that

employee performance is the main reason why companies prosper and expand in Scotland with 96 percent of firms claiming that employee productivity has matched or exceeded their targets. Furthermore, 40 percent of firms claimed that the performance of their companies was better than equivalent plants in other parts of the world.

According to Locate in Scotland, one of the factors most often cited by inward investors as a reason for choosing a location in Scotland is the availability of a skilled, flexible and enthusiastic workforce. In 1994-95, nearly 150,000 students were in higher education in Scotland in the country's 13 universities and 53 colleges. Scottish higher education also produces a higher average per capita share of electronics graduates than the UK as a whole. Scottish Enterprise also directly assist inward investors with their training needs through a host of firm-specific and general vocational training packages. Such training schemes have been identified as one of the key strengths of Scotland's aftercare policies directed towards inward investors (Amin *et al*, 1994).

Customised training packages are mostly associated with start-up inward investors and primarily involve screening, recruitment and basic training. In 1993-94, around 3,000 people were given relevant training by Scottish Enterprise. This aside, training administered by Scottish Enterprise and the Local Enterprise Company (LEC) network is mostly associated with the delivery of national employment and training programmes. Little in the way of sectoral specific programmes are undertaken on behalf of Scottish Enterprise by the LECs. Despite the fact that Scotland has a well-developed education system and higher than average UK unemployment (indicating an excess supply of potential workers), the electronics industry often encounters substantial skills shortages and job-hopping - particularly at technician level. In this respect, Scotland mirrors the traditional neglect of vocational training in Britain as a whole when compared with France and Germany (Finegold and Soskice, 1988).

Scotland has a very strong RTD core which is heavily concentrated in the higher education sector. While accounting for only nine percent of the UK population, Scotland has 15 percent of the academic science base. There are 6,400 scientists, technologists and engineers working in its 13 universities with a further 3,500 people working in government-funded research institutions. Measured by the number of published papers, Scotland ranks sixteenth in the world, accounting for just over one percent of all scientific publications in refereed journals. On a per capita basis, it ranks third in the world. However, a major study of Scotland's academic research base discovered that Scottish academics are less involved in spin-offs and entrepreneurship than some of its international competitors (Scottish Enterprise, 1996a). Although links exist between academic and business communities, relatively few involve research on product and process innovation.

Within the electronics sector, Scotland has a world-class university research base in a number of advanced technologies, notably artificial intelligence, massive parallel processing and opto-electronics. However, beyond the supply of high-calibre graduates, technology links with the electronics industry generally remain weak (Peters, 1995). One of the reasons for this is the lack of an RTD component within the corporate sector in Scotland - for example, most foreign investors in the electronics industry have no substantive design element. Research in Scotland has shown that

RTD intensive foreign multinationals are more likely to have links with the local research base and more extensive local supply linkages than plants without this mandate (Brown, 1996).

(ii) Physical Infrastructure

Although geographically remote from the rest of mainland Europe, Scotland has a reasonably well-developed transportation infrastructure. The transport system is most advanced in central Scotland where the bulk of foreign investors are located. Although less congested than the rest of the UK, the Scottish road network has a less comprehensive motorway system than regions in England. The rail network in Scotland is also somewhat poorer than in the more southerly parts of the UK. Nonetheless, there is a full-service Euro-terminal for the Channel Tunnel at Mossend in Lanarkshire. In addition, some of the UK's most important seaports are located in Scotland. They include Clyde (Glasgow), Forth (Grangemouth), Leith (Edinburgh), Dundee and Aberdeen. Scotland has four international airports - at Glasgow, Edinburgh, Aberdeen and Prestwick - though none have a full international flight schedule. The lack of international flights is a frequent criticism made by large electronics inward investors in Scotland which require air freight deliveries.

As in the rest of the UK, telecommunications in Scotland are well-developed. Although direct comparisons are difficult, the cost of UK telecommunications are among the lowest in Europe. The reason for this is because the UK has the most deregulated telecommunications market in Western Europe. Partly as a consequence of cheap telecommunications, Scotland has been able to attract a host of call centres which serve the UK and elsewhere in Europe. In January 1997, the US-based Eaton Corporation announced it was to establish a European shared financial services centre in Glasgow. More than 100 jobs will be created for professional staff with business, IT and language skills. IBM also operate a help centre in Scotland which serves their business customers throughout Western Europe. This call centre is located within their manufacturing facility in Greenock and employs 500 people. Telecommunications have also been developed in remote parts of northern Scotland, e.g. the construction of an advanced ISDN network in the Highlands & Islands region. This enables companies to relocate back-office administrative functions to low-cost regions in the north of Scotland where inward investment is traditionally low.

Another key aspect of Scotland's infrastructure is its industrial property and sites. Manufacturing inward investors, especially large electronics companies, often require extensive custom-built facilities. In the past, the bulk of this greenfield foreign investment has been made in Scotland's specially-designated New Towns. Scotland's New Towns had their own development corporations which ensured that they had a good supply of industrial sites. Although these corporations have since been disbanded, Scottish Enterprise maintains a property database covering land and buildings considered suitable for incoming companies. Prices for industrial land are typically in the range of £40,000-£100,000 per acre. Rents for industrial facilities are around £2-£3 per square foot for low-specification buildings, rising to about £4-£5 per sq. ft for high-specification buildings.

Scottish Enterprise also works in close co-operation with all the Local Enterprise Companies throughout Scotland to ensure that sufficient industrial sites and properties

are available to meet the needs of large inward investors. For example, the Glasgow Development Agency (the Glasgow-based LEC) has recently launched the Strategic Sites Initiative to develop seven major business sites to encourage inward investment into the city. As part of this initiative, the Robroyston Business Park in Glasgow is being developed at the cost of £1.8 million to prepare 67 acres of land for the first single-user inward investment site of its kind in Glasgow. By 1997, 16 hectares of fully serviced land had been prepared for the development of up to 70,000 square metres of business space.

Private utility companies in Scotland work closely with incoming firms to ensure that their needs are catered for, often involving tailored supply agreements. This is very important for the semiconductor industry which requires large quantities of stable electricity and very clean water supplies.

2.5 Case Study Evidence

Clearly, different firms have different reasons for locating activities in Scotland. Having looked at some of the general factors which have attracted firms to locate activities in Scotland, we shall now examine specific case studies of foreign-owned firms and the reasons they decided to locate in Scotland. This evidence was collected during face-to-face interviews undertaken by the EPRC with four leading electronics firms located in Scotland.

What emerges from the following case studies supports the argument that UK location factors, such as market access and labour market regulation, are often the most important reasons why foreign firms decide to locate in Scotland. Nonetheless, two important regional-level location factors are cited by inward investors. First, the existence of other electronics firms in Scotland creates a ready-made market for some firms, while also creating the impression that Scotland is a suitable location for electronics production (i.e. agglomeration effects in terms of suppliers, skills availability etc).

Second, the role played by Scotland's inward investment agencies and other economic development bodies is also shown to be important, particularly in relation to firms that want to expand quickly through the acquisition of an existing site (e.g. Company A) and those who have little experience of local issues such as property, utilities and legal affairs (e.g. Company D). The other notable factor is the relatively small role attached to financial incentives by the companies which were interviewed.

2.5.1 Company A

Company A is a US-owned contract electronics multinational, specialising in the surface-mounting of printed circuit boards. The Scottish subsidiary currently has approximately 1,300 workers, of which about 800 are permanent. Its decision to locate in Scotland was made in 1993, but came after other forays into Europe by the company. Its first European site was taken over a former plant owned by a major computer producer in southern France. A Scottish location was favoured over an

expansion of the existing French site or a new site elsewhere in Europe for several reasons:

- Scotland had a large ‘catchment’ area of potential customers because of the concentration of electronics OEMs;
- Scotland had significantly lower wage rates than France (by a factor of 1.5) and other considered sites (though it was stressed that this was a relatively minor factor, given that labour costs only account for about 15 percent of total production costs); and
- a site came up with the sale of an existing assembly plant in eastern Scotland.

Subsequently, other European sites have been developed by the multinational, including a German greenfield plant; a new Swedish plant (containing the European RTD facilities) and an Irish site (which was bought from another company). Purchasing existing plants tends to be Company A’s preferred entry strategy. It is worth noting that Scotland was originally chosen because of proximity to key local customers, but now exports are taking up more of the plant’s sales. At present, the company faces stiff competition from three other major electronics sub-contractors in the Central Belt area, in what was described as a “cut-throat” business.

2.5.2 Company B

Company B produce inkjet cartridges for printers. Ink cartridge production is based in three plants worldwide: a principal site in the US (the largest and the HQ), a Mexican plant and the Scottish site. The company inherited a French site from a large computer manufacturer following its leveraged buyout by the management, but that does not appear to have been used for cartridge production. The Scottish plant currently has 350 employees (of which, half are core and half, fixed-term), but is expected to double within three years. Most of the plant’s output is exported to Western Europe, principally as branded products for distribution to small end-users (rather than local OEMs).

The company located at the purpose-built greenfield site outside Rosyth in 1995. The main reasons cited for a location in Scotland were:

- labour costs, which were low relatively to the rest of Western Europe (and a deciding factor over France); and
- national financial incentives (though as usual, it was emphasised that the (undisclosed) size of the grant was relatively small compared to overall costs).

The location decision came down to Scotland or Ireland: it is not clear whether the assistance was a determining factor, but the ability of the Scottish authorities to move quickly and commit to the company’s development schedule was cited (perhaps a reflection of the better organisation of the inward investment agencies here).

2.5.3 *Company C*

Company C is a US-based computer manufacturer who established its European manufacturing operations in western Scotland in 1987. International expansion has come early in the company's history, effectively occurring in parallel with its continuing growth in the US (the company was only founded in 1982). The principal market for the plant's output was initially the UK, but it has since expanded to Western Europe as a whole.

The Scottish location was a purpose-built greenfield site that has experienced three expansions since 1987, so that the company has now 2,000 employees. Of the workforce, approximately 70 percent is temporary/peripheral, largely to allow for the significant seasonal variation in output (by as much as 40 percent).

The motives for the Scottish location were not unusual for a firm of the company's type. Initially, a series of locations were considered in Germany, France, Ireland and the UK. Germany and France were ruled out because of a combination of high labour costs and low employment flexibility (particularly with regard to the use of temporary employment and operating round-the-clock shifts). Ireland was in close competition with UK sites, notably because of the advantage offered by its tax holiday, but ultimately lost out because the UK offered a larger initial domestic market and better transport access to developing markets in Western Europe.

More specifically, Scotland was chosen because of the existing regional 'experience' with the electronics industry: the region has a well-developed infrastructure for the electronics industry, particularly in terms of skills, suppliers base and the ability of government agencies to respond to electronics company needs. Wider infrastructure issues also played a part: political stability, positive attitudes to foreign investment, telecommunications and transport quality, etc. Further down the list - but not unimportant - was the receipt of financial support, though this was not a relevant factor in the competition with the other leading contender site (Ireland).

2.5.4 *Company D*

Company D is a Japanese electronics company, which opened in 1988 on a brownfield location south of Glasgow. The production levels began at about 100,000 colour televisions (CTVs) p. a. in 1988 and are now at 250,000 per year. The plant currently employs 300-350 but this figure fluctuates significantly due to seasonal demand variations. In total it has about 250 full-time permanent staff and the rest is made up of temporary casualised labour. In 1994, following a further investment from its parent company, the plant added audio systems to its product range.

The main factor underlying the company's decision to invest in Scotland was to ensure access to the UK market. The company also wanted its manufacturing operation located in the UK because of the supportive environment which the UK government gives to inward investors. The UK is also the largest market within Europe. The choice of location seemed to be based on the need for a quick start-up operation. The availability of a suitable brownfield site was a key factor in this respect. The company relied very heavily during this period on support from the local

New Town Development Corporation (NTDC). They provided a very hands-on and effective service providing the firm with help on legal matters and help with property etc. This was particularly helpful for a Japanese company with no previous knowledge of such matters in Europe.

The motivational factor underlying the plant's investment to manufacture audio equipment (i.e. CD systems) was driven by the falling sales of CTVs during the recession in 1993-94. This investment was crucial to cover fixed costs at the plant owing to the low output levels from CTV production. The plant had to negotiate with the corporate headquarters in Japan before the investment could get the green light. This was made all the more difficult by the fact that its corporate structure is strictly divided between CTV and audio production. The plant's management campaigned hard for the investment and had to compete with other plants world-wide to get the investment.

The plant's management felt that financial support was vital in getting the company to agree to the project. The project was supported by RSA under the safeguarding of existing employment clause. The company contacted the Scottish Office concerning the project's eligibility for RSA, but were quickly transferred to Locate in Scotland. The key role played by Lis during this period was the political support they could bring from senior politicians at the Scottish Office, including the Secretary of State for Scotland. The plant believes that ministerial visits to their headquarters in Japan were very important in this respect. This aided the plant's ability to win the investment from the parent company in Japan.

3. INSTITUTIONS AND INWARD INVESTMENT IN SCOTLAND

This section examines Scotland's institutional infrastructure for inward investment promotion and development. There are three main institutional tiers engaged in these activities in Scotland. The most important actors involved in FDI attraction are the national agencies Locate in Scotland and Scottish Enterprise. However, below this main tier there are two other sub-national local actors, i.e. Local Enterprise Companies and local authorities, who also play a vital role in co-ordinating inward investment promotion and aftercare in Scotland. These are examined in turn below.

3.1 Locate in Scotland and Scottish Enterprise National

Inward investment promotion in Scotland is coordinated through Locate in Scotland (Lis), the principal government organisation charged with attracting investment to the country. Lis is central to Scotland's investment success, not only with respect to the investors - all of whom in the case-study interviews had listed Lis as the principal government agency with which they dealt during their investment - but also to the other public sector organisations involved in attracting FDI to Scotland. Although Lis works in collaboration with other government agencies on different aspects of inward

investment promotion, it remains the main point of contact for potential, new and existing investors.

Lis is a geographically based agency with a specific remit to promote Scotland; however, it is important to emphasise that the agency works within a national framework for inward investment promotion. This is apparent in two areas: marketing and financial assistance. First, overall responsibility for marketing the UK as a whole to foreign investors lies with the Invest in Britain Bureau, a division of the UK Department of Trade and Industry (DTI) in London. Its main function is to coordinate the different activities of locally-based agencies and to be chiefly responsible for promoting England to foreign investors. While Lis maintains a large degree of autonomy in its promotion strategy and operations, IBB provides a strong element of monitoring, as Lis reports to IBB on a regular basis throughout the year. Such meetings also enable Lis to exchange experiences and sort out any potential conflicts over individual projects with other regionally-based agencies in the UK - such as the Welsh Development Agency and the Industrial Development Board for Northern Ireland. Furthermore, Lis actions are closely defined at a national level with respect to the use of financial assistance to attract inward investment projects to Scotland, particularly Regional Selective Assistance (RSA), the main incentive available to investors. A detailed set of guidelines on area designation, project eligibility, award rates and decision-making procedures have been laid down for RSA by the DTI. The different regional agencies strictly adhere to these guidelines to avoid regions 'bidding up' incentive awards in order to capture attractive projects.

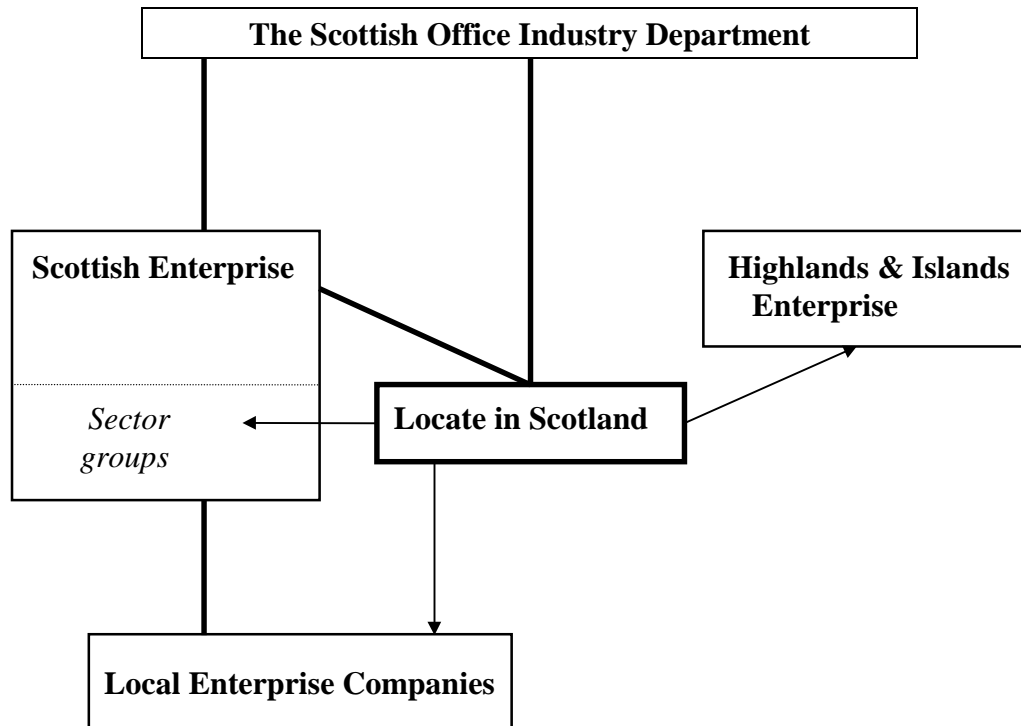
Despite these national limits, Lis has been granted significant autonomy to develop and conduct an inward investment strategy appropriate for the Scottish economy. Figure 3.1 illustrates the main organisational links between Lis and other Scottish agencies. Lis is a department within Scottish Enterprise (SE), though it is officially a joint venture between SE and The Scottish Office, with staff seconded from both organisations.

- *Scottish Enterprise* is one of two development agencies operating in Scotland: it oversees the southern half of the country (covering over 90 percent of the Scottish population) while its sister organisation, Highlands and Islands Enterprise (HIE), is responsible for the more sparsely-populated northern half of Scotland. Scottish Enterprise has a budget of £400 million per year and is split between Scottish Enterprise Operations and Scottish Enterprise Network Management, the latter part is primarily responsible for overseeing the local enterprise companies which are discussed later. As the region's primary development agency, SE has several key objectives within its overall aim of raising income and employment levels in Scotland, including providing business support, upgrading skills levels and attracting inward investment.
- *The Scottish Office* is the government department responsible for Scottish affairs (including health, education, transport and industrial matters). In 1997, there were 3,500 civil servants employed in the Scottish Office and a further 6,000 staff in the nine Executive Agencies in Scotland. Proposed expenditure by the Scottish Office and its Executive Agencies in 1997-8 is £14.3 billion. It provides the budget for SE (and HIE) operations and has responsibility for certain aspects of regional

economic development not covered by SE (e.g. physical infrastructure). Effectively, SE activities are monitored by The Scottish Office. It also oversees national business development policies operating in Scotland, most notably RSA.

Figure 3.1: Locate in Scotland and other Scottish policy organisations

Thick black lines denote direct organisational control; arrowed lines denote cooperative relationships.



Lis is directly responsible to the Secretary of State for Scotland, the government minister who is head of The Scottish Office, with a supervisory board that oversees its general policy direction and is composed of senior officials from SE and The Scottish Office. Lis has a central Glasgow-based headquarters and a network of 11 foreign missions located in the US, Western Europe and Asia as well as a London office (for inward investment from other parts of the UK). In its main headquarters, the agency is structured as teams along geographical lines (e.g. North America, Asia) as well as thematically (e.g. financial assistance, aftercare).

Lis employs approximately 100 people worldwide (about 60 within Scotland itself). Administrative costs attributable to Lis activities amounted to £6.6 million in 1996. These figures indicate the costs of inward investment marketing and staffing, but to this should be added the value of financial assistance to foreign investors in Scotland. For 1995-96, RSA grants to the value of £160 million were awarded to 119 foreign investment projects, creating and safeguarding estimated employment of 22,600.

Before reviewing the 'secrets' of Lis' success, it is worthwhile mentioning their stated objectives. Lis regards its mission to consist of:

- marketing Scotland as a location for inward investment;
- giving advice and assistance to potential investors;
- delivering development packages tailored to investors' needs; and
- providing aftercare to inward investors.

These objectives are clearly present when examining Lis' activities. To understand how the organisation has been able to achieve these objectives, the activities should be analysed in detail, according to the different stages of inward investment promotion: promotion and marketing; provision of financial support; aftercare to existing investors; and long-term strategic development. A summary of these different functions is presented in Figure 3.2 later in this section.

3.1.1 Promotional

Inward investment marketing has increasingly become a sophisticated process within FDI agencies across Europe. Developing such techniques is essential, as companies are routinely bombarded with inquiries from agencies about potential investment projects. Creating and projecting distinctive selling points for different regions is difficult in an environment of intensifying FDI competition. By this point, Lis has an immediate advantage over many of its newer rivals because it has a long-standing reputation; nevertheless, the key elements of its promotional strategy are not unique.

The first significant element is the need to establish the visibility of the agency's region. For many of the sectors that Lis is targeting - most notably electronics - there are a range of regional locations in Europe which can satisfy the main criteria of the investor. Few investment projects are tailored to specific regional characteristics, and those that are rarely require the efforts of an inward investment agency to contact the investor. Most investors use a series of indicators to determine a 'shortlist' of potential locations before undertaking more intensive analysis to select a single site. The task of Lis is to ensure that Scotland is included on the shortlist.

To achieve this, it is essential to have a local presence in the target investor market. For Scotland, this not only includes representative offices in different global regions - such as North American and Asia - but also in different parts of that region - such as the east and west coasts of North America and national offices in Japan, South Korea and Taiwan. The success and size of Lis has allowed it to expand its international network of representation with relative ease; however, even in the absence of extensive resources, if an agency is to be proactive - rather than merely respond to external inquiries being made about the region - it must have a foreign presence of some sort. Such offices are crucial for gathering market intelligence about future investment projects and the activities of rival agencies as well as in directly marketing the region to potential investors.

With the increasing competition for FDI projects among regions as well as countries, it has not only become necessary for agencies to have foreign offices, but to separate out the different parts of the marketing process and develop specific techniques for

each part. These parts can be considered under the categories of general, sectoral and company marketing.

General marketing involves the selling of the Scottish region as a whole. Lis makes heavy use of the local Scottish 'mafia' to support its promotional activities: i.e. Scots in senior management positions in local companies and organisations who are able to assist the local mission with marketing. Moreover, local offices often arrange special meetings or social events to promote Scotland, often timing these to occur with the visits of senior Scottish or UK government officials. These activities are not directed at specific projects, but merely aim to raise the profile of the Scotland generally.

Sectoral marketing requires the agency to have developed a clear picture of the types of sectors that it intends to target for inward investment promotion. A sectoral focus is essential for promotion, in that it helps to target limited promotion resources as well as to maximise the benefits of FDI by concentrating it in certain sectors. Such strategies must identify the strengths of the local economy and the sectors in which investment would provide the greatest value added. They must also be integrated within wider regional economic strategies.

Over time, Lis has been able to operate a more sophisticated strategy by which it can target sub-sectors within its priority sectors, but this represents a mature stage of the inward investment promotion process. This type of marketing normally proceeds through an analysis of the target sector in the specific geographical market, including information gathering on new start-ups, expanding companies and forthcoming investment projects. This can be followed by advertising in industry journals and magazines, mailshots to companies in a specific sector and phone marketing.

Company marketing is the last stage of the promotional process. Where individual companies are known to be considering investment decisions, it is important for agencies to approach the key decision-makers. However, it is more effective if such approaches have already been made prior to the decision to make an investment. For example, in the case of one of the investors interviewed for the study, Lis had approached the company before it had begun to develop its international expansion programme. Consequently, when the company did begin considering foreign investment, Scotland was already in a position to be shortlisted. This kind of long-term marketing requires extensive information collection, an activity in which Lis has developed an expertise. Information on potential investors is stored in a detailed database which allows Lis to screen likely investment prospects. Moreover, close and regular links between geographical teams located in the Scottish headquarters and the various mission offices enables Lis to co-ordinate effectively its domestic and foreign promotional efforts with potential investors - for example, the foreign offices of Lis can rapidly obtain specific detailed information on different aspects of Scotland from the domestic headquarters for potential investors.

The final stages of company marketing may require arranging hospitality visits to the region by the company, meetings between senior government officials and company executives and the offer of financial incentives (as described in more detail in the next section). Lis also introduce potential investors to existing foreign investors in Scotland. In fact, one of the company's interviewed is used by Lis to describe the benefits of Scotland to other foreign firms. Underlining these different activities is the

ability of Lis to make use of a well-functioning network of government agencies to use for specific tasks in the promotional process. This is possible in Scotland because of the high priority that has been placed on inward investment attraction across the public sector, leading to a level of commitment that has repeatedly impressed (and influenced) investors.

Lastly, promotion is made easier in Scotland by Lis having its own capabilities for generating its own marketing material. An in-house design team produces the agency's main publications - brochures, reports, etc. - as well as tailoring specific material for individual investors if required. It also has an extensive database of available properties suitable for industrial development, on which details can be easily sent to interested investors, though Lis itself does not own any property which can be developed.

3.1.2 Financial Support

The use of financial assistance has increasingly become a key tool in inward investment attraction. Although companies consistently claim that incentives are not a major determinant of their investment decisions, it still remains rare for major investment locations in Western Europe not to be accompanied by some form of assistance. Incentives are particularly important at the shortlist stage of decision-making, and the level of financial assistance can often be the deciding factor between regions which are otherwise equally attractive.

Lis does not directly have the authority to award or administer RSA, the main financial grant available in Scotland; these powers remain with the Industry Department division of The Scottish Office. However, the close links between Lis and the finance section of The Scottish Office enable Lis to use incentive offers in its promotional efforts. A finance team within Lis, composed of employees working directly for The Scottish Office Industry Department, are authorised to assess quickly what level of financial assistance can be offered to potential investors. At the same time, Lis' regular meetings with other regional inward investment agencies in the UK prevents companies 'shopping around' for higher incentive offers, as intelligence about individual investors is quickly distributed through the IBB network.

3.1.3 Aftercare

Aftercare - or the 'after-sales' service offered by Lis to existing investors - has received increasing priority in recent years. In brief, aftercare covers a range of services that Lis representatives offer to current investors to maintain their commitment to their Scottish location. With competition for foreign investment rising in Western Europe at a time when new investments may be levelling out or even declining, greater emphasis is being placed on securing additional investments from existing investors - for example, through site expansions. At the same time, as the EU becomes more integrated with the completion of the Single Market and the introduction of a single currency, several multinational companies are considering a rationalisation of their existing investments in Europe. Rather than having multiple sites serving national markets, companies may be aiming to centralise their business

activities in single European locations. Lis aims to ensure that Scotland is not one of the sites where investment is closed down.

Aftercare also embodies a wider strategic goal of enhancing the development of the Scottish economy. Inward investment promotion is no longer simply concerned with the attraction of projects, but also at encouraging investors to deepen their links with the local economy. The objective is to increase the value of an investment to the local economy over time, so that the investor not only contributes jobs and income to the region, but - through increasing their levels of local sourcing and links with local companies - new skills and technologies as well.

A special team within Lis works on aftercare issues. Several years ago, the tasks used to be divided between the different geographical teams, but as aftercare became a more complex activity, it was decided to have staff dedicated to it. Currently, Lis divides the responsibilities for aftercare with the Local Enterprise Companies. (LECs are described in more detail in the following section). Major investors - or 'accounts' - are handled by Lis directly, while smaller investors are covered by LEC officials in the individual sub-regions of Scotland. Each Lis official on the aftercare team can be working with up to ten accounts at any one time, usually grouped together by the investor's country/region of origin. Developing such personal relationships with companies is regarded as an important element in successful aftercare - hence, if a subsidiary should get a new manager, the Lis official will arrange to meet the individual at the earliest opportunity.

Aftercare gives a good example of how Lis works with different Scottish agencies. In most cases, Lis officials are in close co-operation with the individual LECs on specific company accounts. For example, if an existing investor is considering an expansion of its Scottish site, the Lis and LEC representatives will often both meet with the company to find out what it requires to go ahead with the expansion. This can involve meeting with the company as often as once every two weeks. Other public sector officials - such as local authorities - can be brought in as required.

In this context, Lis' main function is to facilitate the company with its plans. After a company has made an investment, the Lis official will meet with the company on a regular basis to ensure that it is not experiencing any problems and to find out what its future plans may be. If an opportunity to expand the investment arises, the Lis official will liaise with different government agencies to assist the company with regards to acquiring new property, planning regulations, receiving training support and possible public sector finance. If the foreign subsidiary is aiming to secure a decision by its parent to site a new investment in Scotland, Lis will work closely with the subsidiary to persuade the parent to make a decision in favour of Scotland. As with the case of one firm interviewed during the study, Lis can draw upon ministerial support from the Scottish Office to help persuade the company to invest in Scotland.

3.1.4 *Strategic Development*

Development of a Scottish inward investment strategy is a continuous process in which Lis operates closely with other public agencies, particularly Scottish Enterprise. As a crucial element in the success of inward investment promotion in Scotland, networking between different public sector organisations is particularly important in identifying future directions for strategic development. Such networking involves links with other parts of SE, especially the units dedicated to supporting businesses in the key sectors of the Scottish economy, which at present are: biotechnology, chemicals, drink, education services, energy, financial services, food, forest products, information industries and multimedia, textiles, tourism and value-added engineering. In addition, close strategic coordination takes place with the LECs, non-governmental organisations such as the Higher Education Institutes as well as the major companies in the Scottish economy.

As a result, Lis operates within a wider development strategy developed by SE to coordinate the activities of different public sector agencies in Scotland. In recent years, the strategy has emphasised the importance of sectoral clusters as the source of regional competitiveness. Based on the work pioneered by Michael Porter, the strategy recognises the value of supporting the growth of clusters, which are innovative concentrations of firms, suppliers, technologies and skills in particular sectors. Developing such clusters requires an understanding of the region's 'gaps' in the existing concentrations - whether parts of the production value chain or certain sets of skills and technologies - and action to fill those gaps so that the concentrations can reach a critical mass and produce self-sustaining growth. In particular, the strategy demands the close coordination of Lis operations with other business development activities in SE.

Such links have been critical in assisting Lis with two important areas of its own strategy-making: identifying gaps in the inward investment chain and potential future problems in the economy that may hinder Scotland's locational attractiveness. Both issues need to be addressed if Scotland is to maintain its ability to attract FDI in particular sectors. In order to support the emergence of clusters in the Scottish economy, it is important to find out what parts of the sectoral value chain may be missing and encourage investments within that sub-sector. At the same time, it is crucial to ensure that the Scottish economy can continue to provide the necessary resources for future investment, especially with respect to suitable industrial properties and the supply of skilled workers.

To illustrate how Scottish inward investment policy handles these issues in practice, it is worthwhile looking at the electronics sector. Within SE, there are several groups which provide information, analysis and support to Lis promotion of electronics investment. Perhaps the two most important are:

- the *Manufacturing Services Group*, which is responsible for encouraging greater links between the Scottish supplier base and the (usually foreign-owned) original equipment manufacturers; and
- the *Scottish Electronics Forum*, in which representatives of the major electronics companies in Scotland meet to discuss key issues facing the sector as a whole.

Assistance to Lis by these organisations can be provided in a number of ways. First, they can be instrumental in identifying and filling gaps in the region's sectoral profile. For example, the Manufacturing Services Group (MSG) undertook an analysis of the electronics sector which determined that Scotland did not have a local capability for supplying plastics components to large electronics companies. In a survey of all companies in the sector, the group was able to find out which companies and from which parts of the world, such components were obtained. This information helped Lis to target its promotional activities on particular sub-sectors and companies, and ultimately to attract inward investors that could provide local plastics supplies, thereby strengthening the electronics cluster in Scotland. The MSG also undertake annual surveys of the purchasing requirements of the largest original equipment manufacturers in Scotland in order to identify wider gaps in the supply chain which could be filled through inward investment. In other areas, existing investors themselves have given Lis assistance by identifying their key foreign suppliers and providing support to the agency in encouraging those suppliers to consider locating in Scotland. Company support has often been coordinated through the Scottish Electronics Forum.

Second, inward investment promotion has been supported by wider efforts to ensure that the region's locational attractiveness is not undermined by local resource shortages. This is particularly important in the area of skills, where there is continuing concern that increasing investment into Scotland could lead to excessive demand for particular skilled workers, leading to the danger of 'poaching' of these workers from existing businesses and a longer-term decline in the region's competitiveness. Lis works closely with different units of SE, the LECs and Higher Education Institutes to ensure that there is a continuing supply of such workers. This tends to take the form of establishing specific courses and programmes at colleges and universities to provide training in key skills, often with the close co-operation of beneficiary companies. For example, a recent decision by a software design company to invest in Scotland raised the prospect of future skills shortages as the company required approximately 1,700 design engineers. To fill this demand, a consortium made up of four Scottish universities, The Scottish Office and the investor are funding a specific course programme to provide trained graduates. Similarly, SE also set up a website advertising jobs with the specific (and to date, successful) remit of attracting applications from expatriate Scottish engineers.

Figure 3.2: Locate in Scotland functions		
<i>Function</i>	<i>Activity</i>	<i>Participation of other organisations</i>
Promotional	<ul style="list-style-type: none"> • general marketing • sectoral marketing • company marketing 	International network of Lis offices Government ministers
Financial support	<ul style="list-style-type: none"> • Assembling incentive packages 	The Scottish Office Industry Department
Aftercare	<ul style="list-style-type: none"> • Monitoring foreign investor needs • Encouraging and facilitating expansion investments 	Local Enterprise Companies
Strategic development	<ul style="list-style-type: none"> • Encouraging clusters • Targeting gaps in the sectoral value chain • Identifying factor deficiencies in the Scottish economy 	Scottish Enterprise sector groups Local Enterprise Companies Higher Education Institutes

An example of how this works in practice has been the recent campaign to promote more design-intensive forms of inward investment. In this respect, Lis is making a concerted effort to attract higher value forms of inward investment, both manufacturing investment and design related manufacturing investment. In December 1997, Lis announced plans for a major collaborative project between public sector organisations, the company, Cadence Design Systems (CDS) and the academic community in Scotland. One of the world's leading suppliers of semiconductor design technology and services, CDS is to establish a facility in Livingston to undertake design work on their next generation 'system on a chip' semiconductor devices. The project envisages the eventual creation of up to 1,900 highly skilled design jobs with CDS. It will eventually be the largest design centre in CDS's world-wide network.

As part of the CDS operation, Scottish Enterprise is establishing a design complex in Livingston specifically to attract other such companies working in the field of systems level integration (SLI). It is hoped that other firms will join CDS to locate in Livingston. The complex will be assisted by advanced networking infrastructure which is being provided by IBM. In addition to the new design complex, other related initiatives are now underway. For example, in co-operation with four of Scotland's leading universities, Scottish Enterprise is creating the world's first Systems-Level Integration (SLI) Institute in Livingston to carry out leading edge research on SLI. In partnership with SLI companies and leading experts from around the world, the universities are offering a joint degree in SLI. The Institute will also act as a think-tank for SLI research.

In order to attract CDS, Lis and other bodies in Scotland worked together intensively for five months during the summer of 1997 on the initiative called Project Alba. The significance attached to project Alba owes to the fact that this type of design-related

inward investment is qualitatively different from the bulk of Scotland's assembly-oriented foreign-owned companies. Furthermore, some existing foreign-owned companies use CDS for their products, which further strengthens linkages within Scotland's electronics cluster. According to Scottish Enterprise and others involved in Scottish economic development, the Cadence project redefines Scotland's position in the world of electronics. The Secretary of State for Scotland, Donald Dewar, claimed that the project 'marks a sea-change in the nature of inward investment in Scotland. The creation of such a large number of research, development and design jobs is unprecedented'.

3.2 Local Enterprise Companies

The Scottish Enterprise Network incorporates Scottish Enterprise National, Highlands and Islands Enterprise and 23 Local Enterprise Companies (LECs). LECs act as an intermediate tier of economic development agencies involved in inward investment attraction. Together they form a cohesive group of organisations, working together to a common purpose that is clearly defined in the 1994 Network Strategy. The LECs develop and implement strategy at the local level, delivering a wide range of business development and training services, along with environmental and regeneration programmes. Their activities reflect local economic priorities and their directors have extensive local knowledge and business expertise.

LECs play a small role in promoting inward investment and a major role with respect to inward investment aftercare. With respect to the former role, these local agencies are frequently brought into negotiations with a foreign investor at a later stage, so that the financial package on offer can be supplemented by financial support for training. More importantly, training and employment assistance is regarded as the most important aftercare support measure undertaken by LECs. Such assistance is becoming more valuable in the view of some policy-makers as the costs of creating a highly-skilled workforce for new investments have increased for many companies. Owing to the high rate of 'turnover' in some local labour markets greater effort is now being directed towards more work-based training initiatives by LECs. The number of direct links between LECs and inward investors varies with some more proactive than others. For example, the Lanarkshire Development Agency - which is home to several major inward investors such as Chung Wha and Lite-On - works very closely with personnel managers from local inward investors in order to predict future skill requirements within the local economy. LECs do little in the way of direct training themselves however, since training is mostly undertaken by private training providers and Further Education colleges.

3.3 Local Authorities

The final tier of economic development organisations in Scotland are local authorities (LAs). In total, there are 32 councils in Scotland, all of whom have powers for economic development, land use planning and tourism. LAs have very large budgets in comparison with the other actors outlined above. An estimated £1.8 billion is spent every year by LAs in Scotland on economic development projects: this sum is four times greater than the entire budget allocated to Scottish Enterprise and the LEC

network. Much of this expenditure is channelled into expensive infrastructure projects, often in conjunction with other funding bodies such as LECs, EU Structural Funds and the private sector.

LAs in Scotland have only a limited direct role when dealing with inward investment. The main way in which LAs are involved in FDI promotion is by providing the necessary supply-side environment to allow physical infrastructure development. LAs do not want to replicate the work which is done by other economic development actors in Scotland such as Scottish Enterprise. The types of support that are commonly utilised in Scotland by LAs are planning and property development.

Although not strictly speaking a form of direct financial support, the provision of subsidised *property* and the preparation of potential sites is the most important activity undertaken by LAs in relation to FDI promotion. As with other local sources of support, property offers are normally made by LAs in collaboration with the (national) agencies overseeing FDI negotiations. However, it is LAs which have the statutory power to offer planning consent for industrial and commercial development. Quick planning approval of proposed is crucial for inward investment projects who often have to start production very soon after deciding on a location. For example, South Lanarkshire Council established a multi-disciplinary team composed of people from land-use planning and economic development functions specifically to speed up planning offers to inward investors.

Finally, some LAs play a minor role in developing local suppliers for foreign-owned firms (e.g. Dundee City Council). Part of this involves raising awareness and helping companies apply for national regional policy instruments such as Regional Selective Assistance. However, most LAs see this type of activity as being the remit for national bodies such as Scottish Enterprise.

4. FDI AND SCOTLAND'S OBJECTIVE 2 PROGRAMMES

An important element of economic development policy in both Scotland and NRW is the expenditure under the Structural Funds. There are two Objective 2 regions in Scotland (Western Scotland and East of Scotland), both of which are in the Central Belt where the bulk of foreign investment is situated. Both programmes are managed by independent partnerships, Strathclyde European Partnership and Eastern Scotland European Partnership respectively. This section begins with a brief overview of the economy in Western Scotland and then examines Strathclyde European Partnership and the ways in which the Objective 2 programme in Western Scotland treats the issue of inward investment. This section also highlights projects which have developed in the programme and have directly benefited the electronics sector. It concludes with an examination of the links between the Objective 2 programme and the activities of other economic development agencies in Scotland.

4.1 Western Scotland's Economic Background

The population of Western Scotland in 1994 was 2.3 million, representing approximately 45 percent of the Scottish total. The population of the region has been declining by an average of 0.6 percent per year since 1971. At the same time, Western Scotland has experienced a significant and continuing decline in employment. Over the period 1984-1995, a decline of 2.6 percent in employment in Western Scotland contrasted with the 2.3 percent increase in Scotland and the 0.2 percent increase in Great Britain as a whole. In July 1996, unemployment in the region stood at 9.5 percent of the workforce, compared with the overall Scottish unemployment rate of 8.3 percent and the UK rate of 8.2 percent.

Western Scotland has suffered from this significant and continuing decline in employment partly as a consequence of widespread industrial restructuring. Most of the region's traditional industries - such as mining, steel production and shipbuilding - have disappeared. This has led to a substantial fall in employment in the manufacturing sector since 1975 which has resulted in a very high dependence on the service sector in the 1990s. Between 1975 and 1994, manufacturing employment fell by 209,700. Within manufacturing, there has been a shift from heavy industry and manufacturing towards flexible, higher technology-based employment. As with the new foreign direct investment, newer industries prefer greenfield locations outside the major population centre of Glasgow. As a result, unemployment in the region's urban areas has not been eased, affecting, in particular, the inhabitants of inner urban areas and peripheral housing estates.

The area covered by the Western Scotland Objective 2 programme receives high levels of inward investment, especially in the electronics sector. World-class electronics companies such as IBM, National Semiconductor, Compaq and Digital Equipment all have a strong manufacturing presence in the region. In fact, the main growth sectors throughout the region in the 1980s and 1990s have been in services and technology-based manufacturing such as electronics. After the retail sector, the electronics sector has been the second most important contributor to new jobs within Western Scotland.

4.2 Strategic Focus of Western Scotland's Objective 2 Programmes 1988-96

Western Scotland has qualified as an Objective 2 region for support from the Structural Funds since 1988. The Strathclyde Integrated Development Operation was originally approved in 1988 for a period of five years. In common with many Objective 2 regions, many of the projects and the bulk of the money within the early programming period involved development of physical infrastructure such as water supplies, roads and power generation.

The 1994-96 programming period maintained a strong focus on physical infrastructure projects. Indeed, the largest single priority during this programming period was dedicated to improving the business infrastructure, especially motorway slip roads, water supply connections, sewage development, and site development and preparation. Owing to the severe nature of the economic problems in these areas, coupled with the European Commission's desire for spatial targeting of resources,

much of this physical development was directed towards Lanarkshire and Inverclyde. These areas are located to the south and west of Glasgow and both are Enterprise Zone areas entitling them to various fiscal and planning incentives (Brown *et al*, 1997). Large sums of money were directed towards physical site development in both these Enterprise Zone areas, including factory building. This was seen as an essential prerequisite to enable industrial development on these sites, including the attraction of inward investment.

Indeed, these areas have subsequently received high levels of inward investment. For example, substantial investments by Chung-Wha and Lite-On are sited in the Lanarkshire Enterprise Zone. While Lanarkshire has been able to attract a number of large-scale manufacturing inward investors, especially in the electronics industry, Inverclyde has been the recipient of several service sector inward investors, one of the key types of projects being call-centre facilities. Although it is difficult to attribute a causal link between this Structural Fund intervention and inward investment, without the necessary infrastructure in place these investments would probably have gone elsewhere in Scotland, if not further afield.

There has been a significant shift in strategy of Western Scotland's Objective 2 programme during the various programming periods. In contrast with early periods, the 1997-99 programming period is more focused on developing SMEs through 'softer' forms of business development support. In fact, this is the single largest priority funded under the Objective 2 programme (Table 4.1). The overriding objective for the 1997-99 Single Programming Document (SPD) is to "enhance the competitiveness of the regional business sector by promoting the indigenous potential and increasing investments in SMEs".

In addition to this strong focus on developing local SMEs, the training measures supported under the ESF are now targeted towards vocational skills in specific labour market areas. In financial terms, the next largest priority is Strategic Spatial Development which mostly funds physical infrastructure projects. This is followed by Tourism and Cultural Industries, Community Economic Development and Applied Research, Technical Development and Innovation.

Although the current strategy document places greatest emphasis upon the indigenous SME sector, it does make explicit reference to the role played by inward investment in the region's economy and acknowledges the importance of the electronics industry as a source of new employment creation. In fact, the SPD claims that electronics growth is disguising a general decline in manufacturing in the region. The SPD indicates that much of the remaining manufacturing is low value-added with many parts designed externally or imported, creating predominantly low and semi-skilled employment. The strategy document also points out that the region has failed to attract or develop the higher-level functions of inward investors and therefore the potential for local supplier chain 'spin-offs' has been reduced. There is also a lack of first-tier local suppliers, and the Scottish economic structure lacks innovative medium-sized companies with good growth potential.

Table 4.1: Western Scotland Objective 2 programme 1997-99: Indicative financial allocation by priority for action

MILLION ECU		<i>Expenditure</i>								
		<i>Total Cost</i>	<i>Community Grants</i>			<i>Other Public Funds</i>			<i>Private Funds</i>	<i>Loans EIB/ECSC</i>
			Total	ERDF	Funds	Total	State	Other		
Priority 1: SMEs and Local Services	Total	310.030	120.140	76.744	43.396	145.479	145.479		44.411	
	ERDF	206.766	76.744	76.744		92.439	92.439		37.583	
	ESF	103.264	43.396		43.396	53.040	53.040		6.828	
Priority 2: Applied Research, Technical Development & Innovation	Total	71.771	31.193	25.991	5.202	35.434	35.434		5.144	
	ERDF	59.911	25.991	25.991		29.076	29.076		4.844	
	ESF	11.860	5.202		5.202	6.358	6.358		0.300	
Priority 3: Strategic Spatial Development	Total	164.832	75.483	73.816	1.667	79.876	79.876		9.473	
	ERDF	161.128	73.816	73.816		77.839	77.839		9.473	
	ESF	3.704	1.667		1.667	2.037	2.037			
Priority 4: Tourism & Cultural Industries	Total	117.180	49.283	45.545	3.738	59.555	59.555		8.342	
	ERDF	108.304	45.545	45.545		54.987	54.987		7.773	
	ESF	8.876	3.738		3.738	4.568	4.568		0.570	
Priority 5: Community Economic Development	Total	134.739	55.339	39.157	16.182	73.955	73.955		5.445	
	ERDF	96.779	39.157	39.157		54.177	54.177		3.445	
	ESF	37.960	16.182		16.182	19.778	19.778		2.000	
Priority 6: Technical Assistance	Total	6.282	3.066	2.390	0.676	3.216	3.216			
	ERDF	4.780	2.390	2.390		2.390	2.390			
	ESF	1.502	0.676		0.676	0.826	0.826			
	Total	804.834	334.504	263.643	70.861	397.515	397.515		72.815	p.m.
	ERDF	637.668	263.643	263.643		310.908	310.908		63.117	
	ESF	167.166	70.861		70.861	86.607	86.607		9.698	

Source: Strathclyde European Partnership

4.3 Inward Investment and the Western Scotland 1997-99 Programme

The 1997-99 programme has five overriding priorities, and within these five areas the programme contains 16 separate measures:

- *Priority 1: SMEs and Local Services*

Measure 1.1: Access to capital for SMEs

Measure 1.2: Infrastructure & Services for SMEs

Measure 1.3: Business and Development for SMEs

Measure 1.4: Skills Development for SMEs

Measure 1.5: New & Emerging Workforce

- *Priority 2: Applied Research, Technical Development and Innovation*

Measure 2.1: Infrastructure for Applied Research and Technological Development and Innovation (ARTDI)

Measure 2.2: Business Support for ARTDI

Measure 2.3: Skills Development for ARTDI

- *Priority 3: Strategic Spatial Development*

Measure 3.1: Strategic Employment Opportunities

Measure 3.2: Strategic Area Regeneration

Measure 3.3: Employment & Recruitment Incentives

- *Priority 4: Tourism and Cultural Industries*

Measure 4.1: Tourism and Cultural Facilities

Measure 4.2: Marketing Development the Tourism and Cultural Industries

Measure 4.3: Human Resource Development for Tourism and Culture

- *Priority 5: Community Economic Development(CED)*

Measure 5.1: CED Regeneration Initiatives

Measure 5.2: Human Resource Development for CED Areas

The current 1997-99 document does not contain any specific measures which are geared solely towards inward investment attraction or development. Neither are there

any sectoral initiatives which are specifically designed to target the electronics sector. As in the 1994-96 programming period, the main focus for the assistance is the SME sector. However, there are a number of areas in which the programme plays a role in developing Western Scotland's inward investment potential. The one *direct* element in which the programme seeks to boost the region's attractiveness to inward investment is through physical infrastructure development. In addition, there are several *indirect* methods in which the programme may assist inward investors through aftercare initiatives such as training, supplier development and technological development.

4.3.1 Direct Support

One of the most direct methods in which the programme seeks to aid inward investment in Western Scotland is in the area of infrastructure and site development. In fact, the programme has a priority dedicated to 'Strategic Spatial Development'. This priority was developed in conjunction with local authorities, LECs and Locate in Scotland, but initially caused some problems with the Commission. The Commission wanted a narrower range of sites to be used for Structural Fund support. On the other hand, SEP felt that this would commit the programme too much to developing specific industrial zones. Instead, SEP wanted to have the freedom to support development in areas with most growth potential for industrial use.

The main objective of the 'Strategic Spatial Development' priority is to tackle the problem of dereliction across Western Scotland by developing a limited amount of strategic locations for the relocation and expansion of companies from within and outwith the region to maximise job creation. The emphasis of the priority is on restructuring brownfield land with evidence of economic development potential. In contrast with the earlier focus on Lanarkshire and Inverclyde, most of the sites of dereliction are located within the urban areas of Glasgow, Motherwell, Monklands and Renfrewshire. Studies have highlighted the need to re-develop these areas as potential industrial locations to enhance the probability of attracting investment. This was reiterated in a report by Scottish Enterprise (1996b), which established the role of locational competitiveness in business success. Dereliction presents a negative image to investors and deters inward investment.

Within the Strategic Spatial Development priority there are three measures. The most important in terms of inward investment is Measure 3.1 'Strategic Employment Opportunities'. The main objective of this measure is to develop a limited number of strategic employment locations that will be capable of meeting the needs of businesses seeking to expand or relocate in the region. Eligible projects under this measure include:

- the creation of new and/or upgrading of existing strategic locations;
- site investigations and the reclamation or decontamination of land;
- construction or improvement of direct access to sites;
- integrated marketing for individual and/or groups of locations; and

- support and advice to SMEs locating in the area, to set up local supply chains and networks linked to strategic locations.

One of the main initiatives which has received funding under this priority is the Glasgow Development Agency's Strategic Sites Initiative, discussed in more detail in the Interim Report for this study (Brown *et al*, 1997). This project is primarily designed to create more suitable and attractive locations in which inward investors can set up manufacturing and service operations in Glasgow, an area of Scotland which has traditionally been unable to attract much (especially manufacturing) inward investment. Other projects supported include the development of new sites within the Lanarkshire Enterprise Zone, Greenock waterfront and the new towns of Cumbernauld, East Kilbride, and Irvine.

Initiatives funded under this priority are usually expensive large-scale projects which focus on improving the physical infrastructure for business development. The programme has funded numerous business parks with water supplies, sewage, slip roads, plot development and factory building. One such example is funding given to the Hamilton International Technology Park (HITP), a new business park designed to attract incoming companies into the Hamilton area. During the first phase of funding for this project, the programme aided the HITP with £3.25 million which was used for site preparation. Following the preparation of the site, a further three projects were then used to bring the site up to a high standard that would make it attractive for incoming companies. The park has already attracted a number of foreign-owned companies. For example, during August 1997 the US electronics firm Altatron Inc announced it was establishing a manufacturing facility at the park which will create 300 new jobs in the next three years. The company design and manufacture printed circuit boards for the networking industry.

4.3.2 Indirect Support

There are three ways in which the programme may indirectly assist the region's efforts to attract FDI. These are: business development, training measures and RTD measures. First, business development initiatives designed to develop local suppliers may have an indirect impact on inward investors in Scotland. Important in this respect is Measure 1.3 'Business Development for SMEs'. Although this is a general SME business development measure, it is also specifically targeted towards SMEs within local supply chains. Under this measure, ERDF will be available for projects which support "intra-regional and international networks involving SMEs which encourage supply chain development, local sourcing and/or the formation of industrial clusters". The types of projects funded under this measure are the provision of high quality business development support such as consultancy support and advisory services for new and existing SMEs. While aware of the importance of these initiatives, according to the programme's management, to date, no projects have been forthcoming which are exclusively directed towards supplier development in Western Scotland.

Second, training measures within Western Scotland's Objective 2 programme are another area which benefits foreign investors. In particular, the programme claims that training and related activities will target emerging and growth sectors where skill shortages and employment opportunities can be identified. This type of activity is

funded under Measure 1.5 'New and Emerging Workforce' which is very wide in scope and includes "training and related activities for job opportunities arising from inward investment". The funding for these programmes would go to the LECs who would then subcontract the funding to local further education colleges or private training providers. This is an important measure for inward investors who often face recruitment difficulties when commencing a large new project. Electronics companies face the additional problem of severe skill shortages in certain skilled areas.

One of the key initiatives funded under the programme is the Strathclyde Labour Market Information Service (SLIMS) which collects information about local labour markets within the Western Scotland Objective 2 region. The programme funds training and related activities necessary to meet existing and potential skill shortages and job opportunities in key growth areas identified through SLIMS. Another of SLIMS activities is to address the skills shortages which are created by large inward investors moving into areas with limited skills availability.

Owing to the programme's overall focus on SMEs, training support is mostly directed towards SMEs. Training initiatives for SMEs enable supply chains to be developed within the local economy which indirectly benefit the competitive environment in which foreign investors operate. In this respect, the ESF-funded Measure 1.4 'Skill Development for SMEs' could be used to support suppliers in the electronics industry. The main objective of this measure is to ensure that managers and employers of SMEs have the management and new technology skills needed to improve performance, growth, competitiveness, workforce flexibility and diversification. However the scope of this measure extends beyond supplier development issues. In addition, Measure 1.2 'Infrastructure and Services for SMEs' may also be used to fund new or upgrade existing vocational training premises to meet labour market demands and the needs of SMEs.

One example of a project funded under this measure is the Ayrshire Electronics Training Centre (Edutronic) which received £179,200 of ERDF support from the Objective 2 programme. The centre is the first college-based unit in Europe with a fully equipped surface mount technology (SMT) production line. Edutronic is a joint venture between Ayr College and Ayrshire Enterprise which aims to train people seeking new career opportunities in the electronics industry and to provide training courses tailored to the needs of individual employers. The centre has the capacity to train 300 people a year. The Japanese multinational, Panasonic, donated state-of-the-art SMT equipment to the centre.

The third aspect of the programme which benefits inward investors or suppliers is in the area of Research and Technological Development (RTD) which is strongly represented among measures in Western Scotland's programme. In 1993, two percent of the programme budget was allocated to RTD measures; the 1994-96 programme increased the proportion of the programme budget committed to RTD projects to 6.5 percent. RTD support under the current programme (i.e. 1997-99) will be strongly guided by the Regional Innovation Strategy (RIS) which is currently being developed in tandem with the Objective 2 programme. The RIS will be developed over an 18-24 month period from January 1997 to December 1998. It will provide a strategic policy

framework for investment under the current programme to improve the innovative capacity and competitiveness of the regional economy.

At present, there are three measures within Priority 2 ‘Applied Research, Technological Development and Innovation’.

- Measure 2.1 ‘Infrastructure for Applied Research, Technological Development and Innovation’ is able to fund a variety of projects, including applied research centres based around key technologies or innovative clusters of SMEs.
- Measure 2.2 ‘Business Support for Applied Research, Technological Development and Innovation’ aims to develop high-technology spin-out companies from medium and large companies in the region. Owing to the lack of spin-off companies which have developed in Scotland, particularly associated with foreign investors, this is a very important objective.
- Measure 2.3 ‘Skills Development for Applied Research, Technological Development and Innovation’ intends to support training which aims at developing an appropriately skilled workforce to take advantage of technological developments and innovation.

Again, it is very difficult to establish the extent to which these measures will directly or indirectly benefit inward investors. However, programme managers admit that few inward investors, and even fewer suppliers, have good links with higher education institutions in Western Scotland. In fact, this has been identified as one of the weaknesses within Scotland as a whole (Scottish Enterprise, 1996a).

On the whole, Strathclyde European Partnership (SEP) is weakly integrated into Scotland’s institutional framework for inward investment promotion. Few formal or informal links exist between the Western Scotland Objective 2 programme and Scotland’s main inward investment bodies. Given the nature of their work in relation to inward investment, this is not surprising.

However, SEP does have substantial links with local economic development actors in Scotland and there is some evidence of links between the programme and local actors in charge of inward investment aftercare in Scotland. At the local level, SEP interacts with local authorities and LECs on numerous projects. The main way in which the programme impacts inward investors at present is through local training initiatives for inward investors such as the training initiative Edutronic. Given that the main focus of the programme is on SMEs, future projects are likely to be targeted towards this sector of the economy mostly in conjunction with local economic development actors such as local authorities and LECs.

5. INWARD INVESTMENT IN NORDRHEIN-WESTFALEN

As a comparison of the experiences of foreign investment policy in Scotland, this section examines inward investment promotion in Nordrhein-Westfalen (NRW) and

its relationship with economic development policy-making. The section begins with an overview of the regional economy, followed by a brief description of the Objective 2 programme in NRW. Following this, the section focuses on inward investment within the region, beginning with a brief overview of the nature of inward investment in the region and a description of the main institutions involved in foreign investment promotion. The final part examines the coordination and effectiveness of these promotional bodies.

5.1 Nordrhein-Westfalen Economic Background

As the largest *Land* with a population of almost 18 million (22 percent of Germany's total inhabitants) and a land area of 34,000 square kilometres, Nordrhein-Westfalen has long been the industrial centre in Germany. Almost half of the state's residents live in 30 large cities with populations of more than 100,000 inhabitants. The region produces almost a quarter of Germany's industrial output and gross domestic product (GDP), making NRW the most powerful regional economies in the country. In fact, the size of the economy is such that, measured on its own, NRW is the tenth largest economy in the world. The region also has a strong and vibrant educational system, with some 500,000 students studying at the region's 53 universities and technical colleges. NRW's RTD infrastructure includes some 60 technology centres and 21 research institutes.

NRW also has an excellent geographical position: more than 40 percent of EU inhabitants live within a 500 km radius of the *Land* capital, Düsseldorf. Transport infrastructure is also well-developed, as the region has two major airports: Düsseldorf is the second largest passenger airport in Germany, while the Bonn/Köln airport is the country's second largest air freight handling airport. In addition, Duisburg is Europe's largest river port, and together the NRW river ports handle around 100 million tonnes of goods per year.

Within the region, the Ruhr area is historically associated with heavy industry, particularly coal and steel. With the decline of these industries as well as more recent rationalisation of other sectors such as automotives and chemicals, the area has experienced a long and difficult restructuring process. The unemployment rate in the Ruhr is consistently above the *Land* and national average. A great part of the economic development strategy of the *Land* government until now has been concentrated on restructuring the economy, promoting RTD and innovation in firms, and encouraging SMEs and new firms. The focus of policy has traditionally been on supporting endogenous potential rather than on attracting investment from abroad.

As a result of this restructuring process, only 10 percent of the workforce is still engaged in the mining sector, compared with 45 percent in 1960. Now, around two-thirds of employment is in SMEs. The large coal and steel firms have diversified into modern activities such as telecommunications and green energy technologies. Growth in new industries such as environmental and electronic technology, the services and media has created some 600,00 new jobs.

A recent study showed that of the 160 largest firms in Germany in the 16 most important sectors, 56 were based in Nordrhein-Westfalen. These include Thyssen, Mannesmann and Krupp-Hoesch in machine construction; Ford in automotives; RWE

and Ruhrkohle in energy; Bayer, Henkel and Hüls in chemicals; and Deutsche Telecom, Deutsche Post and Bertelsmann in media and telecommunications sector.²

In summary, NRW sees its strengths as an industrial location as its:

- highly-technological and growth-oriented economic structure with good labour productivity;
- strong SME base;
- vibrant technology and research culture with a high level of innovation;
- competent supplier industry;
- status as a centre for innovative environmental technologies;
- media and cultural environment; and
- excellent university base (with six of the ten largest German universities) and large reservoir of specialist and management expertise.

5.2 The Objective 2 Programme in Nordrhein-Westfalen

NRW has the largest Objective 2 programme in Germany, accounting for 40 percent of the overall German financial allocation. The Objective 2 area covers around 20 percent of the population of NRW (3.6 million) in a heavily-populated conurbation of several cities, including Duisburg, Dortmund, Gelsenkirchen, Bochum and Essen. Altogether, the Objective 2 areas form the entire coal and steel area of the *Land*. The current programme is built on five priorities: support for enterprise, especially SMEs; support for technology and innovation; economic infrastructure; conversion of old industrial sites; and promotion of human resources. Sectorally, the Objective 2 programme targets the growth potential of the media and telecommunications industries, as well as environmentally-friendly energy technologies. It is also trying to build up the services sector, with its potential for job creation.

Sectoral Initiatives

A number of sectoral initiatives operating at *Land* level are included in the Objective 2 programme. For example, the *Land* government is currently running a media initiative (media NRW), involving the cooperation of the state with media enterprises, research institutes, and other relevant institutions. The aim of the programme is to encourage the development, production, application and dispersion of multi-media products in NRW. The *Land* government sees media as a key future industry; NRW is already a leading location in Germany for telecommunications, as well as television and film production companies. In Media NRW, a number of task forces operate in specific areas, such as teleworking, “electronic cities”, multi-media research and on-line services. The Objective 2 programme aims to utilise the media initiative to build up the sector within the former steel and coal areas, with an employment growth target of two percent per annum.

² *Wirtschaftswoche*, March 1998

Another initiative of interest is ChemSite, which aims to promote the Emscher-Lippe region as a chemical location. ChemSite started in 1997 as a joint project involving a group of chemical firms, the *Land* government, the local economic development agency (*Emscher-Lippe Agentur*) and the local authorities. With 6.9 percent of local employment, the chemical industry is the second largest employer in the Emscher-Lippe region, after mining. The Marl Works, owned by Hüls AG, is the third largest chemical works in Germany. In common with other chemical firms, Hüls has cut its workforce dramatically in recent years, from around 25,000 jobs in 1990 to 6,240 in 1996.

As well as providing intensive help and expertise to new chemical firm start-ups, the ChemSite initiative aims to attract new chemical firms, including foreign firms, to locate on abandoned land within the sites of local chemical firms. Land which had been abandoned following restructuring is being cleaned up and made available for new investment. The advantage to the local firms is a reduction in fixed infrastructure costs (waste disposal, roads, fire safety provision, etc) by sharing site facilities with the new firms. The existing firms also open up their training facilities to incoming firms. For the new firms, the inclusion of these services as part of the investment package saves costs which would have been incurred if investing on a greenfield site. The initiative is marketed on the Internet and in specialist journals. English language publicity material and targeted marketing activities in the USA are forthcoming.

The *Land* government operates a number of other innovation and technology initiatives, built on the model of cooperation between business, research institutions and the state. These include *Teletech* (for telecommunications technologies), *Biogentech* (for the bio-technology industry), and *Zukunftsenergien* (Future Energies). There are also highly-specialised initiatives, for example, in plasma technology. Further programmes are planned for transport and construction technologies.

International Building Exhibition

The Objective 2 programme has placed a high emphasis on improving the attractiveness of the region as a place to invest and live. A strong initiative in this field, not confined to the Objective 2 area but in operation throughout, is the International Building Exhibition “Emscher Park”. It aims to revitalise the Emscher area, by restoring the landscape, regenerating the river system, and constructing “green”, attractive living and working areas to a high architectural standard.

5.3 Foreign Direct Investment

Given its size and level of industrial activity, it is perhaps unsurprising that of the 16 federal *Länder*, NRW attracted the highest level of inward investment to Germany in 1995. With DM 72.8 billion, it accounted for 26.9 percent of the German total of FDI in 1995 (see Table 5.1). However, investment abroad by NRW firms in the same year amounted to DM 85.6 billion. This reflects the overall trend of a balance toward outward migration of industry from Germany.

Table 5.1: FDI flows into and out of Germany; 1995 (figures in DM billion)*

<i>Land</i>	<i>German investment abroad</i>	<i>FDI into Germany</i>
Baden-Wuerttemberg	50.1	37.0
Bayern	82.0	27.5
Berlin	8.1	10.4
Brandenburg	0.8	0.8
Bremen	1.0	2.1
Hamburg	15.9	30.0
Hessen	64.4	60.4
Mecklenburg-Vorpommern	0.8	0.9
Niedersachsen	24.0	15.2
Nordrhein-Westfalen	85.7	72.8
Rheinland-Pfalz	22.3	5.4
Saarland	2.3	2.0
Sachsen	0.8	0.8
Sachsen-Anhalt	2.0	3.0
Schleswig-Holstein	2.2	4.8
Thüringen	0.7	1.2
Total	361.7	271.0

Source: Deutsche Bundesbank, June 1997.

*Figures do not tally due to rounding

The geographical origin of foreign investors in NRW is strongly dominated by a few important host nations. Around half of all inward investment into NRW comes from within the EU, especially the Netherlands, France and the UK. The other main sources of investment are from the USA, the single largest source of FDI in NRW, and Japan (Table 5.2). In terms of number of companies, smaller European countries are large investors in the region. NRW has over 350 US-owned companies, 550 Japanese-owned companies, 320 Dutch companies and 265 Swedish companies.

Table 5.2: Share of investment into and out of NRW by country, 1995 (figures in DM billion)*

<i>Country</i>	<i>Investment abroad</i>	<i>FDI into Germany</i>
All countries	85.6	72.8
EU	46.1	36.9
<i>of which</i>		
Belgium	8.3	1.4
France	5.9	8.3
Ireland	4.8	0.05
Italy	2.3	0.3
Luxembourg	3.4	12.3
Netherlands	6.3	15.1
Austria	4.2	0.6
Portugal	0.7	-
Sweden	0.5	1.4
Spain	2.3	0.2
UK	6.6	6.6
Non-EU	29.6	33.0
<i>of which:</i>		
Australia	1.1	0.5
Japan	1.5	7.0
Canada	2.2	0.9
Switzerland	3.3	5.9
USA	20.2	18.0
Eastern Europe	1.9	0.4
<i>of which</i>		
Czech Republic	0.5	0.02
Hungary	0.5	0.03

Source: Deutsche Bundesbank, June 1997.

*Figures do not tally due to rounding

Sectorally, foreign investment in NRW is concentrated in real estate and services sectors. The reasons for this relate to the perception that Germany is too costly a manufacturing location (especially with regards to labour costs), but also owe to the fact that NRW has a very strong commercial base with many national and regional banks and other commercial activities. For example, Cologne acts as a centre for television and media industries. The most important manufacturing sectors receiving foreign investment are chemicals, automotives and machine construction industries (Table 5.3).

Table 5.3: Sectoral profile of FDI in Nordrhein-Westfalen, 1995 (figures in DM billion)

<i>Sector</i>	<i>Direct investment</i>
All sectors	85.6
<i>of which:</i>	
Manufacturing	28.1
<i>of which:</i>	
<i>food</i>	0.8
<i>paper</i>	0.5
<i>chemicals</i>	14.4
<i>plastics and artificial materials</i>	0.8
<i>glass, ceramics, etc</i>	0.4
<i>metal manufacture</i>	1.7
<i>metalworking</i>	1.8
<i>machine construction</i>	2.9
<i>electronics</i>	0.9
<i>medicine, etc</i>	0.1
<i>automotive</i>	2.3
Commerce	12.9
Transport and telecommunications	1.2
Banking and insurance	14.4
Real estate	25.0

Source: Deutsche Bundesbank June 1997

This sectoral distribution reflects the existing sectoral strengths of the region (see Table 5.4). The chemicals industry has the highest turnover of NRW sectors and is also the region's largest exporter. Foreign-owned chemical companies located in NRW include 3M, Amoco and Johnson & Johnson. Around 108,000 employees in around 500 firms are engaged in the automotive sector. As well as vehicle assembly and component supply, there are training and research firms relating to the sector. Ford is one of the most important foreign-owned firms within the automotive sector. Machine construction is the largest employing sector in NRW, with around 250,000 workers and an annual turnover of over DM 63 billion. The NRW electronics industry has a turnover of around DM 40 billion and employs around 150,000 people.

Table 5.4: Industry sectors in NRW, by turnover and employment

<i>Sector</i>	<i>Turnover 1997 (DM billion)</i>	<i>Employment 1997</i>
Chemicals	78.4	151,413
Mechanical engineering	66.2	237,602
Metals	51.0	131,972
Food and drink	47.0	102,873
Metal products	45.7	187,826
Vehicles	43.4	104,008
Electrical engineering	43.3	153,464
Paper, publishing and printing	28.7	92,629
Coal and minerals	27.8	4,513
Plastics products	20.4	71,413
Textiles and clothing	17.4	58,495
Furniture	15.4	55,593
Glass, ceramic, stone	14.9	46,112
Mining	10.1	83,027

Source: GfW

5.4 Economic Development Institutions

There are a number of economic development bodies involved in FDI promotion and aftercare in NRW. Regional incentives are administered and controlled by the Ministry for Economics, SMEs, Technology and Transport. The division of responsibility for FDI promotion is split between state level economic development bodies and regional/local development agencies. These agencies are outlined below.

Ministry for Economics, SMEs, Technology and Transport

The Ministry for Economics, SMEs, Technology and Transport (*Ministerium für Wirtschaft, Mittelstand, Technologie und Verkehr - MWMTV*) has responsibility for the economic policy of NRW, insofar as it is not dealt with by the federal government. It runs all of the *Land* and EU Structural Fund programmes for economic development, and administers the main regional policy instrument. The main investment support available to firms investing in NRW is the Investment Grant of the Joint Task for the Improvement of Regional Economic Structures (*Gemeinschaftsaufgabe - GA*). This is available in designated areas: the Aachen region, the Ruhr area, and some eastern parts of NRW. The level of award is directly related to the number of jobs created by the investment. The maximum investment amount that qualifies for support is DM 200,000 per male job and DM 250,000 per female job. The maximum rate of award for larger firms is normally 15 percent of eligible expenditure, though where more than half the jobs created are for female workers, the maximum award rate can be raised to 18 percent.

Economic Development Agency (GfW)

Promoting foreign direct investment in the region is undertaken by the Economic Development Corporation for Nordrhein-Westfalen (*Gesellschaft für Wirtschaftsförderung Nordrhein-Westfalen mbH - GfW*), established in 1960 as the main state body responsible for economic development in NRW. Its primary task is to act as an interface between business and state institutions and therefore maintains close contact with all aspects of business and industry, including chambers of commerce, banks, domestic and foreign firms and other business specialists, while cooperating with institutions at local, sub-regional and *Land* level on economic development.

Until the mid-1980s the work of the GfW concentrated on promoting the state as a location for business and industry. By the end of 1980s, the GfW widened its activities to include assisting local companies with internationalisation and exporting. The GfW now provides information, consultancy and management services to NRW firms as well as investors who express an interest in locating in the *Land*. Based in Düsseldorf, the GfW employs 50 people, split evenly between assistance for local companies and efforts to attract incoming firms. GfW also has seven representative overseas branches, in the Far East, South East Asia, the USA, South Africa and the Middle East. The foreign offices maintain contacts with local authorities and firms, preparing information on political and economic development, and acting as negotiator for potential investors interested in locating in NRW.

The GfW's wide-ranging activities include:

- assistance to German and foreign companies in the implementation of investment projects;
- support for NRW companies in the development of important markets abroad;
- communication for Nordrhein-Westfalen as a business location at home and abroad;
- advising public administration and government agencies in Germany and other countries on setting up economic development structures;
- support for the establishment of European and international joint venture networks for small and medium-sized enterprises; and
- information and advice for local and regional economic development agencies.

The GfW aims to attract foreign investors by responding to requests for information from foreign companies, contacting foreign companies through its overseas offices and organising marketing events in overseas markets with the assistance of other regional partners. Another important service offered by GfW to foreign companies is its property database, "Gewerbeflächen in Nordrhein-Westfalen", informing companies about the availability of industrial sites in the region (e.g. size, type, location, prices, traffic connections and existing buildings). The database is free of charge and is continuously updated by local and regional development authorities in NRW.

Local Development Agencies

Each of the local authority areas of NRW has its own Economic Development Agency (*Wirtschaftsförderungsgesellschaft*). These are public-private institutions involving local firms, chambers and local authorities, operating along similar lines to the NRW Economic Development Agency, except on a smaller scale. Examples of these agencies include *Aachener Gesellschaft für Innovation und Technologietransfer* (AGIT) and *Emscher Lippe Agentur* (ELA). Local development agencies are also responsible for aftercare given to existing inward investors. They give advice on sites, cooperation and supplier possibilities, the labour market, infrastructure and investment aid. The most common form of aftercare relates to property issues rather than strategic questions such as plant expansions and supplier linkages.

Land Development Agency (LEG)

The State Development Agency (*Landesentwicklungsgesellschaft - LEG*) is a property company, active in urban development and residential housing as well as the placement of new companies in the region. The LEG is the largest supplier of industrial and commercial sites in NRW. Since 1980, some 2,400 hectares of old industrial land has been bought up, sanitised and converted for new industrial activity. However, only around 40 percent of this land has been re-utilised. Recently, therefore, there has been more emphasis on assessing the real potential of sites and responding to the needs of investors.

Regional Conferences

There is a structured bottom-up approach to regional economic development in NRW, known as “regionalised structural policy”. Standing regional conferences have been established in 15 sub-regions, with the aim of involving local authorities, chambers of commerce and trade, the unions, universities and other local actors in the development of regional strategies. The conferences discuss large-scale projects and development concepts within their region, and submit their proposals to the *Land* government. These proposals tend to be given priority for public funding. The role of the regional conferences as regards FDI should be to identify gaps in the regional supply and production network which could be filled by encouraging inward investment. This task would then be given to the Economic Development Agency (GfW).

5.5 Coordination between Länder and Federal Levels on FDI Issues

There has been much discussion in recent years of the threat to Germany as an industrial location for investment (the so-called *Standort Deutschland* debate). A number of barriers to investment in Germany have been identified, including excessive bureaucratic regulation, including planning and building regulations and formalities; high unit labour costs; and the need for reform of the corporate and personal taxation system. Indeed, some measures have already been undertaken to address some of the issues: for example, sickness, unemployment and benefit systems have been reformed and unit labour costs have started to come down. The most important motive for outward investment by German firms has generally been to gain new markets, but

more recently firms have also been placing more importance on exploiting cost advantages abroad, especially in neighbouring Central and Eastern European countries.

The need for an easily identifiable contact point for potential investors as well as a strong marketing strategy is being increasingly recognised in Germany. This issue was addressed recently in the new *Länder* with the creation of the Industrial Investment Council by the federal and new *Länder* governments, which markets the eastern *Länder* as an industrial location. In February 1998, the Economic Committee of the lower house of parliament (*Bundestag*) recommended the establishment of an "Invest in Germany" agency which would take responsibility for the marketing of the whole country, with the cooperation of federal and *Land* authorities. This has cross-party support, as well as that of the confederation of German trade and industry (DIHT) and chambers of trade. The agency would effectively be an expansion of the existing Centre for Foreign Investment within the Federal Economics Ministry. It would undertake active advertising activities and relay interest shown by potential investors to the relevant *Land* or region. Concrete location negotiations, project offers and specific site advertising and promotional measures would remain the responsibility of the *Länder*.

The Economic Committee, in making this proposal, recognises that the barriers to inward investment need to be addressed, but feels at the same time that Germany's advantages as an industrial location are not being adequately presented, that contacts with potential foreign investors are not being sufficiently coordinated and targeted.

6. CONCLUSIONS AND RECOMMENDATIONS

The aim of this study has been to examine electronics foreign direct investment in Scotland. This final section draws together the discussion with some conclusions and policy recommendations from the study. It begins with a brief overview of the main research findings, followed by a review of the parameters for reform in NRW. The section then focuses on policy recommendations, outlining the types of activities which are needed to develop and promote inward investment in NRW.

6.1 Conclusions

Competition for mobile investment projects in Western Europe has been steadily increasing over the past decade. This can be seen in the growing number of inward investment agencies at both regional and national levels as well as the increasing resources devoted to inward investment promotion. In addition, new competitors - especially in manufacturing assembly industries - are likely to proliferate with the development of national and regional economies in Central and Eastern Europe. As a result, the environment for FDI promotion is more difficult now than when Scotland first began actively attracting investment. Scotland's success is to some extent an example of 'first-come, first-served'. Many companies have been attracted to locations such as Scotland that have already shown a track record for attracting investment. This produces a valuable 'first-mover-advantage' that makes it difficult for new entrants to compete.

As discussed below, despite increasing competition for inward investment, Scotland has managed to maintain high levels of new FDI, especially in the field of electronics. There are various interlocking reasons why companies locate in Scotland. The research conducted for this study shows that the most important UK-wide location factors are access to UK and EU markets, competitive labour costs, the UK's deregulated labour markets and regional financial incentives. In addition, there were two important Scottish location factors cited by inward investors. First, the existence of other electronics firms in Scotland creates a ready-made market for some firms, while also creating the impression that Scotland is a suitable location for electronics production (i.e. agglomeration effects in terms of suppliers, skills availability etc). Second, the role played by Scotland's inward investment agencies and other economic development bodies is important, particularly in relation to firms that want to expand quickly through the acquisition of an existing site and those who have little experience of local issues such as property, utilities and legal affairs, (i.e. companies from Japan and South East Asia).

The important role played by public sector inward investment bodies was outlined above. Although difficult to ascertain a direct causal relationship between the work of these organisations and Scotland's level of electronics inward investment, the company interviews conducted during the study point to the continued importance of public sector support. Other research backs up this view (see Amin *et al*, 1994). The role played by Scotland's main investment promotion body, Lis, is particularly significant. Another important factor within Scotland is the level of institutional coordination within Scotland. Although Lis cooperates and works closely with other local bodies, such as LECs and local authorities, aftercare assistance to investors, Lis is the sole body for overseas promotion within Scotland. This means that Scotland speaks with a single, clear voice when attempting to promote the region as an investment location.

The study also noted the dynamics and nature of foreign investment in Scotland. Owing to the changing qualitative nature of inward investment, promotional activities in Scotland are fluid. Scotland's investment promotion approach was largely developed during a period when the volume and sources of greenfield investment were rapidly growing. More recently, there appears to have been a shift towards expansion rather than greenfield investments, as the stream of non-European companies aiming to set up within Europe has been tailing off. New sources of greenfield investment were anticipated from the Asian Tiger economies such as South Korea, but the recent economic crises of the region have led to widespread retrenchment in Asian companies that had been considering global expansion. Consequently, investment promotion is beginning to focus on measures to secure and deepen the presence of existing investors through aftercare policies as well as attracting new investors. It also places greater emphasis on identifying the host region's location advantages and targeting specific sectors/companies. Other regions hoping to emulate Scotland's success will need to adapt accordingly to these changing investment trends.

Section 4 revealed the role played by the Structural Funds in developing inward investment in Scotland. Analysis of the Western Scotland Objective 2 programme revealed quite a detailed understanding of the issues surrounding foreign investment

attraction. The main role played by the programme in developing inward investment is through support for property development and clearance of sites suitable for inward investment, including plot development and speculative factory building. Although less significant in financial terms, indirect assistance is also given for business development and training for jobs within new foreign investors. Training support funded by the Objective 2 programme appears to be the most important form of soft aid to inward investors once they have located in Western Scotland. Within the programme though, no promotional activities *per se* are supported. Links between the Western Scotland Objective 2 programme and other economic development bodies have also been relatively limited with respect to inward investment.

Finally, Section 5 outlined the structure of the economy, the strategic thrust of the Objective 2 programme, inward investment trends and promotional institutions in NRW. NRW is still undergoing a process of industrial restructuring following the contraction of its older industrial base. Although inward investment levels are high in NRW compared with the rest of Germany, a lot of this investment is focused on the service and real estate sectors which are not always generators of substantial employment for people displaced from the older industries, such as coal mining and steel production. The Objective 2 programme in Nordrhein-Westfalen has little real strategic focus on inward investment, although some projects, such as Chemsite, may aid inward investment promotion in the region. As in Scotland, the most important form of assistance given to investors is funding given to aid the process of site clearance and development.

6.2 Parameters for Change in NRW

In applying the lessons of Scotland to NRW, two initial strategic evaluations should be made. First, it is necessary to assess the likely value of foreign investment to the NRW economy (i.e. to what extent *should* the NRW pursue an economic development strategy of encouraging foreign investment). Second, judgements should be made about the scope that the NRW economy has for successfully attracting foreign investors (i.e. to what extent *can* the NRW pursue an economic development strategy of encouraging foreign investment). Although it is beyond the remit of the project to provide a comprehensive analysis of both issues, it is well to draw attention to the importance of these issues. The two areas are discussed briefly below.

First, in terms of the rationale for the NRW pursuing a foreign investment strategy, a cost-benefit analysis should be conducted of the likely effects of FDI to the local economy. Among the costs could be the impact on local labour markets (such as skills shortages and wage inflation for key occupations) and potentially greater competition for local firms. Benefits would include those traditionally associated with foreign investment: job creation, direct and indirect income effects and possible qualitative impacts with respect to technology and skills transfers. Such an analysis would need a strong sectoral dimension, including the identification of the sectors in which the NRW have a competitive advantage and whether these sectors are likely to be the source of mobile foreign investment.

Second, the capacity of the NRW to attract foreign investment depends on the region's ability to compete with other investment-promoting regions on the criteria

that matter most to potential investors in the region's target industries. These criteria include: access to major markets (and hence, transport infrastructure as well); skills availability, labour costs and compensating productivity differences; and the RTD/innovation infrastructure (e.g. universities, research centres). It would also include an evaluation of issues immediately relevant to location decisions, such as industrial site availability, ease of planning procedures, etc.

In general, it is becoming increasingly harder for start-up inward investment agencies because of the greater competition from other regions and the impact of globalisation. The latter has had the effect of creating a more level playing field in the electronics industries, reducing the number of indigenous factors that give regions a competitive advantage in inward investment. In the electronics industries, there has been a 'whittling down' of location advantages distinguishing a region. On the one hand, the position of a region with a strong local supply base is little different from one without because electronics supply has been globalised and proximity is less of a key issue. On the other hand, the presence of a body of local skills is relatively common in regions competing for inward investment.

The factors that tend to matter in the electronics industry are either cost-driven - wage costs, incentives packages - or psychological (e.g. an existing cluster of electronics investors - as it suggests the region has adapted itself for the industry's needs - and a positive and well-organised public sector approach to inward investment). In both cases, Germany is at a disadvantage. Only with the country's labour costs is there some compensation through its higher productivity. However, the changing nature of the electronics industry also does not bode well for Germany. Electronics companies are aiming to maximise flexibility and minimise their asset and cost responsibilities, leading to a greater focus on using temporary workers, leasing rather than owning buildings and outsourcing parts of the production process. Given the limited flexibility of Germany's labour markets, it may be difficult for a German region to provide an attractive environment for high volume electronics production, regardless of the activity of its public sector organisations.

In this respect, Scottish investment success can be understood as a mixture of different elements: the existing location advantages of the region (especially for the electronics industry) and the activities of its inward investment agencies. The degree to which that success can be replicated in the NRW depends on the same combination of elements for its own target industries. The region's competitive advantages lie partly beyond the scope of this report, but its ability to emulate Scottish investment promotion is not. Such an ability derives from the policy lessons of Scotland with regards to both the institutional organisation of investment promotion and the policies and strategies employed, as discussed in the following section.

6.3 Policy Recommendations

NRW has a number of advantages and disadvantages as a location for FDI. The region's central geographic position, highly skilled workforce and close proximity to nearby markets are strong locational advantages. On the other hand, the region is disadvantaged by German-wide locational factors such as high labour costs and strong trade unions.

In order to maximise future foreign investment flows within NRW, the region will have to develop a stronger and more strategic approach to inward investment promotion and development. In this respect, NRW has the advantage of existing promotion agencies which are geared towards the attraction of FDI. However, a number of issues are now identified which could help NRW better develop FDI in the region. Although the policy recommendations have been partly derived from Scotland's success as a location for foreign investment, it is important to note that wholesale policy transferral across different cultural and political contexts is neither possible or desirable. The following policy recommendations, therefore, try and take account of NRW's unique circumstances and are divided between institutional objectives and strategic objectives.

6.3.1 Institutional Objectives

1. *Developing a dedicated inward investment promotion agency in NRW*

The organisation of investment promotion in the NRW should be based around the establishment of a single agency with the responsibility for the region's investment promotion. It should have a clear responsibility to act as a 'one-stop shop' for investors, not only in terms of the concentration of promotion powers in the agency but also with regards to its standing among other public sector agencies in the region. If other powerful development agencies do not recognise the authority of a centralised agency, its effectiveness could be hampered. From the point of view of investors, given the widening diversity of regional agencies, it is critical to have a clearly-identifiable representative agency for the region rather than a proliferation of contending regional agencies (e.g. AGIT and Emscher Lippe Agentur) and local authorities.

The best possible institution for this role is undoubtedly the GfW. The GfW already acts as the region's main promotional body and has considerable experience with foreign investment. However, there seem to be a number of internal issues which need to be resolved. First, GfW has a wide remit which covers export development as well as inward investment attraction. In practice, there is little real synergy between these activities and it would be better to have a single organisation specifically dedicated to inward investment promotion in order to maximise the focus on investment inflows. This may not entail a separation between the two functions within the GfW. As in Scotland - in the case of Scottish Enterprise - the GfW could act as an umbrella organisation within which a number of different operating units are contained. Second, this part of the organisation should be clearly differentiated from the rest of the GfW, and should have a name which better reflects its core activities (e.g. Invest in NRW or Locate in NRW).

Finally, the agency does not seem to be that well-resourced given the size of the region. As we see from Table 6.1, Lis has much more manpower resources than the GfW, yet NRW is three times the size of Scotland. In order to undertake a holistic inward investment strategy effectively, more resources - particularly people- should be given to the inward investment function within the GfW.

2. Improving coordination between the various sub-regional actors involved in inward investment promotion

Unlike the institutional framework in Scotland, interviews in NRW revealed that there were numerous institutions involved in inward investment promotion and development. Table 6.1 highlights the main differences between inward investment promotion in Scotland and NRW. There appear to be several problems in NRW regarding the coordination between institutional actors involved in foreign investment attraction. First, Nordrhein-Westfalen does not have a single organisation dedicated to the promotion of foreign direct investment. The promotion of Nordrhein-Westfalen for foreign investment is only one of the tasks of the *Land* Economic Development Agency, the GfW, and its activities are mirrored at the local level by the Local Development Agencies. Potential investors may be confused by different agencies giving different signals to them.

Second, owing to the fact that inward investment promotion is split between different levels within the region, sub-regional competition may arise. The existence of various local, *Land* and federal level agencies, who often do not cooperate and at times compete against each other to attract investment, is fragmented and non-transparent for the potential inward investor. The areas within NRW that have been most successful at attracting FDI have been sub-regions, such as Aachen, with strong pro-active development agencies (e.g. AGIT). Other areas such as Emscher Lippe have been less successful at attracting foreign investors to their localities. This uneven distribution is partly caused by the fragmented nature of promotional activities throughout the region.

Third, very little strategic aftercare is undertaken in NRW. Once foreign investors locate in the region, the responsibility for aftercare passes from the GfW to local development agencies and local authorities. Although some local development agencies work on an on-going basis with investors, some local agencies interact with investors infrequently. One firm interviewed complained that they were very concerned about the availability of skilled labour in the region and wanted to make this point known to local and regional policy makers. Therefore, the decentralised system for aftercare in NRW could be neglecting some investors, reducing the scope for influencing expansion projects in the future.

Table 6.1: Summary of inward investment agencies and activities for inward investment promotion and development in Scotland and NRW

<i>Type of Activity</i>	<i>Scotland</i>	<i>NRW</i>
Resources for FDI promotion	Well resourced dedicated inward investment agency with substantial resources (70 staff).	Wide ranging central agency with various functions; modest resources for FDI promotion (20 staff).
Promotional activities	Marketing information and intelligence inside and outside Scotland; general, sectoral and company marketing; overseas offices in 11 countries across Europe, Asia and North America.	Marketing information and intelligence inside NRW; general and sectoral marketing; overseas offices in 9 countries (mostly in Asia) with weak coverage in Europe and the US.
Targeting activities	Cluster-based targeting with main focus on key growth sectors (e.g. biotechnology, semiconductors and IT hardware manufacturing).	Combination of activity-based and cluster-based targeting with strong emphasis on technical service sectors, telecommunications, licensing agreements, RTD centres and logistics.
Coordination between actors involved in promotion	Well-defined division of responsibility between Lis and local actors; good links to the Scottish Office and strong political support for promotional activities; Lis has substantial autonomy from the Invest in Britain Bureau.	Blurred division of responsibility between <i>Land</i> and local actors; good links between GfW and the Ministry; weak national promotional structure; GfW cooperates with other <i>Länder</i> .
Level of aftercare support	Central coordination of aftercare; Lis staff dedicated to specific strategic 'accounts'.	Main aftercare activities undertaken by regional and local actors; weak links between local actors and GfW.

This system was viewed as somewhat confusing, both when attempting to attract new investment but also when trying to upgrade and develop the region's existing stock of investors. A single agency cannot act alone in investment promotion. It will be essential for it to act as a centralised coordinator of investment promotion activities, both with national level promotion (in the same way that Lis liaises with IBB in Scotland and indeed with government ministers) as well as local development organisations (such as the local authorities and the LECs in Scotland). A clear division of responsibilities needs to be made between the different agencies in the region - e.g. with regards to site preparation and provision and training support as well as in aftercare and monitoring the status of existing investors - with the understanding that overall coordination of investment enquiries and promotion should remain with the single agency. As well as supporting promotion activities, links between different development agencies in the region are necessary to enable more strategic activities to take place, such as decisions on which sectors (or companies) to target. The importance of a network of public sector agencies working in cooperation to secure foreign investment cannot be underestimated.

As we have seen, the involvement of additional sub-regional actors in foreign investment promotion means that coordination between agencies in NRW is currently poor. Certain regions and local authorities, especially the large cities, are wary of falling behind in terms of new foreign investment and therefore want to undertake promotional activities themselves. Although this is more likely to occur in such a large economy than in Scotland, more should be done to improve internal links within the region. One possible mechanism for developing greater levels of local cooperation would be to increase the level of local ownership of GfW. One method of developing intra-regional cooperation is to widen the participation of the GfW's supervisory board to include representatives from various local authorities and regional development agencies. Not only would this enable better cooperation, it may legitimise a more powerful role for the GfW in foreign investment promotion.

Another way of cementing cooperation between different territorial interests, thus avoiding internal rivalry, is to market different parts of the region for different types of foreign investment. This point refers to the need for a spatially-targeted cluster-driven FDI promotion strategy which is outlined in the strategic objectives section below (6.3.2).

3. NRW should develop a stronger overseas profile to develop the region's image

In addition to an efficient local network, the new investment arm of the GfW agency should have a strong overseas network of representatives. Given the limitation of resources, the scale of overseas representation does not have to be extensive, but there should be a number of offices located in the key territories which have been targeted by the single agency. The Scottish experience suggests that a dedicated office/individual is to be preferred, rather than investment promotion being the subsidiary responsibility of a consulate or a representative agency, though clearly this should only be in areas where significant investment is expected to be forthcoming.

At present, the GfW has two overseas subsidiaries and eight representative offices. Although this is quite extensive, the geographical location of these offices seems

somewhat out of step with the main sources of incoming investment. Again, part of the problem relates to the dual purpose of the GfW which simultaneously tries to attract inward investment and promote export development of indigenous firms. For example, there are two representatives in China, one in Vietnam and one in Israel, yet virtually no foreign investment comes from these countries. In fact, there are worries that these offices may actually promote *outward* investment.

The GfW needs offices which are specifically set up to promote the region as an investment location. In doing so, the existing offices should continue to be used by the inward investment executives; however, new dedicated offices are required to promote NRW better. The geographical location of these new offices should take into account the origins of the region's current investors. Not only is it sensible to develop existing sources, but a presence in these markets helps the GfW to work closely with the headquarters of existing investors in NRW to ensure plant expansions and upgrades. In terms of geographic coverage, the GfW seems badly positioned in the EU. Although providing the majority of inward investment, no overseas offices exist in Europe. NRW should establish at least a presence in its most important EU neighbours (i.e. Netherlands, France and the UK). Given the importance of the US as a source of incoming foreign investment, additional US offices should be considered for regional markets with high concentrations of NRW's target sectors (e.g. medical equipment technology in Massachusetts and automotives in Michigan).

Within each overseas territory, it is also important for local networks to be developed between the investment promotion representative and individuals and organisations likely to be sympathetic to the goal of promoting investment in the NRW. Therefore, the GfW, should try and link up wherever possible with Chambers of Commerce and German executives within companies to help them to promote the region.

6.3.2 Strategic Changes

1. Investment promotion policies in NRW needs to be focused

In terms of the policies employed for investment promotion, a region such as NRW will be constrained by existing national controls in the same way that Scotland has. For example, NRW will have limited scope for developing separate macroeconomic variables. However, as we saw in Section 3, Scotland has managed to successfully promote itself as a location for FDI through carefully designed promotional policies. Therefore, NRW should try to differentiate itself from Germany in the same way as Scotland has done from the UK as a whole.

Nevertheless, promotion policy needs to be understood as a three-stage process, requiring different instruments and approaches at each stage. The first stage is *targeting* likely investors. Against a background of increasing competition and limited resources, it is essential that certain industrial sectors are identified both precisely (in terms of sub-sector) as well as widely (in terms of the number of target sectors considered). The exact list of target sectors will naturally depend on the existing sectoral composition of the NRW economy and the types of sectors which provide sources of mobile investment projects. A number of geographically-based sectoral clusters have already been identified in NRW (e.g. chemicals in Emscher Lippe,

telecommunications in Dusseldorf, logistics in Duisburg, and media-related industries in Cologne).

In order to develop inward investment in these sectors, the GfW should undertake further research in order to compile detailed information on each of these sectors, identifying the nature of activities which could possibly be attracted to the region (headquarters, RTD, manufacturing). This should include a detailed picture of each sector's strengths, weaknesses, opportunities and threats regarding inward investment. Following this, the promotional focus of the GfW should focus on potential investment opportunities in each of these sectors.

The second stage is the actual *marketing*. This is itself a three-stage process, as described in the section on Lis activities. Any marketing undertaken by the NRW needs to distinguish between:

- *general* marketing which involves raising the awareness of the region among a large list of potential investors in the target countries, usually by mailshots and advertisements;
- *sectoral* marketing involving a more directed marketing of the region's advantages in particular sectors, often through special seminars); and
- *company* marketing comprising the intensive marketing of the region to companies actively considering an investment decision, which ranges from the provision of detailed information on the location to hosting hospitality visits for company representatives.

Scotland's success in marketing has been in recognising the importance of these stages and taking a proactive and coordinated approach at each point of the process. This can be seen in the Lis' marketing with start-up companies in its target sectors long in advance of any potential investment decision as well as through the support of government ministers and different agencies in its promotion campaigns. It has also been important to set up information storage systems with up-to-date intelligence about potential investors and target sectors.

Although some of the GfW's marketing adopts a sectoral approach, it appears less focused and more reactive than in Scotland, especially concerning company targeting. Within each sector or sub-sector, the GfW should try to be more aggressive when establishing contacts with potential investors. Speculative follow-up visits and tracking should then be undertaken by overseas inward investment staff. A method of identifying specific companies is to try and fill gaps in local sectoral supply chains. Section 3 showed how Scottish Enterprise use procurement surveys of inward investors to identify external suppliers without a presence in Scotland so that they can then be contacted by Lis. This form of targeting has the added advantage in that existing investors can be used as part of the promotional campaign to attract its suppliers. These surveys could be undertaken by the GfW and then passed on to inward investment staff abroad.

The last stage is the use of *financial incentives*. As noted elsewhere in the report, the importance of incentives in influencing investment decisions is greatest when a

shortlist of location sites has already been prepared. In this regard, it is not so much the size and value of incentives that matters most as the scope that the agency has for providing a variety of different types of assistance (often not directly financial, such as support with site preparation). The ability to combine marketing and financial award powers in a single institution has been a notable element in Lis' success. Clearly, such award powers would have to be monitored, but it is important that NRW's promotional agency can make indicative offers of incentive packages to potential investors *quickly*. This could be achieved if links between the Ministry and the GfW were strengthened.

2. *Developing a more comprehensive aftercare strategy for existing foreign-owned companies*

As we saw earlier, the nature of inward investment is changing. As greenfield inward investment diminishes, new investment is increasingly taking the shape of plant expansions, or in the case of some manufacturing activities, new products ranges or individual models. In addition, inward investment can also change the qualitative nature of any given operation. For example, sales offices can be developed in technical design centres or manufacturing locations. Service sector investment is also reshaping with the advent of call centres and shared technical service centres. In order to maximise opportunities from these changes, NRW needs to develop a comprehensive aftercare strategy.

The report has highlighted how Lis has established a special dedicated team to work on aftercare issues. Major investors - or 'accounts' - are handled by Lis directly, while smaller investors are covered by LEC officials in the individual sub-regions of Scotland. Each Lis official on the aftercare team can be working with up to ten accounts at any one time, usually grouped together by the investor's country/region of origin. Developing such personal relationships with companies is regarded as an important element in successful aftercare. On the other hand, most aftercare in NRW is undertaken at the local level by regional and local development agencies. This situation leads to a fragmented system of aftercare. In fact, one investor company interviewed during the research expressed concern at the lack of contact between the company and local policy makers. A proper aftercare policy will involve the GfW working closely in tandem with local development actors, but overall control for this initiative should be taken by the former to maximise coordination. The GfW may wish to designate certain staff members for key investors or 'accounts', while smaller investors could work in tandem with local development bodies.

Aftercare policies in NRW should concentrate on three main activities.

- First, aftercare should try and develop greater autonomy within large companies. One way of promoting more local autonomy within plants is to encourage the company to locate more RTD and design functions. GfW should work in tandem with universities and research centres to highlight the research capabilities within NRW for inward investors.
- Second, the inward investment arm of the GfW should also work closely with existing investors to ensure they are viewed favourably by their parent corporations for new investment projects. For example, large strategic investors, such as

Mitsubishi's semiconductor plant in Aachen, should be assisted when campaigning with its parent organisation for the production of the latest generation of microchips. Following this, senior politicians from the region could be enlisted to campaign for the investment in Aachen.

- Finally, any local aftercare initiative should also include monitoring of local sourcing levels by large manufacturing companies on an on-going basis. This valuable information could be gathered through procurement surveys and then used by the GfW to target existing suppliers to locate in NRW. This is a key mechanism which Scotland has used to fill gaps in its electronics value-added chain.

Given the increasing importance of re-investment projects, NRW should develop a better developed system of aftercare for inward investors. This is particularly important given the fact that many existing companies within the region could uproot and leave the region, especially Asian firms encountering problems in their home economies. In order to fully develop the strategy, the present study could potentially be extended to examine best practise models of aftercare from other inward investment agencies throughout Europe to better inform the situation in NRW.

3. Increasing the profile of inward investment attraction and development within the NRW Objective 2 programme

Owing to its focus on developing SMEs, the NRW SPD pays little direct attention towards developing inward investment. However, as in Western Scotland (see section five), the Objective 2 programme in NRW is heavily focused on developing the physical infrastructure in the region which, in turn, has a direct bearing upon the region's ability to attract inward investment. In fact, some three-quarters of public expenditure went on infrastructure during the 1994-96 programming period. Within this total, the conversion of industrial sites absorbed 32 percent of the approved funding volume. As shown in previous evaluations of the NRW programme, this level of expenditure seems to indicate that the region is developing sufficient high quality sites suitable for new inward investment projects.

Although the availability of sites is a vital prerequisite for attracting new inward investment, the Objective 2 programme in NRW pays less attention to existing inward investment, particularly through aftercare policies. It was noted earlier, how Scotland has developed a range of aftercare policies which seek to develop its inward investors (see section four). Although direct support to large companies is not allowed within the Structural Funds regulations, greater assistance within the programme could be directed towards maximising the impact of large strategic inward investment projects such as Mitsubishi's semiconductor plant in Alsdorf. For example, pilot projects could be undertaken within the current programming period which develop Mitsubishi's local suppliers and encourage technology-transfer between such large companies and local research institutions. This type of policy intervention is vitally important for developing strategic clusters such as electronics (Brown, 1998). In order to develop aftercare policies in the longer term, greater effort should be made to integrate the Structural Funds support with the work undertaken by the GfW (see point two above).

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