Reflections on Irish Industrial Policy towards Foreign Direct Investment

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Abstract

Irish policy towards foreign direct investment has evolved since the 1950s as a strategy driven primarily by the use of fiscal incentives to enhance the profitability of locating in Ireland, with grants as required to achieve a particular bargaining advantage in competing against alternative international locations. Our empirical analysis of European firms in Ireland suggests that the investment incentives offered appear to have led to significant gross job gains in the targeted *high-tech* sectors, as proxied here by the Metals & Engineering and Chemicals sectors. However, these gross gains have not translated into net gains of a similar magnitude.

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Section I: Introduction

Over the past forty years the Republic of Ireland, hereafter referred to as Ireland, has pursued an industrial strategy characterised by (i) promoting export-led-growth in Irish manufacturing through various financial supports and fiscal incentives, and (ii) encouraging foreign companies to establish manufacturing plants in Ireland, producing specifically for export markets. As a consequence of this strategy, any comparison of the Irish economy with other economies in the European Union (EU) immediately notes the enormous significance of foreign direct investment (FDI) in the Irish manufacturing sector and the manufacturing sector's very high export ratio, especially among foreign-owned companies (see Foley and McAleese, 1991).

FDI has played a crucial role in the overall development of the Irish manufacturing sector over three decades. Until the mid-1960s Ireland had a highly protected economy with some of the highest rates of effective protection of any economy in the world (McAleese, 1971). In particular, these tariffs protected Irish manufacturing industry against imports from the UK. Reductions in tariffs began in 1966 as a consequence of the Anglo-Irish Free Trade Area Agreement, and the process of tariff reduction was eventually completed in 1978, following a five-year adjustment after Ireland joined the European Economic Community (EEC). The scale of structural adjustment necessary to adjust to free trade was on a par with that undertaken by many developing economies over the past decade under the auspices of the structural adjustment programmes of the IMF and the World Bank. In the absence of FDI, the reduction of high tariffs in Ireland would have required a massive devaluation against sterling, when policy at the time was fully committed to maintaining that link at parity. The scale of FDI coupled with some restructuring support for import-substituting Irish firms allowed the exchange rate to be maintained, and

an inevitable shake out in the indigenous sector to take place without any massive decline in total jobs in manufacturing.

Furthermore, FDI has assisted in the process of adjustment within the manufacturing sector and across geographic regions. The sectoral composition of FDI (with the exception of investment from the UK) is less concentrated on traditional and food-sector activities than that of indigenous manufacturing, and thus the growth of the FDI component in manufacturing has meant that the share of these activities in total manufacturing output has declined over the past thirty years. The extent of restructuring is more apparent the lower the level of sectoral dis-aggregation. In terms of regional employment, FDI became a vehicle for dispersing manufacturing employment across the country, and away from the traditional manufacturing bases in Dublin and Cork (Killen and Ruane, 1993). Since the Irish economy was still heavily dependent on agricultural employment in the 1960s, the regional dispersal of foreign-owned firms created new jobs in regions where existing employment opportunities were declining.

While the focus of this paper is on FDI, some reference is made to indigenous industry in order to establish a benchmark against which we can assess the impact of foreign-owned firms.[1] We concentrate on FDI in the manufacturing sector, as the sector where FDI has hitherto had its greatest impact and we do not analyse foreign investment in service activities. In the context of the manufacturing sector we assess the major impact of foreign-owned industries in Ireland by focusing primarily on the associated employment

[1] Developments in the indigenous sector, however, cannot be seen as indicating what would have happened overall in the absence of the FDI which occurred. In practice, the outcome could not have been such because the structural adjustments to free trade without FDI would have required macro interventions, which would have altered the environment faced by the indigenous sector. Furthermore, the presence of FDI companies may have had some negative impact on indigenous firms, say through crowding out especially in the factor markets, or some positive impact, say through generating additional markets for the products of indigenous firms, enhancing the level of technology in use and in improving the levels of management etc. in the manufacturing sector.

because employment has always been the major target of the policy makers and we have an employment time series which allows us to distinguish some elements of sectoral dynamics.

The outline of the paper is as follows. In Section 2 we look at the characteristics of the policy which has been used to promote FDI and in Section 3 we look at how policy is implemented. In Section 4 we examine the overall impact of FDI in Ireland in terms of employment, focusing in particular on European-sourced FDI, distinguishing the UK, Germany and a residual category "Other European". Finally, in Section 5 we consider some of the current concerns about industrial policy in Ireland.

Section II: Key Characteristics of Irish Policy towards FDI

The decision to promote FDI actively in the 1950s represented a dramatic change in policy for the Irish economy.[2] In the period dating from the 1930s, when the Irish economy introduced high rates of tariff protection on manufactured goods, FDI had been legislatively prohibited directly through the Control of Manufactures Acts. The purpose of these Acts was to ensure that indigenous 'infant' industry would benefit from the protectionist strategy and in particular that UK firms would not benefit by establishing manufacturing plants in the protected Irish market into which they had previously been exporting.[3] The change in the 1950s can be seen as Ireland's finally managing to de-couple the link between FDI and its colonial past, as hitherto the presence of FDI companies was seen by many as evidence that Ireland had not established its economic independence from the UK (see Lee, 1989, c.5; O'Malley, 1989, cc.4-

[2] There are various extant reviews of policy with regards to FDI, the most recent substantial one being found in Foley and McAleese (1991). Other recent commentaries include O'Sullivan (1995) and Ruane (1991).

[3] UK-owned firms which had already established in Ireland prior to 1932 were not forced to leave, so that there was a considerable amount of UK FDI in the 1950s. Indeed in 1975, UK-owned firms accounted for over 13 % of total manufacturing employment in Ireland.

5). From this time onwards, attitudes in Ireland to FDI, irrespective of source, have typically been extraordinarily positive right across the socio-political spectrum.

Employment Focus

The change from an anti- to pro-FDI strategy was driven primarily by the real failure of the pre-war protectionist strategy to generate a viable manufacturing sector, which was capable of providing enough jobs to counteract the falling number of agricultural jobs in rural areas. Indeed the highly protected 'infant' industries established in the 1930s had become 'geriatric' industries by the 1950s exhibiting all the features of X-inefficiency which might be expected from such a prolonged period of protection. In the mid-1950s there were high unemployment and emigration rates, especially in and from rural areas. Consequently employment has always been seen as a key indicator of the success or failure of Ireland's industrial strategy and the regional distribution of companies and employment has been constantly monitored. In the past decade, policy has focused on other attributes of FDI, in particular on profits, technology, and linkages. Nonetheless employment remains the key variable for measuring policy success or failure.

Automatic and Discretionary Policies

Pro-active policy has taken two major forms: fiscal and financial. Initially the main element in the fiscal policy for foreign manufacturing companies was an ***automatic tax holiday*** on the profits from all new export sales.[4] When introduced in the mid-1950s, the tax holiday was given for ten years but this was subsequently extended to fifteen years with a further five

[4] Since the 1970s, other fiscal policies have facilitated foreign companies in obtaining cost-effective tax-based financing on the Irish market. In some cases the impact of these policies have had a very significant impact on attracting foreign companies to locate in Ireland.

years of partial relief; the holiday was set to terminate in 1990. Prior to 1990, however, Ireland was forced by the European Commission to alter the policy for new firms, as the tax holiday created a bias towards exports which was incompatible with the Treaty of Rome. Since 1982, all new firms have been entitled to an automatic preferential corporate tax rate of 10 % which has applied to all profits and not merely those arising from export sales.[5] Given the small size of the Irish market and Ireland's membership of the European Economic Community (EEC) from 1973, Ireland's attractiveness for foreign companies lies in its being an investment base for exporting, especially for extra-EEC/EC/EU companies. Consequently the switch to a trade-neutral incentive away from a pro-exporting incentive had little effect on firms' sales behaviour, with exporting remaining the driving force behind the investment of foreign-owned firms in Irish manufacturing.

Financial supports for foreign firms locating in Ireland in the 1950s were primarily in the form of cash grants towards the cost of the plant and machinery which would be used to produce goods for export markets.[6] As with the tax holiday, the basis for grant eligibility had to be changed in 1982, so that the grants now apply to all manufacturing firms and not merely those which are exporting.[7] By contrast with the fiscal incentives which were available to all firms automatically, these were ***discretionary grants,*** available up to certain maxima (determined by legislation) and implemented at the discretion of the Industrial Development Authority (IDA). While the discretionary option was

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5 This compares with the standard rate of corporate tax which has been reduced gradually from 50 % in the 1970s to 36 % in 1997.

6 While companies were not totally prohibited from selling on the domestic market, they could not do so using grant-aided equipment and the return to domestic sales was significantly lower because of the high rate of corporation tax such profits attracted (circa 50 %).

7 Additional assistance in the form of training grants, subsidised rents, technology-transfer supports, etc. have also formed part of the policy package and in the case of some projects the training grants can be an important component of the total financial support given.

rarely if ever exercised in the 1950s and 1960s, in the sense that the maximum grant was virtually always paid out, it has had a lasting effect on industrial policy in Ireland, in that for over forty years industrial policy has always operated at project level.[8] This issue is discussed further in the next section.

It is worth noting that, compared to other countries, Ireland has had a rather different approach to FDI, in positively promoting greenfield, export-orientated manufacturing investments in such a way that indigenous firms were in a sense "protected" from direct competition with local FDI firms on the home market.[9] By contrast, those semi-developed and developing countries which began to promote FDI positively in the 1960s based their strategies on attracting FDI specifically to produce for the local market which was typically protected by high tariffs and other trade barriers. In effect, these countries were adopting the very strategy which Ireland had ruled out in the 1930s, namely of allowing FDI companies to partake in the growth induced in domestic production by tariff walls. More recently, the economies of Eastern Europe seem to be preoccupied with attracting FDI to take over existing 'brown-field' plants rather than to establish new greenfield plants. Furthermore, while Ireland is not unusual in Europe today in promoting FDI, in the 1950s when it introduced this policy, most countries in Western Europe were at best indifferent towards FDI.

Policy Certainty

Thus the primary characteristics of the Irish FDI strategy are its employment focus, and its promotional approach combining automatic fiscal

[8] While in many countries intervention is increasingly made at a project level, in the 1950s and 1960s this was extremely rare, except in, say, the nationalised industries in the UK. Such intervention as occurred was only likely in the case of extremely large projects, whereas in Ireland, the smallest of projects was analysed and evaluated for grant purposes.

[9] While this protection effectively disappeared when the tax holiday came to an end, it is still the case that grants will not be given to firms which are clearly going to add to competition on the domestic market.

incentives with discretionary grants. A further additional characteristic worthy of note is the emphasis on certainty. Recognising the negative effects of uncertainty on investment, the Irish system has always attempted to give as much certainty as possible to the incoming and established investor through policy continuity. The continuity in policy has been possible primarily because there is widespread consensus in Ireland on the strategy of promoting FDI and on the use of the financial and fiscal incentives in that process - by and large there is no major political debate on the fundamental issues and consequently policy has remained broadly unchanged over long periods. With regards to fiscal incentives, certainty is achieved by providing the investing firms with a long and certain time horizon. Thus, for example, firms locating in Ireland in the 1960s were given a fifteen year tax holiday and those locating in the 1980s were assured that the corporate tax system which they would face would be unchanged until 2000; in 1990 this was extended to 2010. Furthermore, the ending of the tax holiday was 'grand-parented' so that individual firms who had been given tax-holiday status were able to hold onto it, despite the changes for new firms after 1982. Promotional FDI fiscal policies are essentially independent of the annual budgetary process and of changes in government.[10] With regards to financial policies, uncertainty on the part of firms has been minimised by the payment of the cash grant up-front, with repayment required if the firm fails to meet its agreed employment objectives. The government's money is secured by linking the payment to fixed assets lest the project fail. This gives certainty and security to both investor and government.[11] In effect,

[10] Where changes have been made, such as the reduction in the rates of asset depreciation for tax purposes as rates of inflation declined in the late 1980s, these have been pre-announced and done in a very steady and gradual way, minimising uncertainty for firms.

[11] Since the policies are operated in a discretionary manner, firms do not know precisely what grant they can expect to get until the negotiations with the IDA are complete, but they have the advantage of dealing with one agency in a centralised system so that at the earliest possible date they are in a position to know what support they can expect.

there is a commitment across the whole system to make the FDI policy work and generate as much policy certainty in the system as possible.

Section III: Characteristics of Implementation

We have drawn a distinction between the characteristics of policy and the characteristics of implementation because we feel that this distinction can be important to understanding the success and out-turn of policy. Indeed policy can have quite different effects depending on how precisely it is implemented. While different governments offer various investment incentives, as listed by Yuill *et al.* (1995), it is widely recognised that the decision to invest in one country rather than another is influenced by a complex set of factors, many of which materialise during the actual implementation of policy.

Financial Incentives and Factor Choice

One example of how the operation of policy impacts can be seen by looking at how the capital grants influence factor choice. As noted above, when the grant policy was introduced, it operated as a straight capital grant, i.e., an exporting firm entitled to a grant of 50 % towards the cost of machinery would receive that 50 % grant on receipt by the agency of proof that the machine had been purchased and was in operation. Gradually the grant system came to be operated in a more discretionary manner, partly in response to criticism that such an incentive was capital-biased and hence inappropriate. The amount of grant money given was influenced by the number of jobs expected to be created; it was then expressed in terms of a capital grant rate to the cost of machinery (say 45 %) and paid out as before when the machine was purchased and put into operation. Following further criticisms that capital bias was still possible because firms had an incentive to exaggerate the number of jobs which they expected to generate, limits were set in terms of both grant per unit capital and

grant per unit labour. Also, while grants were still paid out in relation to capital purchases, firms were legally contracted to repay grants if they did not reach their stated employment target. Thus while Ireland might appear to have had the same grant policy since the early 1950s, changes in how it is implemented have considerably altered its effects.

Project Selection

As noted in Section 2, Irish policy has always operated at project level and has become increasingly proactive and selective since the 1970s. While good projects in virtually all sectors of internationally-tradable economic activity, with the exception of the tourism secotr, are in principle eligible for support, not only has the level of grant support varied, but resources have been increasingly deployed in the IDA to select potential projects on a strategic basis. The first stage of this selection involves identifying high-growth market niches, in which projects are internationally mobile (footloose) and in which Ireland could provide a reasonably competitive base; the second stage seeks to discover the strong companies which are operating in those niches and which might be considering diversifying their production internationally.[12] The third stage requires locating project executives in those countries which are seen as potential sources of such FDI projects in order to initiate contacts with the companies identified in the second stage. Finally, the fourth stage involves getting the company to visit Ireland in the context of a specific project proposal.

[12] In a sense IDA personnel were collecting and responding to market information about particular firms which were likely to expand. Implicit in their approach to looking at potential foreign investment was the kind of framework developed by Dunning (1988), who suggests that foreign investment depends on (i) special firm characteristics which enable companies to produce profitably abroad, (ii) an incentive to internalise this advantage, and (iii) location characteristics in the host countries. IDA Ireland's approach involves (i) identifying industries (and firms) which had the ability to profitably locate in foreign locations, (ii) considering the means of how this foreign involvement could be achieved (in general through FDI), and (iii) analysing whether Ireland could offer locational advantages for these particular industries (and firms).

The precise pattern of FDI projects which come to Ireland is strongly influenced by this process.

Bargaining

The fact that grant supports have been discretionary up to a maximum means that all FDI projects involve bargaining between project executives and potential investors. While foreign project investors argue for more grants on the basis of the attractiveness of alternative international investment locations, Irish project executives limit the grants they offer on the basis of a form of cost-benefit analysis, which considers factors such as employment potential and location of the projects within Ireland. The grant maxima ensure that the amount of assistance given is bounded and when the absolute amount of the capital grant support exceeds £2.5million the grant support requires Cabinet approval.[13] All grant payments are in the public domain so that transparency is assured about the final payment but not the process of arriving at it.

These discretionary grants combine very effectively with the automatic fiscal incentives, which in turn are backed by a carefully negotiated set of double tax agreements to maximise the benefit of the tax incentives to FDI companies.[14]

Sectoral Selectivity

With regard to sectoral selectivity, in the 1970s the IDA identified the electronics and pharmaceutical sectors as providing the most promising opportunities for foreign investment projects for Ireland. Furthermore, the US

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13 For firms with large employment training grants, there is a maximum also subject to Cabinet review.

14 Double tax agreements are very important in this context, since the value of a tax incentive against corporate tax in the host country depends crucially on how it is viewed by the tax authorities in the home country. Comparing tax incentives with other incentives, various surveys have concluded that the tax incentives are the most important incentive encouraging manufacturing investors to locate in Ireland. For example, a recent Deloitte Touche Tohmatsu survey indicated that almost 60 % of foreign companies interviewed found the ten % rate to have been very influential in their location choice. Furthermore, IDA Ireland personnel would suggest that tax incentives are particularly popular with US firms.

was identified as the most likely market source for such projects. The creation of industrial clusters has been central to policy and particular sub-sectors of electronics and pharmaceuticals have been heavily targeted for over twenty years; since the late 1980s and early 1990s this targeting has begun to yield very significant benefits especially with US companies (see Section 4).[15] The present sectoral strategy for the manufacturing sector is to consolidate on building clusters in the electronics and pharmaceutical sectors and to promote out-sourcing linkages with domestic firms in these sectors. In addition, within existing sectors executives are mandated to seek to promote the location of head-quarter and R&D functions in Ireland. This is seen as important from the point of view of achieving high- income jobs and of encouraging a deepening of the firms' commitment to Ireland. Finally, increasing resources have been devoted in recent years to promoting FDI in internationally-traded services, discussion of which lies beyond the scope of this paper.

Section 4: Impact of FDI in Ireland

We now turn to look at some empirical measures of the significance and impact of foreign direct investment on the Irish economy. Table 1 shows shares of net output, employment and exports by sector for 1993. Over two thirds of total net output in manufacturing in 1993 was accounted for by foreign-owned companies, with the share of total net output generated by foreign-owned companies varying quite considerably by sector. This variability is to be expected, both because of differences in the degree of international mobility of investments across sectors and because of the selective way in which policy is implemented. Looking at sectors, we find that this share ranges from less than

[15] For example, recent high profile investors in Ireland, such as Intel, Hewlett Packard, and IBM have been targeted by IDA for more than a decade, with regular presentations, etc. This points to the long lead time required to realise the benefits of such a strategy and the fact that the success in this area has been heavily influenced by the method of implementation.

20 % in Non-metallic Minerals to over 90 % in Chemicals and in the *high-tech* sub-sectors of Metals & Engineering (M&E), namely, Electrical & Electronic and Instruments. As discussed above, these are exactly the sectors targeted by Ireland's industrial policy.

One might argue that the output data over-state the significance of the value-added of foreign-owned companies. To the extent that companies understate the value of inputs used and overstate the value of the sales generated, this measure overstates the importance of FDI companies in real activity in manufacturing. Firms may try to artificially raise their net output figures in Ireland by engaging in transfer pricing in order to transfer profits to Ireland (Foley, 1991). The employment figures reported in the table can be seen as giving a more conservative measure of the significance of foreign firms.

The overall share of foreign firms in total manufacturing employment is 44 %, less than two thirds the share of net output. The foreign share of net output by sector exceeds the foreign share of employment in all but one sector showing a similar but not identical pattern. These differences could be due to (i) differences in sectoral activities, (ii) differences in factor intensities in the same sectoral activity, resulting in foreign firms being less labour intensive than indigenous firms, or (iii) transfer pricing. Nevertheless, the employment figures appear to confirm the importance of the *high-tech* sectors. Unfortunately the level of sectoral dis-aggregation does not enable us to compute the values for the sub-sectors of M&E.

Table 1 also shows the export ratios for foreign-owned and indigenous manufacturing companies by broad industrial sector. Foreign-owned firms have considerably higher export ratios than indigenous firms, with over 85 % of the gross output of foreign firms being exported - two and a half times the comparable figure for indigenous firms. Note that the export ratios in foreign-

owned companies are close to 90 % in most of the manufacturing sectors; only foreign companies in the Food, Drink & Tobacco, Non-metallic Minerals and Miscellaneous sectors appear to serve the local market to any great extent.

Sources of Foreign Companies

As discussed above, employment creation has been the overriding focus of Ireland's industrial strategy and the figures in Table 2 suggest that this aspect of the strategy has been successful. While manufacturing employment in Irish-owned firms decreased by approximately 19 % between 1975 and 1995, employment in foreign-owned firms increased by some 27 % during the same period. Both effects sum up to a net decrease in manufacturing employment of roughly 3 %, in a period when manufacturing employment in the EU declined by more than 20 % (European Commission, 1996).

Looking at the source of foreign investment, Table 2 shows that the US was by far the biggest investor in Ireland in 1995, with more than half of the employment in foreign-owned firms being in US-owned firms. Employment in US firms has almost trebled between 1975 and 1995, lending some support to the conclusion that the policy of attracting FDI projects from the US has been successful over the last twenty years. This success is evident in Ireland's increasing its "market share" of US investment in manufacturing industries (measured in terms of capital expenditures by US affiliates) in the EU from 2.6 % in 1983 to 5.8 % in 1994 (Ruane and Görg, 1996a). Employment in companies originating in other non-European countries has also increased considerably since 1975, though it still only accounts for a relatively small share of total employment in Irish manufacturing industries. In the remainder of Section 4, we focus on the employment performance of European companies in Ireland, and our analysis indicates different trends in the pattern of investment by different European nationalities. We distinguish three nationality groups, namely

the UK, Germany, and a group "other-European".[16] Fig. 1 complements the analysis in Table 2 by showing annual employment figures by nationality.

Employment in German firms increased relatively modestly between 1975 and 1985 (by around 1,500), but grew by 2,100 between 1986 and 1995. This represents a total increase in employment of more than 50 % between 1975 and 1995 and suggests that German firms have responded positively to both Ireland's accession to the EEC in 1973 and to the impact of the European Single Market Programme in the late 1980s. The availability of a relatively cheap and skilled labour force and of relatively generous investment incentives has always made Ireland attractive to German investors, and this attractiveness was enhanced by Ireland membership of the European market. On the other hand, employment in companies from other European countries shows a more volatile development. It increased between 1975 and 1982 by approximately 500, but decreased by roughly 3,000 between 1983 and 1986. Since then it has stabilised at around 14,000. This trend may indicate that in a more integrated European market, Ireland has lost part of its attraction for investors from other continental European countries beside Germany.

In contrast to the firms from continental Europe, UK-owned firms show a much more dramatic development - employment has declined by over 50 % since 1975. The fall in employment of approximately 13,000 between 1975 and 1985 is not surprising given the impact of the Anglo-Irish Free Trade Area Agreement in 1965. Ireland's high tariffs had not only protected indigenous firms, but also a large number of UK firms which had established in Ireland prior to 1932. The introduction of the Free Trade Area removed the need to maintain plants in Ireland in order to serve the Irish market competitively - this could now

[16] As regards this nationality group, note that investment from non-EU European countries is virtually non-existent in Ireland. Therefore, one can think of the 'other European' group as investment from continental EU countries other than Germany.

be achieved through exports from the UK. The dramatic decrease in employment in UK firms in this period can, therefore, be mainly attributed to such firms exiting from production in Ireland. Between 1986 and 1995, employment in UK firms decreased by a further 4,000, indicating that the downward trend has slowed down.

Sectoral Composition of Employment

We now turn to look at the sectoral composition of employment in European companies in Ireland. Following the policy orientation towards *high-tech* industries, most closely measured here by the M&E and Chemicals sectors, we would expect employment in these sectors to have grown particularly strongly. Table 3 shows the sectoral breakdown of employment in European firms in Ireland. Particularly noteworthy is that almost 80 % of employment in German firms in 1995 was concentrated in the M&E sector and that employment in this sector more than doubled between 1975 and 1995. The remaining employment is spread across the other sectors. By contrast, employment in firms from other European countries is less concentrated and spread across the Chemicals (20 %) and the M&E (33 %) sectors. Employment in the latter sector actually fell over the period while employment in Chemicals increased by approximately 50 %. Thus, as measured in terms of employment, the response of German firms in the M&E sector and other European firms in the Chemicals sector is in line with Irish industrial strategy.

Employment in UK-owned firms shows a sectoral breakdown which is very different from the continental European countries. The sectoral spread is much less concentrated in both 1975 and 1995, and such concentration as occurs is in the Food and Drink & Tobacco sectors, which accounted for almost 50 % of jobs in UK-owned firms in 1995. This reflects the significance of long-standing UK firms and of Irish raw material resources for UK firms in those

sectors. Indeed, as we concluded elsewhere (Ruane and Görg, 1996), the experience for the UK companies over this period resembles much more that of Irish-owned firms than of other foreign-owned firms in Ireland.

Composition of Employment Change

Thus far, we have compared employment figures in 1975 and 1995, which provided us with a snap-shot at particular points of time. However, such an analysis cannot reflect the full extent of changes taking place within particular sectors over the period between the two benchmark years. Industrial policies can be expected to have some effects on job gains but only a weaker influence on the employment stock, since the latter reflects the impact of past history and policies. To take some account of these dynamics, we now turn to look at job gains and losses across manufacturing sectors. A sector can show job gains and job losses in the same year due to (i) firms that expand (through firm entry or firm expansion) and (ii) firms that contract employment (through exit or contractions) over the same period. Thus, our measure of job gains includes all new jobs generated in firms in sector *j* over a given period (whether or not they still existed at the end of the period) while the measure of job losses includes all jobs lost in firms in the same sector over the same period. Net job change is the summation of job gains and job losses in a given sector. The data on job gains and losses per firm are compiled annually at firm level by the data collecting agency, and we aggregate these for the period 1975 to 1995. To put it formally, we calculate

$$\text{gains:} \quad g_j = \sum_i g_{ji} \tag{1}$$

$$\text{losses:} \quad l_j = \sum_i l_{ji} \tag{2}$$

$$\text{net:} \quad (g_j - l_j) = \sum_i (g_{ji} - l_{ji}) \quad , \quad i \in \{76,77,\ldots,95\} \tag{3}$$

Note that the first gains and losses are reported in 1976, since 1975 is our base year.[17]

The data in Table 4 indicate that, relative to 1975 or 1995 stocks, there have been huge job gains and losses over the analysed period. In order to compare the employment performance for different nationalities we generate two indicators, presented in Table 5,

$$A_j = \frac{g_j}{n_j} \ , \tag{4}$$

where n_j denotes total employment in sector *j* at the end of 1975, and

$$B_j = \frac{(g_j - l_j)}{g_j} \ . \tag{5}$$

The *A* measure expresses job gains relative to the employment base in 1975, which allows us to benchmark the extent of job creation across countries that started from very different employment bases in 1975. The *B* measure expresses the net job change relative to job gains which can yield some insights into the relationship between gross and net job creation, i.e., whether or not gross gains translated into persistent net job creations.

The large numbers of total job gains and losses in Table 4 indicate considerable activity of job generation and destruction taking place which is not reflected in the net figures of employment change in Table 3. In the nationality comparison it is apparent that, of the three nationality groups, German firms have both the highest *A* and *B* ratios, while the UK has the lowest ratios in both cases. The *B* ratio of -0.93 for UK firms in fact indicates that the job losses

[17] Note also that the calculation of job gains and losses is not readily comparable to the calculation of gross flows of jobs as introduced by Davis and Haltiwanger (1990) and used recently by, for example, Konings *et al.* (1996). In particular, the two indicators described below are different from the measures used in those papers.

were almost twice as high as job gains (-1 would indicate that job losses were double the job gains).

It is also evident that job gains and losses were not uniform across manufacturing sectors. UK firms show net job reductions in all manufacturing sectors; despite the quite considerable job gains in the M&E and Chemicals sectors, the job losses by far exceeded even in these sectors. The *A* measure indicates that the job gains compared with the base employment in 1975 were among the highest in the M&E and Chemicals sectors, while they also show some of the highest values for *B* (though they are still very low compared with the other countries). This suggests, to some extent, that the policy measures did result in job gains in the M&E and Chemicals sectors, though, in the case of UK firms, these were more than outweighed by job losses.

The figures are quite different for firms from continental European countries. German firms have the highest job gains in the M&E sector (around 75 %) and also a relatively high number of job gains in the Chemicals sector. Also, the *A* measure shows that the gains relative to base employment in 1975 is relatively high especially in the M&E sectors, which indicates a high rate of job creation above the base employment in 1975. While the figures suggest that German-owned firms have invested relatively strongly in the sectors which proxy *high-tech*, they also show that these sectors accounted for some of the highest job losses in German firms in Ireland. Nonetheless, the *B* ratio is still positive, i.e., the gross gains have translated into net gains. These results remind us that these sectors are not only innovative growth sectors, but also relatively risky sectors. It also points to the danger of having policies which are aimed only at generating new jobs without reference to the sustainability of those jobs.

In the case of firms stemming from other continental European countries, we can also see that the bulk of job gains accrued in the M&E and Chemicals sectors, although considerable job losses are recorded in these sectors as well. Note that the Chemicals sector has the highest *B* ratio for other European firms, i.e., the gross job gains translated into the highest net job gains in this sector.

Overall, the empirical analysis suggests that the investment incentives offered in Ireland appear to have led to significant gross job gains in the targeted *high-tech* sectors, as proxied here by the M&E and Chemicals sectors. However, these gross gains have not necessarily translated into net gains of anything like the same magnitude. This result might be misleading due to the high level of sectoral aggregation used; a further sectoral dis-aggregation might indicate that the job gains were in different sub-sectors to the job losses. For example, it may be the case that job gains occurred in the electronics and pharmaceuticals sub-sectors of M&E and Chemicals respectively, while the job losses may have occurred in the more traditional sub-sectors, such as mechanical engineering or basic industrial chemicals. Unfortunately, the data here do not allow us to analyse this issue.

Section V: Current Concerns

Ireland's recent success in winning large-scale FDI projects from the US has led to renewed concern in some quarters that the country is becoming too dependent on FDI. The fact that indigenous companies appear to be prospering at present with increasing employment and profits rates has reduced concerns about 'crowding out', so that the attitude to FDI is not hostile in any way but simply marks a concern with dependency per se - the "what would happen if FDI globally declined" scenario. Of perhaps more significant concern is the dependency on the US market, as the portfolio of investment sources has concentrated dramatically over the years. That concern is somewhat

counteracted by recognition of the real attractiveness of Ireland as a base for US investment in Europe and the scale and dynamism of the US economy at present.

As noted above, Ireland was well ahead of the field in introducing incentives to encourage FDI in the 1950s and 1960s. Now governments throughout the world, and of particular relevance to Ireland, EU governments are promoting FDI projects by means of a range of incentives, typically offered by agencies at sub-national levels.[18] Thus the relative impact of Ireland's incentives has been eroded over the past decade. Although hitherto there is not much evidence of direct competition from Eastern Europe, where foreign direct investment appears to be going more into existing commercial activities rather than into new projects, one can expect that this situation is unlikely to continue as existing opportunities get taken up and as EU membership becomes a reality for these countries. The implications of these developments have been recognised in Ireland (Forfás, 1996), reinforcing the search for projects which build on comparative national advantage as well as lower basic wage costs and fiscal and financial incentives.

It also seems inevitable that the increasing use of incentives to attract FDI projects across EU countries will soon receive more attention from the European Commission - at present only minimal attention is paid to it in connection with Article 92 of the Treaty of Rome. In this context, another problem in the future may be the possible loss of Ireland's status of a less-favoured region within the EU. Furthermore, clarification of the future of the 10 % corporate tax rate, due to terminate in 2010, is now essential - in industrial policy terms Ireland has benefited enormously from having a stable investment environment in the past.

[18] Arguably for larger countries the sub-national level is the appropriate level for such intervention though it generates the possibility that one region in an economy is bidding for a project against another region. This phenomenon is already apparent in the EU.

Table 1: Significance of foreign firms for the Irish Economy, 1993

	Net Output		Employment		Exports as percentage of output	
Sector	Sectors as % of Total	Foreign as % of Total	Sectors as % of Total	Foreign as % of Total	Irish-owned firms	Foreign-owned firms
Food, Drink & Tobacco	27.6%	52.5%	23.2%	29.0%	38.5%	72.4%
Textiles	1.7%	63.5%	5.0%	61.8%	46.2%	93.0%
Clothing & Footwear	1.5%	37.2%	5.6%	26.0%	46.4%	89.9%
Timber & Furniture	0.8%	24.0%	4.4%	4.3%	16.1%*	93.2%*
Paper & Printing	11.7%	60.8%	6.8%	12.6%		
Chemicals	22.7%	94.3%	8.3%	78.9%	26.2%	96.3%
Non-metallic Minerals	3.0%	15.7%	5.0%	24.0%	20.0%	66.9%
Metals & Engineering	25.7%	78.3%	36.1%	62.5%	48.6%	86.6%
of which:						
- Electric & Electronic	12.8%	*92.2%*			*49.8%*	*88.2%*
- Instruments	4.8%	*90.0%*			*80.0%*	*94.4%*
- Transport Equipment	1.8%	*30.6%*			*36.3%*	*95.2%*
- Other	6.4%	*54.8%*			*36.1%*	*91.1%*
Miscellaneous	5.2%	56.8%	5.8%	37.1%	34.2%	74.6%
Total Manufacturing	100.0%	68.4%	100.0%	44.7%	35.2%	87.7%

Note: * export ratio is for sectors 'timber and furniture' and 'paper and printing' combined

Source: Own estimations based on preliminary data on output and exports from the Central Statistics Office and on employment data from the *Forfás Employment Survey*

Table 2: Total Employment by nationality, 1975-1995

Nationality	1975		1995		change 1975-95
	absolute	in % of Total	absolute	in % of Total	
Ireland	143387	65.7%	116273	55.1%	-18.9%
UK	29669	13.6%	12260	5.8%	-58.7%
Germany	6074	2.8%	9700	4.6%	59.7%
Other European	17776	8.1%	13929	6.6%	-21.6%
US	18418	8.4%	51615	24.4%	180.2%
Other non-European	2997	1.4%	7395	3.5%	146.7%
Total Foreign	74934	34.3%	94899	44.9%	26.6%
Total	218321	100.0%	211172	100.0%	-3.3%

Source: Own estimations based on data from the *Forfás Employment Survey.*

Table 3: Sectoral breakdown of employment by nationality, 1975-1995

Sector	1975						1995					
Nationality	UK		Germany		other European		UK		Germany		other European	
Food	4,932	16.6%	34	0.6%	4,108	23.1%	3,262	26.6%	386	4.0%	1,868	13.4%
Drink & Tobacco	5,862	19.8%	0	0.0%	1,208	6.8%	2,759	22.5%	56	0.6%	803	5.8%
Textiles	2,986	10.1%	201	3.3%	1,206	6.8%	831	6.8%	219	2.3%	957	6.9%
Clothing & Footwear	3,971	13.4%	533	8.8%	806	4.5%	731	6.0%	79	0.8%	956	6.9%
Timber & Furniture	135	0.5%	308	5.1%	0	0.0%	0	0.0%	0	0.0%	201	1.4%
Paper & Printing	820	2.8%	108	1.8%	319	1.8%	386	3.1%	63	0.6%	83	0.6%
Chemicals	2,201	7.4%	647	10.7%	1,941	10.9%	1,651	13.5%	824	8.5%	2,839	20.4%
Non-metallic minerals	2,032	6.8%	422	6.9%	506	2.8%	762	6.2%	75	0.8%	290	2.1%
Metals & Engineering	4,525	15.3%	3,620	59.6%	6,801	38.3%	1,330	10.8%	7,670	79.1%	4,522	32.5%
Miscellaneous	2,205	7.4%	201	3.3%	881	5.0%	548	4.5%	328	3.4%	1,410	10.1%
Total	29,669	100.0%	6,074	100.0%	17,776	100.0%	12,260	100.0%	9,700	100.0%	13,929	100.0%

Source: Own estimations based on data from the *Forfás Employment Survey.*

Table 4: Job gains and losses by nationality and sector, 1975-1995

Nationality	UK			Germany			other European		
Sector	Gains	Losses	Net	Gains	Losses	Net	Gains	Losses	Net
Food	3226	-4896	-1670	609	-257	352	2774	-5014	-2240
Drink & Tobacco	1489	-4592	-3103	64	-8	56	873	-1278	-405
Textiles	1712	-3867	-2155	444	-426	18	2294	-2543	-249
Clothing & Footwear	3212	-6452	-3240	873	-1327	-454	2718	-2568	150
Timber & Furniture	117	-252	-135	198	-506	-308	287	-86	201
Paper & Printing	515	-949	-434	152	-197	-45	166	-402	-236
Chemicals	1921	-2471	-550	901	-724	177	3662	-2764	898
Non-metallic minerals	1022	-2292	-1270	237	-584	-347	235	-451	-216
Metals & Engineering	4366	-7561	-3195	12096	-8,046	4050	8772	-11051	-2279
Miscellaneous	1159	-2816	-1657	623	-496	127	2245	-1716	529
Total	18739	-36148	-17409	16197	-12571	3626	24026	-27873	-3847

Source: Own estimations based on data from the *Forfás Employment Survey.*

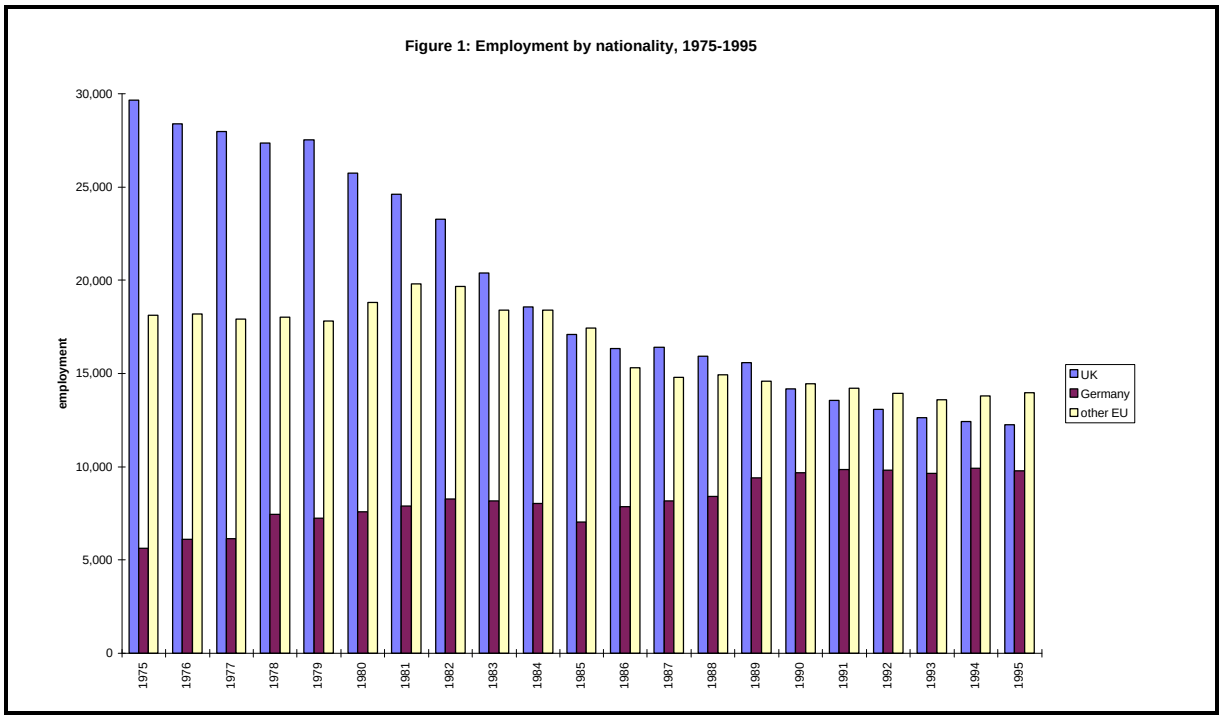
Table 5: Employment indicators by nationality and sector, 1975-1995

	A ratio			*B ratio*		
Nationality Sector	UK	Germany	other European	UK	Germany	other European
Food	0.65	17.91	0.68	-0.52	0.58	-0.81
Drink & Tobacco	0.25	0.00	0.72	-2.08	0.88	-0.46
Textiles	0.57	2.21	1.90	-1.26	0.04	-0.11
Clothing & Footwear	0.81	1.64	3.37	-1.01	-0.52	0.06
Timber & Furniture	0.87	0.64	0.00	-1.15	-1.56	0.70
Paper & Printing	0.63	1.41	0.52	-0.84	-0.30	-1.42
Chemicals	0.87	1.39	1.89	-0.29	0.20	0.25
Non-metallic minerals	0.50	0.56	0.46	-1.24	-1.46	-0.92
Metals & Engineering	0.96	3.34	1.29	-0.73	0.33	-0.26
Miscellaneous	0.53	3.10	2.55	-1.43	0.20	0.24
Total	0.63	2.67	1.35	-0.93	0.22	-0.16

Note: The very high value of *A* in the sector food is due to the fact that in 1975 German firms in the food sector accounted for only 34 jobs.

Source: Own estimations based on data from the *Forfás Employment Survey.*

Fig. 1: Employment by nationality, 1975-1995



Source: Own estimations based on data from the *Forfás Employment Survey.*

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