

Some Aspects of Foreign Private Investment in the Manufacturing Sector of the Economy of the Irish Republic

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ATTENTION has recently been drawn to the influx of foreign capital into the Republic of Ireland and to the importance of Foreign Private Investment (FPI) in the development of the Irish economy. The following article attempts to examine several consequences of this inflow. The first section briefly reviews Irish economic policy and estimates the extent of recent Foreign Private Investment. The importance of foreign investment for the economy is assessed in section two. In the third section, the hypothesis that the FPI has led to a dualistic structure in Irish industry is tested. Section four extends this by looking at the proportion of the output of foreign firms which remains in Ireland after first round payments ("Retained Value"). The conclusion reviews the development policy of Ireland in the light of the foregoing analysis.

Section 1: Irish Economic Policy and the Inflow of Foreign Private Investment

The major problem facing Irish policy makers has been chronic unemployment and emigration. Balance of payments difficulties and a severe regional imbalance have curtailed freedom of manoeuvre in searching for a solution. Up to the late 'fifties policy concentrated on import substitution in the hope of developing an infant manufacturing sector behind tariff walls. Ownership of this industrial

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activity was to be confined to Irishmen—though the Control of Manufactures Acts of the early 'thirties, designed to achieve this end, were never fully effective.

Disillusionment with this policy resulted when the nascent industrial sector failed to absorb the flow of labour from agriculture. Table I shows the increase in emigration in the decade 1951-61.

TABLE I: *Average annual rates of change of population and net emigration per 1,000 of average population 1946-1951*

| <i>Intercensal period</i> | <i>Change in population</i> | <i>Natural increase</i> | <i>Net emigration</i> |
|---------------------------|-----------------------------|-------------------------|-----------------------|
| 1946-51 | +0.4 | 8.6 | 8.2 |
| 1951-56 | -4.3 | 9.2 | 13.4 |
| 1956-61 | -5.6 | 9.2 | 14.8 |
| 1961-66 | +4.6 | 10.3 | 5.7 |
| 1966-71 | +5.9 | 10.1 | 4.2 |

Source: Regional Industrial Plans 1973-77 Part I. Dublin, Industrial Development Authority, 1972.

In addition, the rate of growth slowed down, balance of payments problems became serious and an uneven, inefficient pattern of industrialisation resulted. As the costs of import substitution rose, attention was diverted to an alternative development strategy based on the liberalisation of trade.

Consequently, a series of radical changes in development policy were instigated in the 'fifties. Capital grants for new industries and extensions of existing production facilities were introduced for "Underdeveloped Areas"* and in 1956 the scheme was extended to the whole country. In the same year tax relief on export profits was introduced. The need for export orientated growth and the desirability of attracting foreign capital into the export sector were expressed in the Programme for Economic Expansion (1958).¹¹ No distinction was (or is) made between foreign owned and domestic firms in grant aid or export tax relief provisions. With the establishment of Shannon Free Airport Development Company and the setting up of Industrial Development Authority (IDA) offices overseas the policy of attracting foreign capital became more vigorous. The policy trend begun in these years has culminated in the entry of Ireland into the European Economic Community, the widespread reduction in barriers to trade and the battery of incentives for industry available today, designed largely to attract FPI. The mainspring of development policy now is the encouragement of export orientated growth, with FPI seen as an essential input into the exporting sector.

A large and increasing flow of foreign capital into the manufacturing sector of the Irish economy since the late 1950s has been the result of the incentive scheme,

*Later "Designated Areas."

TABLE 2: *Estimated foreign private investment in manufacturing 1955-1970 (grant-aided projects only)*

| Year | 1 Total investment in foreign enterprises £000s | 2 Fixed capital formation in foreign enterprises £000s | 3 Gross fixed capital formation in Ireland £000s | 4 Foreign firms' contribution to GFCF (2 as per cent of 3) |
|----------------------|----------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------|
| 1955 | 171 | 128 | 92,400 | — |
| 1956 | 82 | 62 | 91,800 | — |
| 1957 | 1,800 | 1,350 | 80,100 | 2 |
| 1958 | 1,677 | 1,258 | 80,300 | 2 |
| 1959 | 2,662 | 1,997 | 82,900 | 2 |
| 1960 | 5,072 | 3,804 | 89,700 | 4 |
| 1961 | 3,694 | 2,771 | 108,800 | 3 |
| 1962 | 3,636 | 2,727 | 129,000 | 2 |
| 1963 | 5,337 | 4,003 | 147,700 | 3 |
| 1964 | 2,985 | 2,239 | 173,300 | 1 |
| 1965 | 10,135 | 7,601 | 197,900 | 4 |
| 1966 | 7,806 | 5,855 | 197,100 | 3 |
| 1967 | 9,869 | 7,402 | 217,600 | 3 |
| 1968 | 23,884 | 17,918 | 251,000 | 7 |
| 1969 | 29,066 | 21,800 | 329,000 | 7 |
| 1970 | 36,424 | 27,318 | 353,000 | 8 |
| <i>Total 1966-70</i> | 137,908 | | | |
| <i>Total</i> | 144,300 | 107,333 | | |

Source: Columns 1 and 2 calculated from IDA data collected by Mr. John Teeling which with IDA permission he passed on to the author, column 3: *OECD Economic Survey—Ireland (Annual)* various issues.

Notes to Table 2. The data used for column 1 are projections of total investment by the foreign firm and the proposed grant. *Actual* investment in each year was calculated according to the proportion of total approved grant actually paid. (Actual grant payments are available in Annual Reports on An Foras Tionscal and the IDA back to 1956). Thus if a grant of £50,000 was approved for a project and £25,000 paid in 1960, then half the projected total investment for the project is attributed to that year. Columns 1 and 2 include reinvestment as far as this is reflected in extension projects but excludes reinvestment other than this. To the extent that foreign firms extend capacity without attempting to obtain grant aid, column 1 is an underestimate. Column 2 is derived by reducing column 1 by 25 per cent following McAleese's suggestion that such a figure represents the proportion of working capital in total investment. This proportion is based on IDA information.^[2]

McAleese estimates total FPI in the period 1960-70 to be £136.6 million (£122 million IDA plus £14.1 million at Shannon). For the same period the present author's estimates give £137.91 millions. The omission of non grant-aided foreign investment may substantially affect the figures in the earlier years covered but this type of investment has declined rapidly since free trade policies destroyed its *raison d'être*—the servicing of the Irish market.^[3]

combined with the foreign firm's need for cheaper labour and access to new markets. Table 2 shows the total investment under the control of foreign firms was over £144 millions in the years 1955-70. The financing of a considerable proportion of this investment from Irish sources (Irish debt, equity participation and grant aid) means that this figure is considerably greater than the inflow of foreign capital for the purpose of FPI in manufacturing. Fixed capital formation in foreign enterprises clearly represents an increasing proportion of Gross Domestic Fixed Capital Formation, reaching 8 per cent of this aggregate in 1970.

Section 2: *The Importance of the Foreign Owned Grant-Aided Sector of the Irish Economy*

The importance of the foreign owned grant-aided sector is best considered by examining several key magnitudes; its contribution to output and exports, to employment creation, its effect upon the economic structure and its impact on industrialisation and growth.

Estimates of the contribution of foreign grant-aided firms to transportable goods output and to exports in 1970 are presented in Table 3. Column 2 of this table is derived by utilising the results of a survey of grant-aided firms conducted by An Foras Forbartha (AFF).^[4] This survey gives the actual output and exports of 277 foreign owned firms. From the AFF data and the IDA projections of the performance of individual firms, a coefficient is then applied to the projections of firms in the same industry not covered by the AFF sample. Thus estimates of output and exports for all foreign firms are found for 1970.

The IDA estimates that 76 per cent of grant-aided investment has come from foreign firms.^[5] The importance of this productive investment in terms of the

TABLE 3: *The foreign owned grant-aided sector of Irish industry (1970)*

| Item | 1 | 2 | 3 |
|----------------------------------------------------|------------------------|-------------------------------------------|-----------------------------------------|
| | All Firms £ million | Foreign grant aided firms £ million | Foreign per cent of total (2),(1) |
| 1. Output of the transportable goods industry | 1,137.5 | 150.7 | 13.3 |
| 2. Transportable goods output minus food and drink | 767.9 | 132.6 | 17.4 |
| 3. Total Exports | 416.4 | 122.7 | 29.5 |
| 4. Exports excluding food, drink and tobacco | 223.3 | 102.8 | 46.1 |

Source: Column 1, lines 1 and 2: *Review of 1971 and Outlook for 1972*, Prl. 2357, Dublin, Stationery Office. Column 1, lines 3 and 4: *External Trade Statistics 1970* Central Statistics Office (CSO) Dublin, Prl. 2012. Column 2, Authors estimates from IDA data and AFF survey.

annual output generated is illustrated by the fact that over 13 per cent of total transportable goods output originates in foreign firms. This proportion is increasing over time—Table 2 illustrates the increasing momentum of the inflow of capital and many of the firms now in production have not yet reached their full potential output.

Rows 3 and 4 give the first indication of the importance of foreign firms in the Irish export drive. Almost one-third of total Irish exports are from foreign-owned firms—this rises to 46 per cent when food, drink and tobacco exports are excluded. The difference in the proportions of output and exports controlled by the foreign-owned sector shows the commitment to exporting of the foreign firms. Their contribution to the Irish balance of payments is thus partially established in that both the capital inflow and exports connected to foreign firms are positive terms. A further (negative) term—the import propensity of the firms, is considered below.

Correction of the balance of payments deficit has been one aim of Irish policy,* but the major aim has been the creation of employment. Table 4 shows the contribution of foreign grant-aided firms to this end. The table gives employment in all new industry projects, both Irish and foreign-owned. However, over 80 per cent of these jobs are in foreign projects. Job creation by foreign firms is thus over 39,000. This represents a considerable policy achievement.

TABLE 4: *Employment in new industry projects (new firms and major expansions)*

| <i>Date</i> | <i>Numbers actually employed</i> |
|-------------|----------------------------------|
| 31/3/1967 | 16,100 |
| 31/3/1971 | 38,100 |
| 31/3/1972 | 44,800 |
| 31/3/1972† | 48,400 |

†Including employment at Shannon Free Airport.

Source: IDA: *Annual Report 1971-72*.

The inflow of FPI has altered the sectoral composition of the Irish economy. The distribution of foreign projects by sector is shown in Table 5 (all “live” projects in December 1971 are included). How far the theory of direct investment can explain this distribution is a question of some interest.

Two distinct types of foreign investment are distinguished by received theory: (1) “vertical” investment where control of raw material supplies or some other crucial input is the motivating factor (2) “horizontal” investment where the

*A balance of payments position which needs correction may be defined as a situation where autonomous external payments exceed autonomous receipts such that changes are forced in either (i) the overall reserve position, (ii) the exchange rate or (iii) domestic prices and incomes.

investing firm produces a similar line of goods as it does in its home market.^[6] The latter form of investment has received its most rewarding treatment within the theory of industrial organisation and market structure.^[7] Two sets of factors are crucial in the analysis of horizontal direct investment: the oligopolistic advantages of the foreign investor and the existence of barriers to other sources (or potential sources) capable of servicing the particular markets of the foreign investor.

The particular "advantage" possessed may be in the form of access to better knowledge, easier access to factor inputs and/or markets or economies of scale and integration.^[8] The advantage must be of such a nature that it can best be exploited by local production. A large market is important in explaining this type of FPI because it gives an opportunity to obtain a large return on the advantage and decreases the risks inherent in local production. In the case of Ireland, unusually, the market serviced from FPI is not the domestic market, but, in the main, the neighbouring markets of the UK and now the EEC.

The case for exploiting the advantage by FPI is strengthened where there are conditions which increase the costs of servicing the market by exports (tariff barriers and transport cost disadvantages) and where the foreign firm can take advantage of cost-reducing factors (such as cheaper labour in the host than in the source country and incentive programmes for foreign investment in the host country).

The advantage possessed by the foreign investor represents a barrier to entry to potential competitors. Proprietary technology—technology which is owned or effectively controlled by a particular firm^[9]—is of great importance here. Such technology is available at a price equivalent to marginal costs within the international firm but potential competitors face acquisition costs. Product differentiation, which is a feature of oligopolistic market structures, also presents a barrier to new entrants. Finally, in the Irish case there are inherent deficiencies in the domestic sector, such as the lack of entrepreneurial ability and the small domestic market, which prevent local firms from challenging the dominance of the foreign investor.

Table 5 shows that vertical FPI has occurred in Ireland in those sectors where an abundant supply of raw materials exists:—mineral extraction (consideration of which is excluded from this paper) and the food sector, particularly milk-based products. The horizontal investment that has taken place is chiefly aimed at servicing the UK and EEC markets.^[10] The investment is orientated towards high growth sectors (the IDA selection procedure has helped to ensure this) and has changed the industrial composition of the economy towards technology—intensive production. The internal growth of the foreign sector has been rapid and is assured for the near future. Foreign firms have been shown, in other countries, to be more efficient than their domestic competitors^[11] and the indications are that this is also the case for Ireland.^[12] The remainder of the paper considers the extent to which the foreign-owned sector is integrated with domestic industry.

TABLE 5: *The sectoral distribution of foreign owned projects (December 1971)*

| <i>Sector and Irish CIP Classification</i> | 1 <i>Number of foreign grant- aided Projects</i> | 2 <i>Percentage distribution of firms</i> |
|-------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|
| 1. Food and drink (03, 07, 10-13, 16) | 44 | 11.1 |
| 2. Textiles and apparel (18-22) | 94 | 23.7 |
| 3. Metals, engineering, electrical (35-41) including: | 123 | 31.1 |
| electronics and communication equipment | 22 | |
| instruments and precision goods | 22 | |
| special and general industrial machinery | 12 | |
| office and computing machinery | 8 | |
| 4. Plastics (including synthetics) (44) | 45 | 11.4 |
| 5. Chemicals and drugs (31) | 25 | 6.3 |
| including pharmaceuticals | 11 | |
| 6. Other | 65 | 16.4 |
| <i>Total foreign projects</i> | 471 | 100.0 |

Source: Author's calculations from IDA data.

NB: The tabulation is of *projects* not firms and so extensions are included as separate units.

Section 3: *Has Foreign Investment led to a Dualistic Structure in Irish Industry?*

Economic dualism may be defined, following Myint, as the continuing co-existence of a "modern" sector and a "traditional" sector within the domestic economic framework.^[13] Myint interprets dualism as a manifestation of distortion in the allocation of resources arising from the unequal terms on which economic resources (such as capital, foreign exchange and public economic services) are available to the two sectors. One particular form of dualism, that existing between the foreign-owned manufacturing sector and the domestic sector, has been identified by Hans Singer.^[14] Singer suggested that the contribution of FPI to the host country will be minimal unless the foreign sector is absorbed fully into the domestic economy. The extent of absorption is to be judged by the strength of the linkage effects created by the foreign sector. Where dualism is evident, the secondary effects are transferred by the modern sector to the *investing country* rather than benefiting the host economy.

In view of the importance of the foreign-owned sector to the Irish economy, an analysis of the above aspects of dualism is imperative. Attention has already been drawn to the marked differences in exporting behaviour between foreign owned and domestic industry. The change of policy from protection to freer trade together with encouragement of FPI meant that a new outward-looking form of

economic activity was grafted onto the older industries which relied on the continuing protection of the home market. This new division cut across industry differences and has been described by McAleese as intra-industry dualism.^[15] The present section extends this analysis of dualism by considering import propensities and other linkage effects in addition to export behaviour.

The data in this section of the paper are taken from the An Foras Forbartha survey of grant-aided industry conducted by Padraig Ó hUiginn.^[16] All analysis and comments refer to that sample alone, though it is reasonable to suggest that the results are typical of the population from which they are drawn. The sample covers 377 firms, of which 276 (73 per cent) were foreign owned:—joint ventures were allocated on the basis of majority (51 per cent) ownership.

Several preliminary points should be noted concerning the foreign-owned group. The group exhibits a wide range of organisational structures. The Irish unit may be a wholly-owned subsidiary of a multinational company, a more loosely-controlled offshoot of a foreign firm, a joint venture or an autonomous investment owned by a group of foreign firms or individuals.

The AFF survey investigated the number of functions which other units of the organisation performed for the Irish unit. It was found, in many cases, that the Irish unit did not perform a full range of functions (for instance, 61 per cent of firms carried out research and development abroad). The investigation lent support to Hymer's hypothesis that the international firm centralises the "higher order activities" (those requiring specialised capital and skilled labour inputs) and disperses less crucial activities.^[17] The social consequences are serious—for the extension of this practice can leave a host country denuded of high level activities and therefore of skilled manpower. This situation has not yet come to pass because of the loosely organised nature of some corporations and the existence of near autonomous foreign investments. There are signs that this phenomenon will become a policy issue in the future and preventive measures have already been taken by the IDA (for example, the establishment of the Research Park at Naas). However, there are strong forces within the multinational firm making for the centralisation of high level activities which policy measures will have difficulty in counteracting.

These factors within the group of foreign-owned firms present a background to the analysis of dualism. The first stage of the analysis is to present the results of foreign and domestic firms as regards (1) the proportion of output which is exported (2) the proportion of material inputs purchased from Irish sources and (3) the proportion of service inputs purchased from Irish sources.

(1) Table 6 shows a clear difference in exporting behaviour between the foreign and Irish firms in the sample. Foreign firms are concentrated in the two highest export categories (over 90 per cent exported). Irish firms are dispersed over the whole spectrum, but the mode of the Irish distribution occurs in the 100 per cent import substitution category. This obvious difference in behaviour is confirmed by a chi-square test.^[18]

TABLE 6: *Classification of Irish and foreign grant-aided firms by the proportion of total output which is exported*

| 1 | 2 | 3 | 4 |
|------------------------------------------------|---------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <i>Percentage of total output exported</i> | <i>Number of foreign firms in class</i> | <i>Number of Irish firms in class</i> | <i>Percentage of each class represented by foreign firms</i> $\left(\frac{2}{2+3}\right) \times 100$ |
| 0 | 19 | 25 | 43 |
| 1-9 | 12 | 6 | 66 |
| 10-19 | 14 | 8 | 64 |
| 20-29 | 11 | 6 | 65 |
| 30-39 | 8 | 6 | 57 |
| 40-49 | 3 | 7 | 30 |
| 50-59 | 8 | 4 | 66 |
| 60-69 | 10 | 3 | 77 |
| 70-79 | 9 | 6 | 60 |
| 80-89 | 12 | 9 | 57 |
| 90-99 | 70 | 11 | 86 |
| 100 | 100 | 9 | 92 |
| Unclassified | — | 1 | — |
| <i>Total</i> | 276 | 101 | 73 |

Source: Author's calculation from AFF survey.

(2) Table 7 classifies the firms according to the percentage of material inputs which they obtain from Irish sources. It is evident from the table that foreign firms purchase their material inputs preponderantly from abroad—more than 76 per cent of foreign firms purchase less than 50 per cent of their material input requirements from Irish sources. Again the difference in behaviour is obvious and this is confirmed by a chi-square test.^[19]

TABLE 7: *Classification of foreign and Irish firms by the proportion of material inputs obtained from Irish sources*

| 1 | 2 | 3 | 4 |
|------------------------------------------------------------------|---------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|
| Percentage of total material inputs purchased from Irish sources | Number of foreign firms in each class | Number of Irish firms in class | Percentage of each class represented by foreign firms $\left(\frac{2}{2+3}\right) \times 100$ |
| 0 | 48 | 3 | 94 |
| 1-9 | 41 | 10 | 80 |
| 10-19 | 50 | 7 | 88 |
| 20-29 | 39 | 9 | 81 |
| 30-39 | 16 | 2 | 89 |
| 40-49 | 8 | 1 | 89 |
| 50-59 | 10 | 8 | 56 |
| 60-69 | 5 | 3 | 63 |
| 70-79 | 8 | 5 | 61 |
| 80-89 | 9 | 5 | 64 |
| 90-99 | 22 | 14 | 61 |
| 100 | 20 | 33 | 38 |
| Unclassified | — | 1 | — |
| Total | 276 | 101 | 73 |

• Source: Author's calculation from AFF survey.

(3) The evidence on the propensity of the two groups to import service inputs such as maintenance, accounts, repairs is shown in Table 8. Little difference in the proportion is apparent from the table and chi-square testing confirms this belief.^[20]

However, it has been shown above that some of the functions which may be included in service inputs (R & D, purchasing marketing) are not performed in Ireland at all by some subsidiaries. Further, the firms may not consider the use of their parent's knowledge on these issues as "importing services" (often no payment is made).^[21] It would be unwise to rely on the ostensible conclusion that there is no difference in service input purchasing behaviour because of the different nature of foreign firms in terms of the range of functions performed.

It may be suggested that the differences in exporting and input purchasing behaviour are due to (1) the difference in the industrial mix of the two groups (2) differences in firm size (3) inherent differences due to foreignness *per se* (a dualistic division). These possibilities are now examined.

TABLE 8: Classification of foreign and Irish firms by the proportion of service inputs obtained from Irish sources

| 1 | 2 | 3 | 4 |
|----------------------------------------------------------------|----------------------------------|--------------------------------|-------------------------------------------------------|
| Percentage of total service inputs obtained from Irish sources | Number of foreign firms in class | Number of Irish firms in class | Percentage of each class represented by foreign firms |
| | | | $\left(\frac{2}{2+3}\right) \times 100$ |
| 0 | 2 | 4 | 33 |
| 1-9 | 1 | — | 100 |
| 10-19 | 4 | 1 | 80 |
| 20-29 | 4 | 3 | 57 |
| 30-39 | 3 | 3 | 50 |
| 40-49 | — | 1 | — |
| 50-59 | 14 | 0 | 100 |
| 60-69 | 5 | 4 | 56 |
| 70-79 | 15 | 4 | 79 |
| 80-89 | 23 | 5 | 82 |
| 90-99 | 61 | 21 | 74 |
| 100 | 144 | 54 | 73 |
| Unclassified | — | 1 | — |
| Total | 276 | 101 | 73 |

Source: Author's calculation from AFF survey.

The influence of the industrial mix

(a) Exports. The industrial distribution of the sample is shown in Table 9. Four major sectors are identified, covering 274 firms in the sample.

TABLE 9: AFF Sample; number of firms in four major sectors

| Sector | Number of foreign firms | Number of Irish firms |
|--------------------------------------------|-------------------------|-----------------------|
| 1. Food and drink (03, 07, 10-13, 16) | 36 | 33 |
| 2. Textiles and clothing (18-22) | 59 | 28 |
| 3. Metals, engineering, electrical (35-41) | 89 | 8 |
| 4. Plastics (44) | 21 | 4 |
| Total (four sector) | 205 | 73 |

A consideration of exporting behaviour in these (rather broad) industrial groupings shows that foreign firms export a greater proportion of output than Irish firms within each grouping. (Table 10). It is also apparent that the exporting performance of *Irish* grant-aided firms is superior to that of Irish industry in general.

TABLE 10: *Sectoral exporting performance*

| Sector | AFF Sample. | | 3. Total exports of Sector ÷ total output of Sector 1970 |
|--------------------------------------------------|------------------|----------------|----------------------------------------------------------------|
| | 1. Foreign firms | 2. Irish firms | |
| 1. Food and drink | 79.0 | 56.2 | 31.0 |
| 2. Textiles and clothing | 74.0 | 53.7 | 28.4 |
| 3. Metal engineering electrical | 78.5 | 48.8 | 21.6 |
| 4. Plastics | 62.9 | 16.8 | 40.9* |
| Four sector average | 76.4 | 51.6 | 29.6 |
| "Adjusted" export proportion of foreign firms | 48.0 | | |

Source: Columns 1 and 2 AFF data. Column 3 External Trade Statistics 1970.

*Figure for Miscellaneous Manufacturing.

A technique which can be used to separate out the influence of sectoral composition on the overall average proportion of exports is "shift and share analysis".^[22] The overall disparity in the proportion of output exported between groups is 24.8 per cent. This is divided into two parts by using the "adjusted export percentage" of foreign firms. The adjusted figure shows the proportion of output which foreign firms would have exported if their export results had been equal to those of the Irish firms within the same sector. The adjusted figure is calculated to be 48.0 per cent. Now the "intra-sectoral effect", caused by the superior exporting performance within each sector is shown by the difference between the actual and the adjusted foreign export percentages. The intra-sectoral effect accounts for a difference of 28.4 per cent (78.4 minus 48.0). The inter industry figure appears as a negative factor of 3.6 per cent. This result means that if foreign firms had the same industrial composition as the Irish group, then the foreign firm's average export proportion would *increase* by 3.6 per cent. This phenomenon is explicable by examination of Tables 9 and 10 in conjunction. The Irish firms in the sample are almost entirely concentrated in sectors 1 and 2 which have above average export ratios. Almost half of the total Irish firms are in the food and drink sector which has the highest export proportion for both groups of firms. The group with the lowest export proportion, plastics, is hardly represented at all in the Irish group.

Aside from the use of the broad industrial groups and the factor of size, both of which are considered below, there are three sets of factors which help to account for the difference in behaviour within industries.

(1) The provision that foreign firms in receipt of grant aid must be non-competitive with existing Irish firms on the domestic market. Export orientated firms are therefore attracted and are rewarded with exemption from taxation on export profits.

(2) The foreign-owned firms have close contact with their home market. They have access to better information, sales and marketing facilities than do Irish firms. Foreign firms also may be more efficient and are geared to the production of "export products".

(3) The small size of the Irish market in conjunction with past Irish policy is also a factor. Under the protectionist regime of Irish economic policy which ran from the middle 1930s until the 1960s, Irish firms became geared to supplying the home market behind high tariff walls. Consequently, they were unable to take immediate advantage of the free trade policies and export advantages that now prevail. The process of re-orientation of production towards export markets is a gradual and difficult one. The performance of Irish firms must be seen in this historical context. Foreign firms are not bound by the constraints of such a background.

(b) *Import propensity.* A similar procedure can be adopted to investigate the effect of sectoral differences on the purchase of Irish inputs. Table II presents the evidence on the sectoral breakdown of imported input proportions.

Only in the food and drink sector do foreign firms purchase most of their material input needs from Irish sources. The cheap and plentiful supplies of

TABLE II: *Percentage of total material inputs purchased from Irish sources*

| Sector | Average percentage of total material inputs purchased from Irish sources | |
|----------------------------------------------------------------|--------------------------------------------------------------------------|-------------|
| | 1 | 2 |
| | Foreign firms | Irish firms |
| 1. Food and drink | 82.1 | 85.0 |
| 2. Textiles and clothing | 24.6 | 49.9 |
| 3. Metals engineering electrical | 23.4 | 38.8 |
| 4. Plastics | 13.1 | 6.8 |
| Four sector average | 31.5 | 68.3 |
| Adjusted average percentage Irish inputs used by foreign firms | 46.1 | |

Source: Author's calculations from AFF survey.

Irish agricultural produce explain this high figure. Indeed, the availability of Irish inputs is often the *raison d'être* of foreign investment in this sector. However, in the technology intensive fields of activity, where foreign firms are concentrated, they depend mainly on imported inputs. This difference in behaviour is not surprising. Foreign-owned firms are prone to rely on their parent firms for the supply of sophisticated materials and components which may not be available from Irish sources. In fact, an often cited reason for the efficient performance of foreign firms relative to domestic rivals is their access to better quality inputs and technical know-how. Such inputs are available duty free to exporting firms. The firms' import bill will also tend to be raised by knowledge of traditional suppliers and goodwill towards them. Fifty-five firms in the sample perform the purchasing function abroad. This situation is compounded by quality and price differentials between imported and Irish inputs. The survey of Grant-Aided Industry (1966) noted complaints by foreign firms on slowness of delivery of inputs from Irish sources and there appears to have been a reluctance amongst Irish firms to seek out business from new foreign enterprises. (Metric standard requirements, scale factors and different modes of operating may here be influences).*

The effects of sectoral distribution are separated by the calculation of an "adjusted import coefficient" for foreign firms which works out to be 46.1 per cent. The difference between the observed amount of Irish inputs purchased and this adjusted figure measures the inter-sectoral effect. (22.8 per cent of the overall difference). The remainder of 14.6 per cent accounts for the intra-sectoral effects.

It can be deduced from the above procedure that the shortfall in the proportion of domestic material inputs purchased by foreign firms is due not only to differences in the industrial mix of the two groups but also arises from the different nature of foreign firms within the same sector. Myint's view that a fundamental cause of dualism is the fact that the two groups have unequal access to economic resources thus achieves some plausibility in the Irish context. Specialised, high quality inputs embodying patented knowledge or technical know-how are available to foreign subsidiaries from other branches of the firm. Inputs may be available at discretionary prices below ruling world prices, so as to make the maximum amount of profit in tax free Ireland. Exporting firms are allowed duty free inputs and this adds a further wedge to the discrepancy in input prices faced by the two groups.

The effect of the different industrial mix of the two groups can be summarised as follows. The difference in exporting behaviour is due entirely to intra-industry factors—the superior exporting performance of foreign firms within each sector. Sectoral differences account for a considerable part of the overall disparity in

*Plastics firms appear to be the exception to the above, as foreign plastics firms appear to purchase a greater share of Irish inputs than local ones. The reasons for this are in the internal structure of the industry (which includes both importers and processors of raw polymer and finishers of a substantially completed product). Also the small number of Irish firms in the sample does not allow proper comparison.

purchases of domestic inputs but a large part is still unaccounted for. However, several important caveats must be added. (1) The IDA disburse grants on the basis that new firms do not offer competition to indigenous producers on the home market. The comparability of the two groups is thus reduced. (2) The sectoral categories used are extremely broad and a much finer industrial breakdown is necessary to establish dualism with any force. The limited nature of the Irish industrial sector makes this all the more forcible. (3) Foreign firms, although they would fall into the finest industrial division with Irish firms, are often producing dissimilar products. A narrow range of export products may account for a large proportion of such a sector's output—emanating almost entirely from foreign firms.^[23] The specialised inputs available to foreign firms account in large part for the advantage of foreign firms in such fields. It may be argued that the fact alone distinguishes them from their closest Irish rival in product category terms. (4) A further factor, to which we now turn, may be the influence of size.

The influence of scale factors

It is a plausible *a priori* belief that the reported disparity in exporting and in the purchasing of Irish inputs may be due to scale factors. Irish firms may be smaller and thus face difficulties in exporting. It may also be easier for Irish firms to supply the input needs of smaller firms. Table 12 shows the results when all firms employing less than 100 people in Ireland are eliminated.

TABLE 12: *The performance of large firms*

| | Number | | Export percentage of output | | Percentage material inputs obtained in Ireland | |
|-----------------------------------------|--------|---------|-----------------------------|---------|------------------------------------------------|---------|
| | Irish | Foreign | Irish | Foreign | Irish | Foreign |
| Agriculture based firms (ICIP 01-15) | 12 | 13 | 53.0 | 56.1 | 83.5 | 75.9 |
| Non Agriculture based firms | 17 | 78 | 47.3 | 83.6 | 24.7 | 20.6 |
| Total | 29 | 91 | 49.7 | 79.7 | 49.0 | 28.5 |

Source: Author's calculations from AFF survey.

The size factor does not appear to alter the exporting coefficients to any considerable extent (compare Table 10). The larger foreign firms are slightly more export orientated and the larger Irish firms slightly less so than their respective groups as a whole. The size factor is clearly of major importance with regard to purchases of Irish material inputs. The proportion of goods which the largest

29 Irish firms obtain from domestic sources is 49.0 per cent compared to the 68.3 per cent figure of the whole sample. By contrast the figure for foreign firms changes little (28.5 per cent for large firms as against the overall 31.5 per cent). Scale is clearly a factor in the pattern of input purchases. The tendency of Irish firms not to seek out business from foreign firms may in large part be due to inability to service the needs of larger corporations because of lack of capacity in the domestic sector.

The influence of other linkage effects

A further set of factors which reduce the force of the dualism hypothesis are those concerning the linkage effects crossing the ownership division. Spin-off from the domestic sector can occur in ways other than the purchase of domestically produced inputs in ways which reduce the dichotomy. Taxes paid on wages and other fiscal contributions are used to foster industrial development as a whole. The fact of foreign firms employing skilled labour (and keeping labour within Ireland at all) creates gains, not all of which can be appropriated by the foreign investor; for labour mobility means that some return from the training will accrue in the domestic sector. The demonstration effect of new techniques introduced by the foreign sector may help improve productivity throughout the economy. The reinforcement of the industrial sector by new foreign firms helps to create an industrial ethos, bolstering hopes for future industrial development. Finally, perhaps the most beneficial long-run influence reducing the division is the creation within Ireland of a pool of skilled management. The interchange of such management and the effect of new management techniques is of great long-run importance for the development of the domestic sector. An additional benefit is the attraction back to Ireland of emigrant managers. The entry of new firms is also felt to have the effect of a salutary "jolt" on somnolent domestic firms.

The following section takes a wider look at the contribution of the output of foreign firms to the Irish economy.

Section 4: The Retained Value of Foreign Firm's Operations in Ireland

As the above sections show there has been doubt shed upon the contribution of foreign firms to the Irish economy. One rather crude method of estimating the proportion of output which may be considered beneficial to Ireland is the calculation of "retained value" (*RV*). *RV* is the proportion of output which is spent in Ireland or which accrues to Irish factors. First round effects only are considered; multiplier effects are excluded together with indirect taxes, re-investment and depreciation (the latter two must be considered as accruing to the capitalist, largely foreign).

Ideally *RV* should be calculated for two periods, the investment period and the operating period. However, because of data deficiencies only the operating

period can be considered. In the operating period, "retained value" is estimated according to equation 1.

$$RV = W_I + P_I + L + T_I \quad (1)$$

where W_I = wages paid to Irish labour.

P_I = profits accruing to Irish capitalists or state bodies

L = first round linkage effects; purchase of Irish inputs

T_I = direct taxes on foreign operations.

The calculation of RV s was carried out on five major sectors for the year 1971 using IDA and AFF data. The sample of firms used to provide the estimates covered 194 foreign firms in the food, textiles, engineering/metals/electrical, plastics and chemicals sectors. Although these sectors are very broad, they serve to illustrate differences in RV between sectors and they provide a large enough sample to remove minor distortions. The results of the exercise are set out in Table 13.

On this rather crude estimate an overall RV for the five sectors suggests that 33 per cent of the gross output remains in Ireland after first-round payments. There is a great deal of sectoral variability round this figure with the food sector having by far the highest RV of 54 per cent and the plastics returning a very low proportion of 21 per cent. The factor of wages carries most weight except for food where the linkage effects are high and chemicals which also has a larger share of linkage effects than wages in gross output. As pointed out above, linkage effects are very low except for the food sector where Irish raw materials are much in evidence. Irish taxes and the Irish share of the profits are extremely low because of the tax free export incentive provision and the preference of foreign firms for wholly owned subsidiaries respectively. Indirect taxes alter this picture little because of export orientation of foreign firms and the duty free imported inputs provision for exporting firms.

TABLE 13: *Retained Value as a percentage of the output of foreign firms in five major sectors (1971)*

| Sector | Number of foreign firms | $W_I + P_I + L + T_I = RV$ |
|------------------------|-------------------------|-------------------------------------------|
| Food | 23 | $RV_f = 0.11 + * + 0.42 + * = 0.54$ |
| Textiles | 54 | $RV_t = 0.22 + 0.02 + 0.13 + 0.01 = 0.38$ |
| Metals and engineering | 76 | $RV_m = 0.21 + 0.01 + 0.08 + 0.01 = 0.31$ |
| Plastics | 30 | $RV_p = 0.14 + * + 0.05 + 0.02 = 0.21$ |
| Chemicals | 11 | $RV_c = 0.12 + * + 0.14 + * = 0.26$ |
| Overall five sectors | 194 | $RV_o = 0.18 + * + 0.13 + 0.01 = 0.33$ |

Source: Author's calculations from confidential IDA data and An Foras Forbartha Survey
* = less than 0.01 per cent.

Ways to increase RV

There are several policy measures which could be implemented with the aim of retaining a higher share of gross output in Ireland. All of these measures are likely to reduce the inflow of FPI into Ireland and so benefits of increased *RV* must be weighted against a diminished inflow of investment.

These means are: (1) encourage employment provision in foreign firms thus raising W_f . This, however, has been ruled out because it was felt to encourage inefficiency. Labour intensive techniques are not usually employed by foreign firms and a move in this direction will damage the inflow. (2) Encourage the establishment of joint ventures. Many foreign firms do not welcome minority participation and US firms in particular prefer the wholly owned subsidiary mode of operation. The IDA's attempt to gain equity participation has so far produced very minor results. There is a further drawback in that joint ventures have proved more unstable than wholly foreign-owned firms.^[24] (3) Increase the tax rate on foreign firms. Such a move would obviously cause a drastic fall in the inflow of foreign investment. It would also conflict with the objective of encouraging exports as the tax relief on export profits would be nullified. (4) Increase linkages by special tax relief linked to purchases of Irish inputs. Such a policy would be either expensive if the tax relief were higher than now or detrimental to the inflow if it fell below the current relief. In addition it would be of uncertain impact because in many cases, the specialised high quality inputs are available only from outside Ireland (often only from other units of the international firm).

Given the elasticity of the supply of foreign capital and in particular the elasticity in the supply of foreign capital in the high technology sectors, a rapid fall in the inflow of FPI is expected from the implementation of any of the above measures. This decline is likely to be greater in terms of benefit to Ireland (employment, balance of payments effect) than the benefit from increased *RV* which appears to be inelastic given the characteristics of FPI (capital intensity, high technology input, export orientation) and of the Irish economy's difficulties in supplying the kind of inputs needed by foreign firms.

Two further measures may be suggested which may not affect the supply of foreign capital in this way (5) sectoral differentiation of grants (6) attempt to divert higher order functions to Ireland. The first of these two measures is conceptually sound but again is likely to decrease capital inflow because high linkages exist in the sectors where the world's sector specific stock of foreign investment funds is low. This policy is therefore likely to decrease the FPI inflow. An attempt to encourage higher order functions has begun with the establishment of a Research Park at Naas. Again such a policy will be expensive in terms of grant aid because such incentives must overcome the strong centralisation tendencies for such activities which exist within the modern corporation. The gains are uncertain and the cost is likely to be high.

There are, however, reasons to believe that *RV* will be increasing over time. The opportunities for indigenous enterprises to supply foreign firms will be seized as familiarity increases and foreign firms will seek out domestic suppliers

as they adjust to the Irish environment. Some foreign firms will become more vertically integrated as profits increase and reinvestment takes place. The IDA policy of encouraging joint ventures and taking an equity share of new foreign firms will raise *RV* (in those cases where foreign firms welcome domestic partners). Finally, providing the permanence of foreign firms is proved, the reduction and eventual ending of tax relief will also increase *RV*.

Section 5: *Conclusion*

This paper has shown the importance of FPI to the Irish economy in terms of its contribution to gross domestic capital formation, manufacturing output, exports, employment and to the restructuring of the manufacturing sector.

The section on dualism showed that despite the useful insights which the concept affords, it cannot be applied uncritically in the Irish context. The foreign, domestic ownership division is not sufficient, by itself, to explain differences in exporting and input purchasing behaviour, though it is clearly a necessary part of such an explanation. The consideration of exporting must also invoke scale factors. Other influences on exporting are historical factors such as protectionism, the superior efficiency of foreign firms and the inherent advantages of foreign firms in terms of access to home markets, high level functions and specialised high quality inputs. The discussion of the importance of imported inputs is of interest as regards the Cooper and Whelan argument that foreign firms do not procure as much locally as they might.^[25] The present analysis showed the importance of scale (and of the industrial mix of the two groups). Large Irish-owned firms purchase much less in Ireland than do smaller Irish firms. This suggests that the lack of capacity amongst Irish suppliers may be a constraint on any attempt to increase linkage effects. The reported unwillingness of Irish firms to approach foreign-owned firms is a further barrier. In addition, certain provisions of the Irish tax system, in particular the duty-free allowance on imported inputs for exporting firms, force Irish intermediate goods producers to compete on equal terms with imported inputs. Finally, the unavailability of many of the high quality specialised inputs required by foreign firms helps to account for the difference. It is not sufficient therefore to focus on the fact of foreign ownership as a complete explanation for the disparity.

The examination of the *RV* of foreign firms is not presented as a complete cost-benefit analysis. It does not value benefits except by market prices, does not relate benefit to cost (in particular it does not express benefits per unit of Government investment) nor does it completely encompass benefits—balance of payments effects, external economies and the opportunity cost of grants are all omitted. However *RV* helps to identify and quantify the areas of benefit to the economy and to ascertain the distribution of gains between the host country and the investing firms.

The discussion of *RV* is of interest with regard to the Cooper and Whelan view that grants should be more closely related to value added in Ireland.^[26] *RV* is a

stricter condition than this because *RV* measures returns to Irish-owned factors plus the secondary stimulus to production within Ireland. Section 4 illustrated that increasing *RV* (or attracting only those foreign firms which can be expected to have a high *RV*) also has drawbacks in that the total inflow of FPI would be reduced and presumably job creation would suffer. It may also be a valid criticism of the Cooper and Whelan position that low returns in *RV* are an inevitable cost of the restructuring of the old industrial framework and the establishment of new outward looking industry. This argument is more forcible in the early stages of industrialisation given the inadequacy of existing industry to carry out this task. It should therefore not be overlooked that a policy attempting to raise *RV* may have substantial negative effects on the inflow of new FPI. This trade-off should be carefully investigated before the Cooper and Whelan view is accepted.

The importance of Government policy is clearly illustrated by the success of Ireland in reducing emigration through the establishment of new employment creating outward looking industries. The costs and side effects of this policy should not be ignored. In the main, it is the success of this policy which has been emphasised here. However, this should not lead to a neglect of the domestic sector into which foreign investment should be seen as an essential input (perhaps temporarily) rather than as an alternative.

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- [20] Calculated X^2 = 19.37 (11 degrees of freedom). Critical values are 17.28 at 90 per cent level of significance and 19.68 at 95 per cent level. Assuming the latter confidence level to be satisfactory, the hypothesis that the behaviour of the two groups is significantly different can be rejected.
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