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Hirschman and Irish Industrial Policy*

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Abstract: In this article we examine the origins of Whitaker's export oriented industrial policy and the political management of its implementation. Whitaker appointed academic economic advisors, including Louden Ryan, to a Capital Investment Advisory Committee in 1956. The advice from this committee was to become a cornerstone of Whitaker's industrial policy. Using the archives of the *Statistical and Social Inquiry Society of Ireland* (SSISI), we show that industrial policy at its inception was shaped by the economic theories of Hirschman (1958). Hirschman's theories were adopted for Ireland's vision of economic development via the writings and counsel of Ryan.

I INTRODUCTION

Ireland in the late 1950s had an industrial base that was cultured on import substitution industrialisation where protectionism for three decades encouraged home-grown firms to replace imports of final goods by domestic production. The level of effective protection was extremely high by international standards, although there was a good deal of variance across 4-digit

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industrial sectors (McAleese, 1971).[1] In the late 1950s the concept of industrial development changed. The emphasis was on export promotion, using financial incentives and enhanced capabilities to support exporting companies during trade liberalisation. Seán Lemass, one time Taoiseach of Ireland and T. K. Whitaker, a civil servant, are credited for this inspirational approach to export oriented industrial policy and are regarded by many as the architects of modern Ireland.[2]

In this paper we examine the economic thinking behind the radical change in industrial policy put forth by Whitaker, and the political management of its implementation. Researching the archives of the *Statistical and Social Inquiry Society of Ireland* (SSISI), we see Whitaker's ideas and writings on capital formation take shape in public meetings of the Society. Whitaker appointed academic economic advisors, including Louden Ryan, to a Capital Investment Advisory Committee in 1956.[3] The advice from this committee was to become a cornerstone of Whitaker's industrial policy. This paper will show that industrial policy, at its inception, was strongly shaped by the economic theories of Hirschman (1958), which were adopted for Ireland's vision of economic development via the writings and counsel of Ryan.[4]

In the next section of the paper we examine the political economy behind the rise of exporting and the corresponding decline of import competing firms, or horizontal changes in industry structure. As highlighted by Hirschman (1957), one of the problems with the process of economic growth in developing countries is the resultant "dualism", or as he puts it, the "… uneven course of progress of different industries and geographical areas within a country …" (p. 569). Such a dualism is very evident in Ireland in the 1960s and 1970s

[1] Before Ireland signed the General Agreement on Tariffs and Trade (GATT) in 1960 and the Anglo-Irish Free Trade Area Agreement (AIFTA) in 1966, the average effective tariff level was nearly four times the level observed in trading partners. Garvin (2004) considers the move away from free trade in the 1930s until 1960 to be a major mistake in terms of Ireland's human and economic development

[2] Seán Lemass served as Taoiseach from 1959 through to 1966. Whitaker was appointed Secretary at the Department of Finance in 1956, where he served until 1969.

[3] Louden Ryan was then a Professor of Industrial Economics in Trinity College Dublin. The Capital Investment Advisory Committee had three economic advisors appointed to it, Professors Louden Ryan, Charles Carter and Paddy Lynch. Whitaker and his academic advisors where regular participants in the meetings of the society. Whitaker (1955) presented his own paper to the society on capital formation and we see him writing with his advisors, Lynch, Whitaker, et al. (1945) having a 'Discussion on the problem of full employment' in the public meetings of the society. As Fanning (2008, pp. 194-195) notes: "Within the civil service the key architects of the new official climate were Whitaker and Lynch. Their double-act began with their participation as junior Finance officials in a debate on full employment at the Statistical and Social Inquiry Society (SSIS) in April 1945".

[4] The highly influential economist Albert Otto Hirschman was a Professor in Yale University (1956-1958), Columbia University (1958-1964) and Harvard University (1964-1974).

where we see the coexistence of traditional import competing industries, located mainly around Dublin, and the emergence of modern export oriented industries located in industrial parks, mainly outside Dublin. Hirschman was aware of the social and political consequences of uneven development, as evident in his 1968 paper on the political economy of import substitution where he concludes that as a result of dualism, ".... exporting meets with political and institutional, rather than purely economic, obstacles..." (p. 31). He provided no clear economic framework on how to deal with these political constraints however. Yet, we will see Whitaker did take on board these political constraints in his drive towards free trade as we show how he politically managed these horizontal changes in industry structure.

In Section III we examine the supply side of Whitaker's export led industrial policy, which focused on the role of supply side capabilities. Within a framework that had a holistic view on supply side supports, there was focus on a much needed change in the vertical structure of industry, as represented by the development and enhancement of the domestic supply of intermediate goods and services for exporters. We show how the policy evolved from the advice of Ryan, then a member of the Capital Investment Advisory Committee. Ryan (1961) emphasised the key role of industry linkages for the economic development of the Irish economy, based on the economic framework established by Hirschman in chapter 6 of his book *The Strategy of Economic Development* (1958). In this framework, one of the key elements to inducing growth in developing countries was the establishment of linkages between firms. To quote Hirschman, "... important stimuli result nevertheless from the fact that the setting up of an industry brings with it the availability of a new, expanding market for its inputs whether or not these inputs are supplied initially from abroad" (1958, p. 99). Establishing firms involved in the production of exports can obviously lead to the demand induced creation of domestic firms involved in the production of inputs (goods or services) which may or may not have been supplied initially from abroad.[5] Hirschman (1958) describes such a process as backward linkage effects. He also highlights the fact however, that when an industry develops and generates such effects, these

[5] Hirschman (1958) emphasises that imports of intermediate goods can be crucial in establishing new industry. Over time, once demand has been established for these inputs, domestic industry may develop to replace these imports. He further argues that domestic availability of these inputs is a '... more effective spur to further development' than foreign supply because (i) importing requires special skills and so reduces the number of potential entrants (ii) importing is more risky as it is subject to balance of payment uncertainties and (iii) domestic production of an input will enhance the efforts of those producers to propagate its further uses. Empirical evidence on the important role that importing of intermediate goods can play can be found in Amiti and Konings (2007) where trade liberalisation in Indonesia is shown to allow productivity gains from the use of imported intermediate goods.

may in turn generate forward linkage effects. This occurs as the domestic availability of inputs attracts new and expands existing plants whose production uses these inputs. Li, Walsh and Whelan (2007) empirically examine the importance of linkages in Irish manufacturing over the period 1972 through 2003, and find that inputs and innovations by small indigenous suppliers of intermediate goods are of paramount importance to the entry, performance and survival of exporting plants across all industry and ownership types. In this paper we show that such linkages were an outcome of a targeted industrial policy with a solid economic foundation in Hirschman (1958). Hirschman's big idea was to move away from an industrial policy that promoted Import-Substituting Industrialisation (ISI) of final goods to one that promoted ISI of intermediate products that supplied exporting companies. Building ongoing backward and forward linkages between exporting and non-exporting domestic companies became the focus of Irish industrial policy for employment creation and innovation.

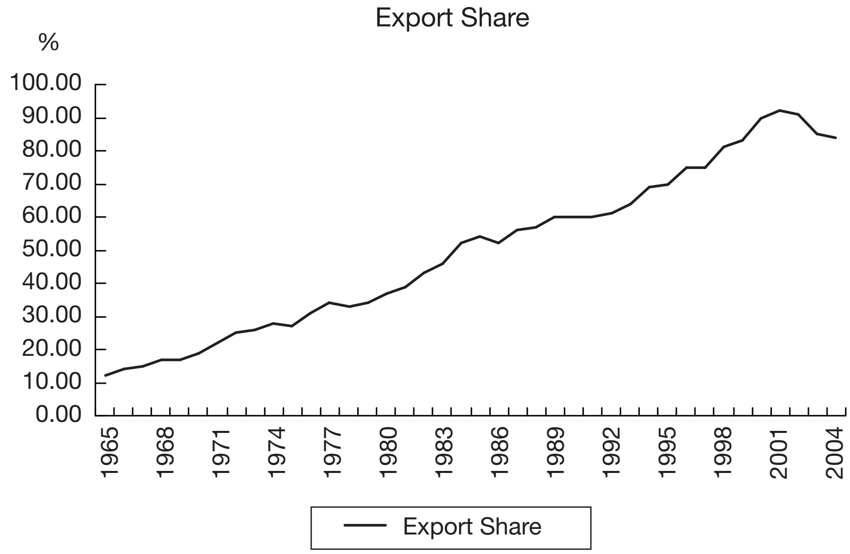
In Section IV we make our conclusions and discuss briefly how the basic thinking around a "holistic" industrial policy conceptualised in the late 1950s did not change over the decades, but was bedded down in more complex institutional structures, particularly after reviews of industrial policy by Telesis (1982) and Culliton (1992).

II HORIZONTAL CHANGES IN THE STRUCTURE OF INDUSTRY

The move away from the protectionist policies instituted in the 1930s led to a predictable rise in exports. However, while exports as a share of gross output in manufacturing showed a steady increase since the 1960s (Figure 1), beneath these statistics there has been a fundamental change in the structure of industry which has been ongoing across four decades.[6] In this section we

[6] Ó Gráda and O'Rourke (1995) using the Economy Database from the Groningen Growth and Development Centre, http://www.ggdc.net, note that Ireland's GDP per capita since 1950 took the same amount of time to converge to the EU average as other EU countries but what was different was the fact most of the convergence was condensed into the period after 1987. Walsh, P. P. (2007) in a vote of thanks – published in Sexton (2007), pp. 39-41 examines Ireland's labour productivity from 1950-2005 using the same data. He plots the ratio of labour productivity in Ireland to that in the US, per hour worked, in 1990 US$ in PPPs. The trend since 1950 has been a relentless gradual improvement in labour productivity which has led Ireland to converge on the US levels. Walsh and Whelan (2000) argue that one should think in terms of a gradual evolution of the exporting industrial base from the late 1950s using a broadly speaking coherent industrial policy for the next four decades. They do not see 1987 as a defining structural break in terms of industrial development.

Figure 1: *Exports as a Share of Gross Output in Manufacturing*



examine the political economy of industrial policy in the late 1950s in Ireland in terms of the impact this has had for horizontal structure of industry. We first illustrate this change.

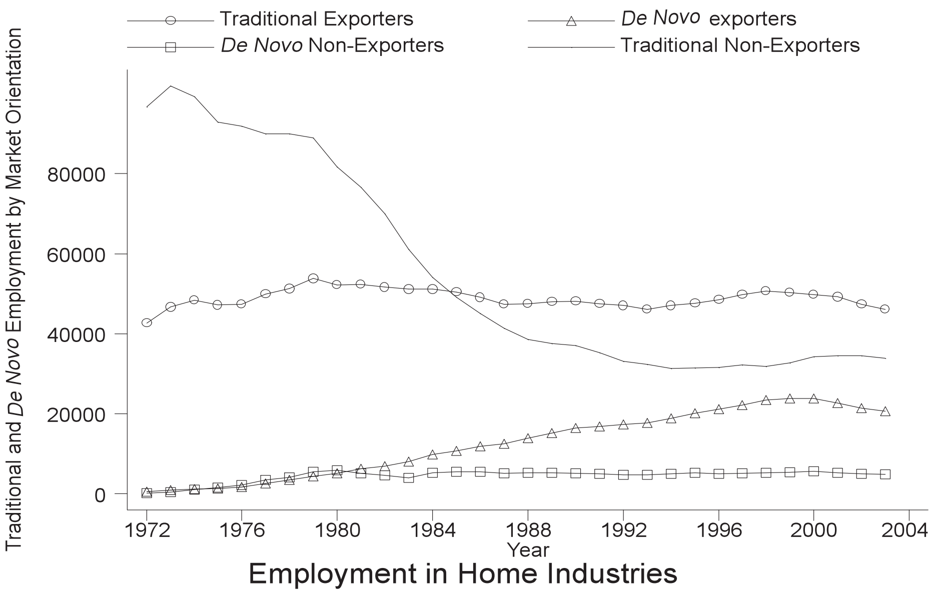
Horizontal changes in the structure of industry are represented in the literature by the expansion of exporting firms and the corresponding decline of traditional import competing firms (see Barry, 1999 and O'Malley, 1989). This is evident in Figure 2, which shows since 1970 (i) the collapse of traditional non-exporters (established pre-1973) – particularly in those sectors dominated by Home ownership and (ii) the simultaneous expansion of *de novo* (established in 1973 or later) exporting firms – particularly in those sectors dominated by US ownership.[7] Within Home industries the huge collapse of traditional non-exporting plants did not switch into exporting, but rather were phased out.

Whitaker was well informed about the inevitable benefits that a move away from protectionism would bring for the economy. Equally, he was fully aware that there would be some "losers" (namely, the import competing firms) from the change in policy. Hirschman (1957) warns that, as a consequence of

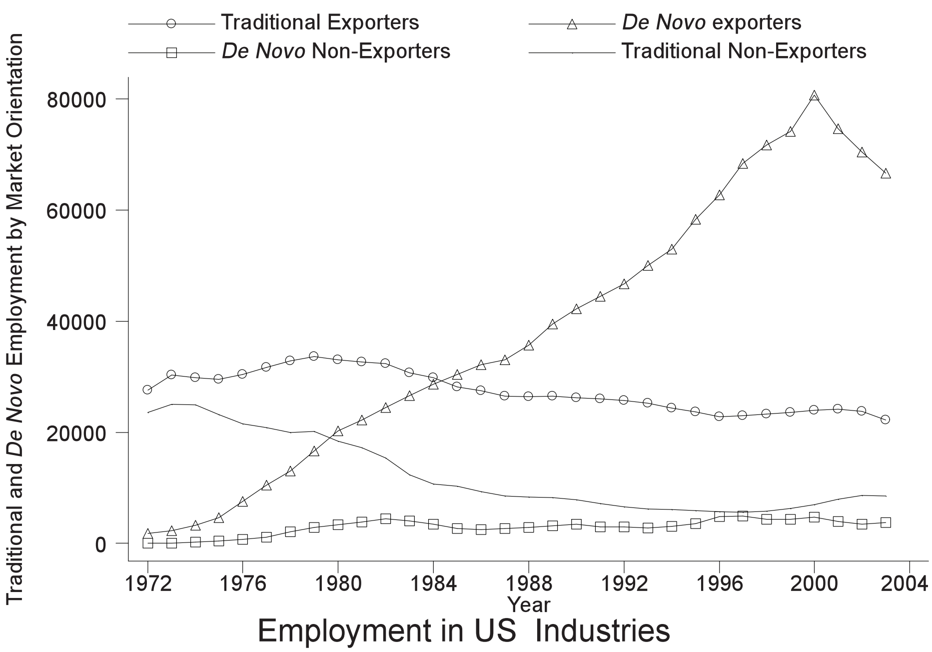
[7] The data source for these graphs is the Annual Employment Panel Survey carried out by Forfás over the period 1972 to 2003 and the Forfás annual expenditure survey 1983-2003 covering all manufacturing companies. Li, Walsh and Whelan (2007) classify sectors as either Home or US, where the majority of plants, in terms of their contribution to sector employment, over the period 1970 to 2003 are Irish owned or US owned respectively. While clearly there are UK and other non-US Foreign owned plants, these do not aggregate up to a majority in any sector.

Figure 2: *Evolution of Employment by Trade Orientation Home Industries*

(i) Home Industries



(ii) US Industries



growth, "... the resulting split of a developing nation into advanced and traditional sectors may be of considerable width and duration and that this split may in turn affect the nature and direction of subsequent development" (1957, p. 569). Hirschman (1968) addresses how difficult the political constraints can be in dealing with such dualism in industry structure. Implementation of the policy would not be politically easy, yet despite much ongoing opposition to his new industrial policies, Whitaker prevailed. This is evident in Whitaker's book *Protection or Free Trade – the Final Battle* (2007), where he documents a letter of correspondence which he received from J.C.B MacCarthy (the then secretary for the Department of Industry and Commerce) on 9 January 1960:

> *Dear Whitaker,*
> *Thanks for your letter of the 7th of January, though it grieves me to note that our exchange of correspondence seems to have done little to bring the discussion down to earth.*
> *The viewpoint expressed in your letter that our industries would gain more from expanded exports than they would lose in the home market, and that there is no need to fuss about getting an adequate quid pro quo for joining either EFTA or Britain in a free trade association, is so far removed from our viewpoint that I agree there is no point in continuing the correspondence.*
> *Yours Sincerely,*
> *J.C.B. MacCarthy*

Whitaker's response, on 11 January 1960, had the last word on the argument:

> *Dear MacCarthy,*
> *I suppose I am entitled to the last word in our correspondence about the Reasons for Reducing Protection. I am sorry it must be that I cannot accept the second paragraph of your letter of 9th January as being a fair or reasonable summary of the views expressed in my previous letters.*
> *Yours Sincerely,*
> *T.K. Whitaker*

Due to the political difficulty of implementing a policy of free trade, where there would be well defined and evident losers under the policy, Whitaker manages the drive toward free trade in a controlled and phased manner. In addition to tariff reductions, there were associated incentives to export including export tax relief and capital grants. Such grants were used to attract green field export oriented Foreign Direct Investment in new industries, and similar incentives were given to Irish owned export oriented companies that were start-ups.[8] However, tariffs were not abolished in one stroke, while incentives to export were introduced over a period of time. In her paper read before the Statical and Science Inquiry Society of Ireland (SSISI) in 1985, McHugh outlines a selective chronology of major policy measures introduced in Ireland since 1949 (McHugh, 1985, Table 1). This clearly illustrates that the lowering of tariffs coupled with the implementation of exporting incentives were introduced piecemeal over a twenty year period, as exemplified by:

1956 Finance Act 1956 granted 50 per cent tax remission on profits earned on increase in export sales over the previous year.

1958 (i) Industrial Development (Encouragement of External Investment) Act 1958.
(ii) Profits arising from export business at Shannon Airport exempted from tax until 1983.
(iii) The proportion of tax remission on export profits increased to 100 per cent.

1960 Finance Act extended the period of Export Profits Tax Relief from 10 to 15 years with diminishing concessions for a further 5 years.

1961 Ireland applied for membership of EEC (Application withdrawn in 1963 following French veto on UK entry).

1963 Unilateral tariff cuts of 10 per cent.

1964 Unilateral tariff cuts of 10 per cent.

1965 Anglo-Irish Free Trade Area Agreement. Free trade in nearly all manufactured products to be established by 1975 by means of ten annual cuts of existing tariffs of 10 per cent each.

1969 (i) Industrial Development Act, 1969.
(ii) Export Profits Tax Relief extended to 1989/1990.

1973 Ireland acceded to EEC membership. Free trade in nearly all manufactures with membership countries to be established over a five year period by cuts in existing tariffs of 20 per cent each year.

1978 Decision announced to replace Export Profits Tax Relief with 10 per cent corporation profit tax for all manufacturing in 1981-2000 inclusive.

Source: Extracts taken from McHugh 1985, Table 1.

The phased diminution of tariffs and the gradual introduction of exporting incentives were implemented to minimise the political instability of imple-

[8] Start-up grants could be up to 50 per cent of the cost of machinery and equipment and 100 per cent of land and buildings (business parks) in designated BMW regions (Border, Midlands, West Regions). In non-designated regions start-up grants could be up to 33 per cent of the cost of machinery and equipment and 66 per cent of land and buildings.

menting free trade to the Irish economy. Roland (1993) and (2000) provide a theoretical framework that explains the difficulties inherent in implementing a set of reforms aimed at increasing social welfare under political constraints, along with the associated implementation costs and uncertainty regarding their benefits. The basic problem with social reforms is that the losers of a reform tend to be a minority group that can calculate their losses with certainty. The winners are a majority of the population that are not only uncertain about the gains, but expect small gains on an individual basis as gains are spread across the population. Hence, most social reforms have an overall negative "expected" outcome on the population ex ante. Since governments depend on population votes, this makes the introduction of social reforms a hazardous task. Modern theories demonstrate how governments with a set of reforms and an information advantage on the cost and benefit of each reform can circumvent this problem.

Dewatripont and Roland (1995), building on the seminal work of Alesina (1987), model a politically acceptable way of introducing a set of reforms that are necessary to maximise social welfare but have ex ante an overall negative "expected" outcome on the population. Their theory assumes that governments have a clear idea of the ex post costs and benefits of each reform ex ante. Reforms yielding large expost positive effects should be implemented first. The more painful reforms become politically easier to implement at a later stage. "This is the effect of building constituencies, using the 'sweet pill' of early reforms to have the population swallow the 'bitter pill' of less popular reforms" (Roland, 1993, pp. 535). He illustrates this in relation to the restructuring of previously State Owned Companies in Central and East European (CEE) countries, where sequencing was recommended: the best companies, requiring limited employment loss and restructuring, should be privatised and restructured first, while the imposition of private ownership and competition on loss-making companies, requiring large employment loss and a great deal of restructuring, should come at a later stage.[9]

Roland (2000) provides a theoretical foundation that explains how governments can control interest groups and design reforms that achieve the twin targets of maximising social welfare (interests of society) and winning political support.[10] Politically, Whitaker realised that in order to navigate the move to free trade, the introduction of export tax incentives (yielding positive

[9] Walsh and Whelan (2001) document the nature of sequencing in the privatisation process across CEE countries using company level survey data and show that the better companies selected themselves or were selected first.

[10] The line of causality runs in the opposite direction to traditional theories as outlined in Peltzman (1976) and Becker (1983). These argue that reform is likely to target minority groups with strong preferences rather than majority groups with weak preferences. The possibility of government failure in the design of reform is therefore highlighted, where governments advance the needs of particular interest groups rather than maximise social welfare.

gains) should be embedded first. Then, once the benefits from these reforms have taken hold in the economy, the more painful reforms of tariff reductions should be implemented, but in a phased way. Whitaker backed green field exporting companies based outside Dublin to deliver prosperity for Ireland, even though the jobs and power were on the side of the traditional, heavily unionised and highly protected industries in the greater Dublin area. The phasing out of these industries was gradual, allowing exporting companies' time to compensate. Derogation on Ireland's phasing out tariffs during the period 1973-1979 on joining the EC is an obvious example of how this was achieved.

III VERTICAL CHANGES IN THE STRUCTURE OF INDUSTRY

The story of Irish manufacturing over this period is not simply about the loss of jobs in traditional import competing plants and the generation of jobs in exporting plants. Figure 2 also documents the strength in traditional exporting companies in both Home and US industries. The incentives for start-ups in exporting were open to both Home and Foreign companies and the success of indigenous industry should be noted. In addition, we should note the growing presence of *de novo* non-exporting plants in both Home and US industries. While the total employment created by these companies at a point in time may have been relatively small, Table 1 shows that these companies eventually dominated the landscape in terms of plant numbers. Moreover, as shown in Li, Walsh and Whelan (2007), innovation in these small Irish businesses allowed exporters in both Irish and US dominated industries to flourish.[11]

This section of the paper examines the supply side of the Irish industrial development policy. In addition to the pursued policy of export promotion, there was an active pursuit of enhanced capabilities to support exporting companies during trade liberalisation.[12] The following policy measures were introduced with a clear objective of enhancing supports for the new industrial exporting base:

[11] While academic papers, in our view, did not highlight the role of linkages enough, there are a few papers that did examine linkages. McAleese and McDonald (1978) highlight employment growth and the development of linkages in foreign-owned and domestic manufacturing enterprises. More recently Görg and Ruane (2000) examine linkages in the Irish electronics sector.
[12] The attractiveness of a rich domestic supply of inputs (goods or services) depends upon the capabilities of those firms involved. "... 'capability' can be thought of as comprising two elements: a measure of the maximum quality level that the firm can achieve, and a measure of its cost of production (productivity) for each product line. It is a firm's relative capability vis-à-vis its rivals that will turn out to matter…" (Sutton, 2007, p. 2).

Table 1: *Plant Numbers by Firm Type*

	Traditional Non-Export	*De Novo Non-Export*	*Traditional Export*	*De Novo Export*	*Total*
1973	3,316	254	653	75	4,298
1974	3,213	444	652	25	4,434
1975	3,078	585	650	166	4,479
1976	2,947	775	651	219	4,592
1977	2,808	1,131	650	301	4,890
1978	2,691	1,449	651	380	5,171
1979	2,585	1,812	651	448	5,496
1980	2,479	2,194	651	525	5,849
1981	2,335	2,554	651	613	6,153
1982	2,189	2,820	650	671	6,330
1983	2,025	3,017	645	736	6,423
1984	1,886	3,307	638	827	6,658
1985	1,757	3,536	625	917	6,835
1986	1,606	3,630	617	988	6,841
1987	1,510	3,746	598	1,049	6,903
1988	1,397	3,747	588	1,111	6,843
1989	1,306	3,733	576	1,163	6,778
1990	1,221	3,653	564	1,221	6,659
1991	1,146	3,554	555	1,246	6,501
1992	1,089	3,411	547	1,301	6,348
1993	1,014	3,391	539	1,344	6,288
1994	957	3,345	534	1,385	6,221
1995	903	3,336	529	1,433	6,201
1996	868	3,313	521	1,477	6,179
1997	818	3,284	514	1,516	6,132
1998	790	3,264	507	1,583	6,144
1999	776	3,260	497	1,584	6,117
2000	753	3,254	486	1,591	6,084
2001	724	3,174	473	1,572	5,943
2002	679	3,112	461	1,542	5,794
2003	656	3,102	445	1,497	5,700

1956 Capital Investment Advisory Committee established, to include academics Professors Louden Ryan, Charles Carter and Paddy Lynch.

1958 Economic Development and the First Programme for Economic Expansion published.

1959 Shannon Free Airport Development Co Ltd established.

1961 Committee on Industrial Organisation set up.

1963 Adaptation grants scheme established. Grants of up to 25 per cent of industrial adaptation costs payable.

1969 (i) Industrial Development Act, 1969, which established the modern Industrial Development Authority that came into operation in April 1970.

(ii) Adaptation grants replaced by Equipment Grants payable by the IDA at rate of up to 35 per cent in Designated areas and 25 per cent elsewhere.

Source: Extracts from McHugh 1985, Table 1, with the exception of the 1956 measure which was not included in her table.

The need to couple the export promotion policy with a change in the vertical structure of industry, as represented by the development and enhancement of the domestic supply of intermediate goods and services for exporters, is evident in Whitaker's 1956 paper on 'Capital Formation' in which he outlined a number of important factors for economic development:

> The first of these is the development of a better appreciation of the dependence of material progress on individual output. Others are a raising of the general level of education, health and skill, the loosening of restrictive practices, whether of employers or employees, the practical encouragement of initiative and enterprise, the adoption of improved methods, techniques and principles of organisation and management both in agriculture and industry, and a greater readiness to apply scientific advances. (Whitaker, 1956, p. 188).

These ideas are reflected in Killeen (1975), then Managing Director of the IDA, who outlined the two pillars of industrial policy to the *Statistical and Social Inquiry Society of Ireland*: export *incentives* and *supports*. In terms of supports Killeen (1975, p. 52) states

> … we have come to appreciate that providing the full range of back-up services needed by industry (i.e., in addition to IDA activities, grants and other incentives) is a complex process which depends on a host of development agencies working in a planned and synchronised way: local authorities in providing water and sewerage; planning authorities, the IIRS and An Foras Forbartha in assessing and advising on complex planning application; the banks and Industrial Credit Company in completing financial packages; Córas Trachtála marketing services; AnCo and the National Manpower Services providing the trained labour force, and so on for the ESB, Department of Posts and Telegraphs, CIE etc. From an operational viewpoint, the institutional co-operation and joint financing needed for industry is an immense administrative problem. Certainly, the IDA alone without the services of these other agencies, could achieve virtually nothing. That so much has been achieved in the past five years is a tribute to the level and quality of the co-operative effort by all these agencies.

Killeen also emphasises the importance of targeting policy to the development of export oriented service type industries, such as consulting, engineering, computing, labour market training, Research and Development. This translates into the importance of building up a rich supply of core capabilities for exporting plants. In addition to the general equilibrium supports, Killeen (1975) highlights the need for downstream linkages to exist inside industries as a core capability that Ireland can offer. Apart from accruement of additional profits and wages, the ability of local companies to embed themselves in the stages of production (processing, supply chain, or R&D) of a particular export product line can result in substantial improvements in capabilities (productivity and quality) of exporting companies leading to their long-term presence in Ireland. Sutton (2000, 2004 and 2007) models and articulates these issues.

It would therefore appear that in their concept of industrial policy formulated in the late 1950s Lemass and Whitaker not only anticipated the shakeout of traditional import competing manufacturing plants, but they further understood that export growth would only happen, however great the financial incentives, if a location could offer core supply side capabilities to exporting plants. They understood the relationship between non-exporting and exporting plants would become vertical, and had an acute understanding of the product specific nature of investment needed to promote linkages. In short, they had a grasp on the importance of industry linkages.

Such an insight and understanding of the dynamics of industry that would be set in motion with the move away from protectionism, it turns out, emanated from a sound theoretical economic framework. In his recent book, Whitaker (2007) clearly highlights his collaboration with three academic advisors on the Investment Advisory Committee:

> ... in May 1956, I read a paper to the Society entitled "Capital Formation, Saving and Economic Progress" which emphasised the need for more productive investment to help take us into an economic upswing. Later that year, the Capital Investment Advisory Committee, under the chairmanship of John Leydon, former secretary of the Departments of Industry and Commerce and of Supplies, was set up by the Department of Finance. I kept in touch with Professor Louden Ryan and other two professional economists on the Committee, Professors Charles Carter and Paddy Lynch. (Whitaker, 2007, p. 9).

The economic ideas of the economist Louden Ryan are put forth in his paper on "Investment Criteria in Ireland" which he read before the SSISI on November 17, 1961.[13] Here, Ryan emphasised the importance of investment in capital intensive rather than labour intensive projects. Successful capital investment would lead to eventual job creation through linkage effects.[14] The

[13] The criteria put forward in that paper include: Profit as a Criterion; Labour Intensity as a Criterion; Linkage as a Criterion; Balance of Payments Criterion; New Resource Criterion and Net Social Productivity Criterion.

[14] White (1982), then Director of the Industrial Development Authority (IDA), explains that while labour intensity was not a key criterion for investment in manufacturing, linkages to other sectors would create a lot of employment.

key criterion for economic growth put forward, to which Ryan devoted most of the paper, was the Linkage Criterion as credited to Hirschman (1958). As explained in the introduction to this paper, with the development of export oriented firms comes the simultaneous demand for domestically produced high quality intermediate goods and services (backward linkages) and these in turn attract new plants and enhance the performance of existing plants that use these inputs (forward linkages).[15]

Whitaker took seriously the notion of industry linkages, as his industrial policy twinned the incentives to export with a series of supports for exporting industry in the guise of investment in infrastructure, skilling up of the labour force, implementing a regional policy to enhance linkage effects by location, grants to encourage start-ups and industrial adaptation. As a result, the story of Irish manufacturing is not simply about the haemorrhage of jobs in traditional import competing firms and the generation of jobs in new exporting firms that resulted from the move away from protectionism. Active policy and supports ensured the development of core capabilities in all industries and allowed non-exporters to play a key role in enhancing the capabilities of exporters to become a world leader in manufacturing (see Li, Walsh and Whelan, 2007).

IV CONCLUSIONS

This paper examines the origins of Whitaker's industrial policy for Ireland. We first considered the political management of the move toward free trade, which resulted in horizontal changes in industry structure: the rise of exporting and corresponding decline in import competing industries. Whitaker was aware of the challenges for economic and regional development created by the dualistic structures outlined in Hirschman (1957). The implementation of this policy had an underlying theoretical framework that enabled tough measures to be executed under political constraints. Politically, Whitaker realised that in order to navigate the move to free trade, the introduction of export tax incentives (yielding positive gains) should be embedded first. Then, once the benefits from these reforms have taken hold in the economy, the more painful reforms of tariff reductions should be implemented, but in a phased way.

[15] The endogenous growth model of Aghion and Howitt (1992) emphasise the need to have turnover, inducing innovation, in companies that provide intermediate goods in order to have economic growth. Repkine and Walsh (1999) apply this to Central and Eastern Europe and provide evidence that rebuilding the vertical structures of industry lead to a boom in traditional exporting product lines in Bulgaria, Hungary, Poland and Romania during early transition.

We then considered the pursuit of enhanced capabilities to support exporting companies during trade liberalisation as the cornerstone of Whitakers industrial policy. We showed how the drive for supports for exporting in industrial policy had a strong economic framework. Whitaker shaped policy on the advice of the economist Louden Ryan, who in turn based his concept of the importance of industry linkages in Ireland's development on the theoretical framework put forth by the influential Hirschman (1958). Industry linkages have been shown by Li, Walsh and Whelan (2007) to be a key contributor to the success of Irish exporting.

Over time there has been a lot of institutional and organisational change in the operation of Ireland's industrial policy. Hardiman and MacCarthaigh (2010) outline how the government agencies involved in industrial policy have changed over time. The IDA founded in 1949 started with a small staff of 11. Today industrial policy is overlooked by three organisations IDA Ireland, Forfas and Enterprise Ireland employing more than 1,200 that still involve academics across various committees. This would be considered a flagship of Irish Public Policy, and has had great success in implementing the vision of those in the 1950s.

As illustrated by Sweeney (1992) the fundamentals of our industrial policy have not changed since Whitaker: exporting and supporting exporting through enhanced capabilities. These fundamentals, based on sound economic frameworks, have led to great success in the Irish economy in the past. Do we need new industrial policy for the 21st century? Can the current agency structure deliver change if needed? The Capital Investment Advisory Committee set-up in 1956 was never closed. Perhaps it is time to call it back into session.

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