

Achieving a 'sustainable' industrial base-why do two small open economies perform differently? the cases of Ireland and Sweden

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Introduction

With high profile Multinational Enterprise (MNE) job losses being a regular news feature in Ireland of late, beginning largely with the first big announcement of the transfer of the production facility of Dell in Limerick to Lodz in Poland in January 2009, MNE job losses have become an almost daily occurrence. The latter has contributed significantly to the ever increasing unemployment rate in Ireland currently standing at 12.6 per cent (CSO February 2010 Live Register). Developments such as the above have put into question the sustainability of an Irish industrial strategy which has placed most of its industrial development efforts into the FDI/MNE basket. It could reasonably be questioned whether such a strategy has led to the neglect of an indigenous (largely SME) sector. One of the key objectives of any industrial economic development strategy should be that the resulting economic activity and growth is sustainable, and that the industrial activity within the economy has some ability to cushion itself from asymmetric shocks such as the current global economic recession.

In light of the above, the current paper seeks to analyse the issue of whether a strong indigenous industrial base is indeed a necessary condition for sustainable economic growth. We are interested in exploring this issue in a number of ways: on a more general level, we approach and investigate this research question via the experience of two countries (Ireland and Sweden) comparable largely on the basis of their size and openness. Secondly, we look at whether there are lessons for Ireland from the industrial development experience and trajectory of the Swedish economy. The latter is an interesting angle given that of late other countries (most especially those of the new member or accession states) have looked to the Irish experience in terms of whether they can learn industrial policy/development lessons. Up to recently, many

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have held Ireland up as a role model for industrial development [e.g. Sapir et al 2003; Sapir 2005, 2006; and Acs et al. 2007] while others writing along these lines have taken a more nuanced view (Andreosso-O'Callaghan and Lenihan 2006; Bailey *et al.* 2009). The approach we take here is radically different given that we look at another country (namely Sweden) which is broadly comparable in terms of size and openness to assess the Irish industrial development strategy to date and to garner if lessons can be learned in terms of a future strategy. What makes this interesting is that the economy of Sweden seems to have been to a lesser degree than Ireland impacted upon (in negative terms) by the recent economic downturn. We explore why there is such a degree of asymmetry emanating from the shock. Is it due to the fact that Sweden has placed more emphasis on having a balanced/more diversified industrial sector vis-à-vis for example, firm ownership (i.e. whether indigenous or foreign); size; sectors? In an attempt to address these issues, we examine growth impact at the level of the firm in terms of a number of indicators such as employment; competitiveness; GDP; productivity and innovation, disaggregated by firm ownership and ask whether the impact of the asymmetric shock of the global economic downturn can in some ways be attributed to the industrial diversification of the economies. In particular, we explore the issue of whether economies less reliant on MNE activity and/or coupled with a more thriving indigenous base are less vulnerable and therefore less exposed to the intensity of external shocks.

The remainder of the paper is structured as follows: Section 1 introduces some of the key conceptual issues and theoretical underpinnings of this paper by first of all addressing how we define the term sustainable economic growth in terms of industrial economic activity. In Section 1, we also discuss the concept of asymmetric shock. In terms of setting the scene, Section 2 depicts briefly the impact of the shock on Ireland and Sweden in terms of growth rates, exports and employment. Section 3 proceeds by outlining the development of Irish industrial activity and associated industrial policies so as to shed some light on the engine of structural change. For comparative purposes and also in terms of lessons for Ireland, Section 3, provides some brief insights into the industrial development trajectory in Sweden. Section 4 attempts to answer the key research question by analysing whether the nationality of firms could be used as an explanatory factor in the differential of intensities generated by the shock within the two economies. Although the analysis here is somewhat hampered by the unavailability of data disaggregated by firm ownership (particularly in the case of Sweden), some key insights still emerge. Section 5 concludes the analysis.

Section 1: Sustainable economic growth and asymmetric shocks

1.1. Definitional issues

During the recent decades of high economic growth (i.e. between the mid-1980s and mid-2008), the concept of 'sustainable economic growth' was overshadowed by that of short term economic growth, if by sustainable economic growth we mean positive and relatively high growth rates that can be sustained over a long period of time. A number of external shocks have characterised this period of time (namely the collapse of the Berlin wall, the Asian economic crisis and the dot.com crash), but Western economies were able to rebound relatively quickly. A major shock, such as the current banking crisis which erodes progressively the world real economy, brings to the fore

the idea of 'economic vulnerability' (Andreosso-O'Callaghan, 2007 and Andreosso-O'Callaghan and Bassino, 2008). The same external shock can have a different impact on two economies, depending on their relative level of 'vulnerability'. External shocks (and therefore economic vulnerability) can be minimised with increased independence, or sovereignty.

Economic dependence, as defined by Tiano (1982), is a situation whereby a country lacks the essential in terms of economic policy making, technology and finance, and financial dependence arises when a country has a demand for financial capital which exceeds its domestic supply of financial assets leading to a growing national debt. In turn, dependence implies diminishing (economic) sovereignty.²

1.2. Evolving views on economic sovereignty

Finding its roots in the work of Jean Bodin (1676), the concept of sovereignty (and of economic sovereignty) is being revived periodically; its intensity tends to abate in times of prosperity, without totally vanishing. The concept was again in vogue in the 1970s. This was the result of the oil shock, playing at the time the role of an external shock. The too high level of EC countries' dependency (France for example) vis-à-vis energy suppliers, and the potential economic vulnerability of these countries, led to the development of a nuclear programme in France, where the energy dependency rate fell from 75 per cent to 50 per cent over the past few decades. At the turn of the new millennium, what could be perceived as 'excessive globalisation' or 'bad globalisation' led the French Parliament to debate on the vulnerability of French firms given their excessive dependency on foreign, mostly non-EU, sub-suppliers through the externalisation of many activities, and given the risk of increasing dependency of the French financial system on the US system (Assemblée Nationale, 2003).

1.3. Implications for this research

The fact that post WWII globalisation has involved nearly every nation of the world and has been encroaching on most aspects of economic activity, including financial services, brings with it the risk of decreased economic sovereignty. However, globalisation and diminished economic sovereignty should not be seen as synonymous; this implies that there is an optimal level of diminishing sovereignty (globalisation) (Bagwell and Staiger, 2001). In light of what is happening today, this optimal level seems to have been well exceeded.

Looking at the case of specific EU countries, can one argue that the 'more sovereign' economies, or those that have not departed too far away from an optimal level of diminished sovereignty, are also relatively less affected by the current economic crisis? Are they more likely to benefit from sustainable economic growth? We define economic sovereignty on the basis of the relative importance of indigenous firms in the manufacturing sector (and in particular those manufacturing firms engaged in higher value-added activities i.e. high up the value chain).

Section 2: An analysis of the impact of the shock

² Being a clear concept in international jurisprudence, and in the words of Okogbule (2008: 214). 'sovereignty simply refers to the power of the state to regulate its internal and external affairs without interference from any other state'.

2.1. Impact analysis

(i) Macroeconomic indicators

Table 1 below depicts some forecasts relating to a number of macroeconomic indicators before and since the crisis.

Table 1: Selected Indicators (Annual percentage change and percent, respectively)

	2006	2007	2008	2009	2010
Ireland					
(1) Real GDP (annual per cent change)	5.7	6.0	-2.3	-8.0	-3.0
(2) Current account (per cent of GDP)	-3.6	-5.4	-4.5	-2.7	-1.8
(3) CPI (annual per cent change)	2.7	2.7	3.1	-0.6	1.0
(4) ECB marginal lending rate (%)	4.5	5.0	3.0	1.7	na
(5) Interest rate, 10-year government bonds (%)	3.9	4.5	4.6	5.8	na
(6) General government debt (% of GDP)	24.7	25.1	44.2	59.9	75.0
Sweden					
(7) Real GDP (annual per cent change)	4.2	2.6	-0.2	-4.3	0.2
(8) Current account (per cent of GDP)	8.6	8.6	8.3	6.9	7.4
(9) CPI (annual per cent change)	1.5	1.7	3.3	-0.2	0.0
(10) Repo rate (%)	3.0	4.0	2.0	1.0	1.0
(11) Interest rate, 10-year government bonds (%)	3.6	4.3	3.0	3.3	3.9
(12) General government debt (% of GDP)	51.0	45.9	40.5	38.0	43.4

Sources: (1), (2), (3), (7), (8), (9) IMF, *World Economic Outlook, World Economic and Financial Surveys*, April 2009; (4), (5), Central Statistics Office, *Financial interest rate*; (6) *Budgetary and Economic Statistics*, Department of Finance, September 2008; (10), (11), (12) *Statistics Sweden and NIER*, 19th December 2008.

According to Table 1, the current shock has a more intense and lasting effect in Ireland than in Sweden. In Ireland, the decline in economic growth for 2009 is nearly twice that of Sweden, and whereas some growth is expected to resume in Sweden in 2010, this is not the case for the Irish economy. Of specific note is the size of the current account deficit in the case of Ireland, a situation which is in sharp contrast with a continuous surplus in Sweden.

Faced with negative growth prospects for 2009, the two countries have nevertheless brought radically opposed measures to the crisis. An immediate response to the crisis by the Swedish authorities has been an expansionary fiscal and monetary policy, with the announcement in December 2008 of a stimulus package (of €2.2bn over 3 years) and a low interest rate.³ This explains in part why GDP is expected to recover in 2010 and deflation in 2009 should be followed by price stability in 2010. A specific problem to Swedish banks is nevertheless their relatively high exposure to over-leveraged East European countries, in particular to the Baltic region (with real growth in Estonia and Lithuania having declined by more than 13 per in 2009, according to EUROSTAT figures).

By contrast, the severe collapse in property related taxes in Ireland has led to an increasing budget deficit; as a result, a restrictive budgetary policy has been

³ It is estimated that thanks to this stimulus package, GDP would be higher by about 1.5 percentage points, and employment by about 1.0 percentage point in 2010.

implemented so as to lessen the impact on the government debt, which is estimated at three-quarters of GDP by 2010 (Table 1).

(ii) Exports

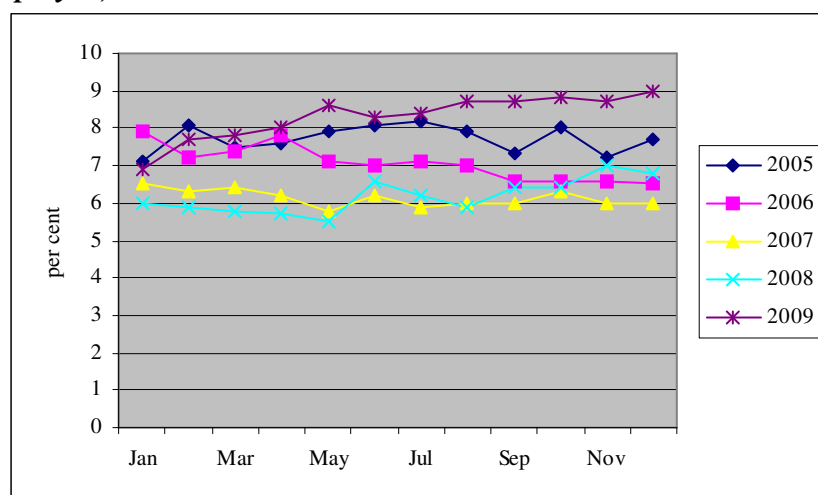
By virtue of their small size, both economies are highly dependent on exports. Swedish exports represent some 50 per cent of the country's GDP, making the Swedish economy dependent on the buoyancy of the world market in general and of the EU market in particular, since the latter absorbs almost two-thirds of its exports. According to recent figures, Swedish exports of manufactured products declined in 2009 by over 10 per cent compared with the previous year.⁴ This decline affects primarily the manufacturing sector, which is the source of more than 70 per cent of all Swedish exports, and a number of manufacturing industries therein. The engineering sector (encompassing Machinery Equipment, Office Machinery, Electrical Machinery, Optical Instruments, Motor Vehicles and Other Transport) represents nearly 42 per cent of total Swedish manufacturing exports. This compares with nearly 36 per cent of all manufacturing exports in the case of Ireland. Chemical exports dominate in the case of Ireland, representing 30 per cent of the total in 2006. This share in total Irish manufacturing exports is more than twice that of Chemicals in total manufacturing exports from Sweden.

These preliminary figures imply that the export structure of both countries typifies countries that have specialised in technology based industries.

(iii) Unemployment

Between December 2008 and December 2009, the numbers of unemployed persons increased steadily in Sweden, resulting in an unemployment rate of 9 per cent in December 2009 (Figure 1a). The Swedish National Institute for Economic Research (NIER) forecasts that the unemployment rate could rise to 11.5 per cent in 2010 and to nearly 12 per cent by 2011.

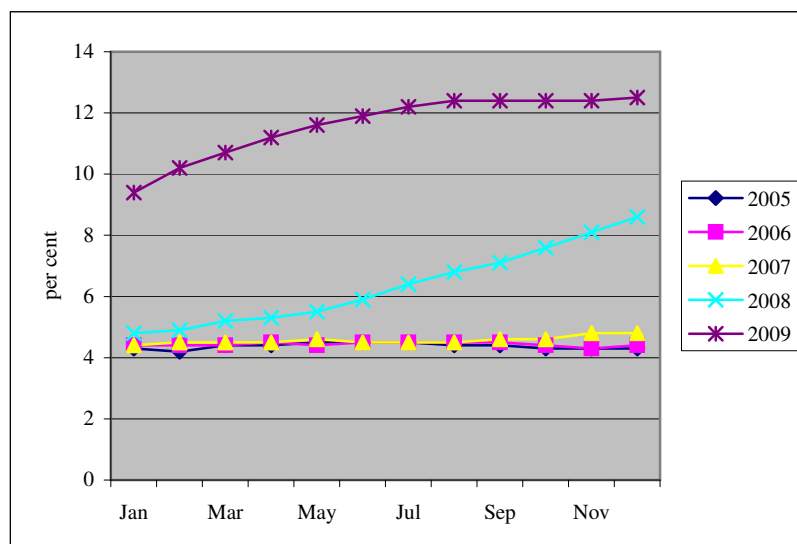
Figure 1a - Unemployment in Sweden (monthly 2005-2009; Per cent of the labour force unemployed)



⁴ Swedish Trade Council, Stockholm. The Council forecasts an increase of 4.5% for Swedish exports in 2010.

Source: EUROSTAT, Unemployment Labour Force Survey, (une_rt_m), Luxembourg.

Figure 1.b - Unemployment in Ireland (monthly 2005-2009; Per cent of the labour force unemployed)



Source: Central Statistics Office Ireland (Statistical Product-Live Register).

Figure 1.b. portrays the sudden increase in unemployment in the case of Ireland. As can be seen, the unemployment rate gravitated around 4 to 5 per cent between 2005 and 2007. The year 2008 will be remembered as the year of a steady increase in the rate of unemployment in the country. As of December 2009, the rate of unemployment surpassed the 12.5 per cent mark. Although the unemployment rates are today broadly comparable between the two countries, a contrasting picture emerges from this descriptive analysis. First, the increase in the number of job losses, since the beginning of the current economic crisis, is much higher in the case of the Irish economy than in Sweden. Between 2006 and 2009, the unemployment rate increased by a third in the case of Sweden (from about 7, to 9%) whereas in Ireland the increase corresponded nearly to a trebling of the rate (from 4.4 to 12.5%). Judging by this indicator alone, the crisis seems to be an asymmetric shock, since it hit Ireland much harder than a comparable economy in the EU.

Second, the drop in employment in Sweden took place primarily within the manufacturing industry (see 4.2. below), whereas in Ireland, the construction sector has been playing an important role in explaining the rise of unemployment. Figures released by the Swedish Statistical Office show that some 48 per cent of the job losses during the year 2008 are attributable to a contraction in the manufacturing sector, as opposed to 14 per cent only in the building and construction sector. In Ireland, the construction sector was responsible for about 30 per cent of all job losses in the same year, whereas the manufacturing sector and the wholesale and retail trade industry represented another 24.8 per cent and 19 per cent of the overall decline, respectively⁵.

⁵ Central Bank and Financial Services Authority of Ireland, Quarterly Bulletin 03, July 2009. Department of Enterprise, Trade and Employment, Labour Market Activation Policy Section, 2009.

Employment lost in these areas was partly offset by an increase in employment in other services and agriculture. During 2009, although most of the job losses in Ireland were still in building and construction (-24.4 per cent), the gap with the manufacturing sector narrowed (-22.7 per cent), whereas greater knock on effects were felt in all services (except for banking, finance and insurance).

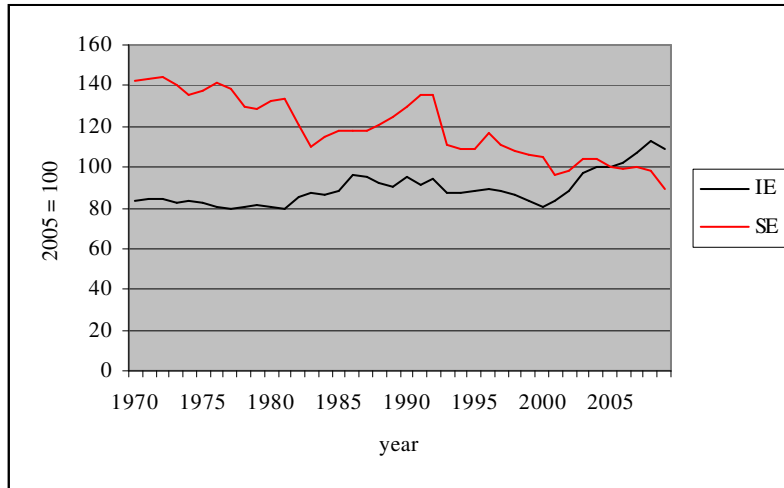
It should be noted that by 2008, the construction sector represented in Ireland 11.4 per cent of the total labour force; this compares with 6.2 per cent in the case of Sweden, for the same year. A relatively large building sector is a characteristic of fast growing economies, whereas at a more mature stage of development, economies tend to rely more heavily on manufacturing and services. Given the transitory nature of the building sector and the derived nature of job creation in many services (with, in particular, buoyancy from building and manufacturing fuelling demand for real estate services, wholesale and retail trade, as well as catering services), the manufacturing sector seems therefore to assume a stable role in economic growth. This is close to the 'equipment hypothesis' according to which there is a strong causal relationship between investment in manufacturing equipment and economic growth (De Long and Summers, 1991).

Third, although in any economy job losses and closures are a typical casualty resulting from the severity of the crisis, the increase in unemployment in the manufacturing sector of Sweden is linked with the relatively important export propensity of Swedish firms (be they indigenous or foreign), whereas in Ireland job losses in manufacturing are for a large part to be explained by the withdrawal of footloose mostly US-owned MNEs. As reported in the literature, MNEs in Ireland tend to be characterised by a higher export intensity than indigenous firms, across all industries (Ruane and Ugur, 2006). This suggests that the expected increase in Swedish exports in 2010 is likely to stabilise (and indeed reverse) the unemployment rate in that country, whereas the misfortunes of the US economy seem to increasingly affect employment in Ireland. Nevertheless, one element that prevents the unemployment rate to rise to 1980s levels in Ireland is emigration (outflow of immigrants combined with Irish emigration to Australia, a country lifted out of the crisis by a certain recovery in neighbouring Asia).

2.2. Explaining the severity of the shock

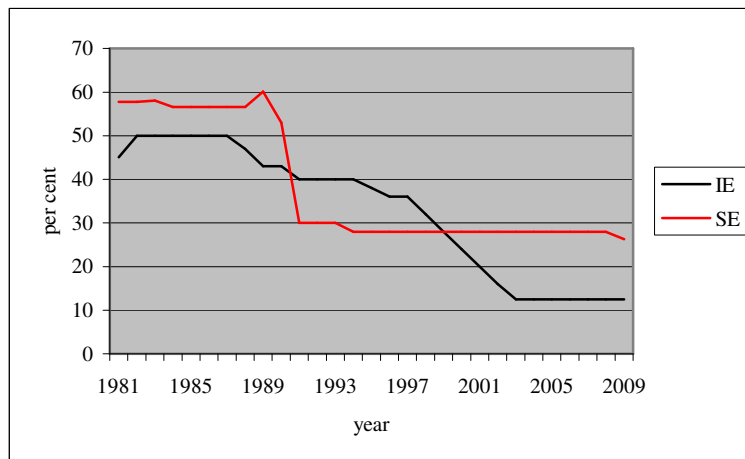
A number of indicators, measuring the macroeconomic performance of an economy, can be used to explain the ability of an economy to withstand external competitive and other adverse pressures. Cost based indicators are among the most popular indicators. A usual way to compare the performance of a number of economies is to refer to competitiveness, a concept which is understood here in its most narrow sense, i.e. price (or cost) competitiveness. The striking message emanating from figure 2, is that Sweden, a rather (price) uncompetitive country in the early period, has managed to become more price competitive – during the years of the economic boom in Ireland. In contrast, Ireland has clearly lost its attractiveness over time in terms of being a price competitive country, although there was a downward trend during the 1990s. The first decade of the new millennium is one characterised by a clear loss of (price) competitiveness for Ireland.

Figure 2: Competitiveness indicator (relative consumer prices, CPI), overall weights, 1970-2009 (2005 = 100)



Source: OECD database, Economic Outlook No 86: Annual and Quarterly data.

Figure 3. Corporate income tax rate, 1981-2009 (%)

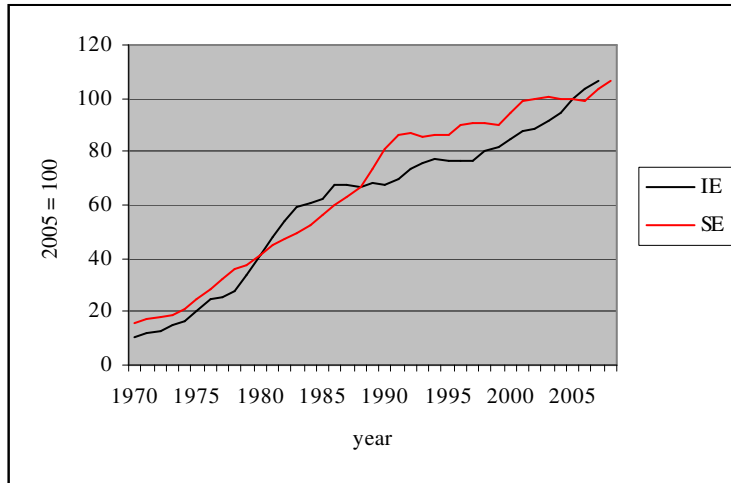


Source: OECD Tax Database, Centre for Tax Policy and Administration, Taxation of Corporate and Capital Income, table II.1.

NB: For Ireland, the table shows only the higher rate of taxation for the earlier period. Between 1994 and 2003, this higher rate was gradually reduced from 40% to the now single rate of 12.5% applying to all business corporations.

Figure 3 shows the corporate tax rate for the two economies over the period 1981-2009. In the case of Ireland, we see that the corporate tax rate has decreased steadily since 1988 with a particularly sharp decrease since 1994. In the case of Sweden, the corporate tax rate has tended to reduce over time with a current rate of 28 per cent which has prevailed since 1994. Overall, we can say that both economies have reduced their corporate tax rates over the period 1989-1998, in line with the aim of tax harmonisation within the EU. Ireland however, possesses a significant advantage having the significantly lower corporation tax from 2003 onwards at a rate of 12.5 per cent.

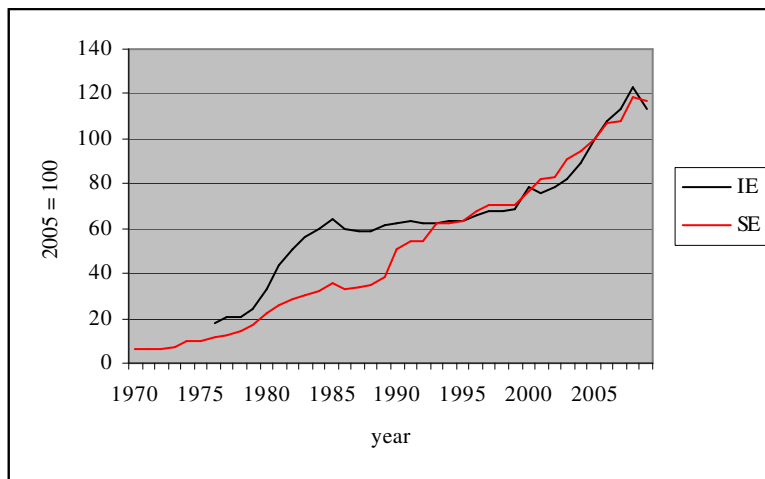
Figure 4: Unit Labour Costs*, 1970-2008



Source: OECD.StatExtracts, Unit Labour Costs-Annual Indicators, Paris.
 *Index OECD base year 2005=100.

As can be seen from Figure 4 in both Ireland and Sweden, there has been an increase in the unit labour cost throughout the period 1970-2008. The unit labour cost in the case of Ireland has increased from 10.59 in 1970 to 106.43 in 2007. Over the same period, the index for Sweden increased from 15.85 to 103.82 respectively. Overall and looking at the analysis between two economies, we see that over the period 1970-1980, the unit labour cost is highest in Sweden. During the period 1980-1988, the unit labour costs in Ireland start increasing and were higher than those of Sweden, whereas during the latter period (1989-2005), the unit labour cost is higher in Sweden.

Figure 5: Consumer Price Index of Energy*, 1970-2009



Source: OECD, IEA Energy Prices and Taxes.
 Base period 2005 = 100.

Another important cost for firms is the cost of energy. Figure 5 shows the consumer price index of energy in the two economies; in the case of Ireland, the consumer price index of energy increases smoothly over time from 18.0 in 1976 to 113.4 in 2009. In the case of Sweden, the consumer price index of energy increases from 11.6 in 1976 to 116.8 in 2009. The consumer price index for energy is highest in Ireland over the period 1978-1992. From 1993 to 2002, the situation is very similar between two economies. However from 2002 onwards Sweden has higher CPI of energy than Ireland.

Across three of the four competitiveness indicators (CPI, unit labour costs and energy) Sweden does not perform better than Ireland. As a consequence, there must be other reasons that explain the better macroeconomic performance of Sweden since the beginning of the current crisis. Is it because manufacturing firms in Sweden are less exposed to the impact of the shock than those in Ireland? It is to these other possible reasons including structural change; industrial/enterprise policy (section 3) and the firm nationality issue-whether a firm is indigenous or foreign owned (section 4) that we now turn.

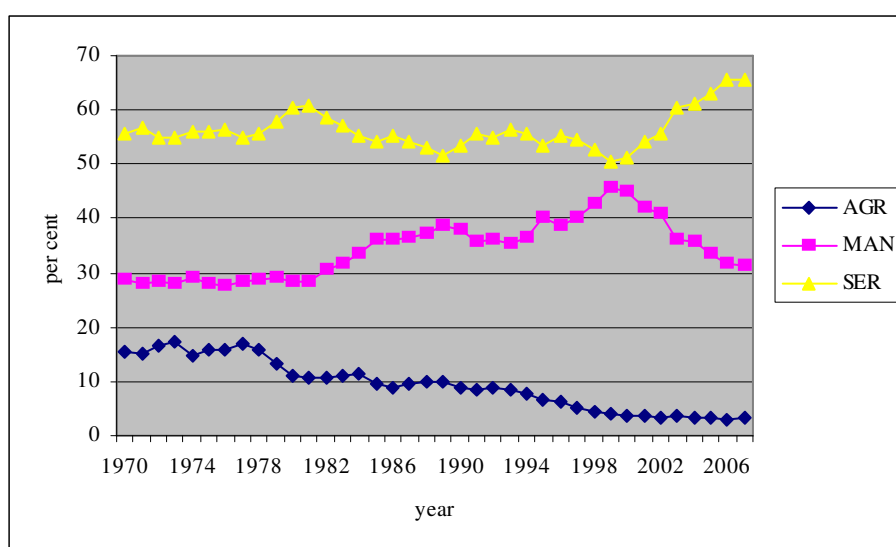
Section 3: Structural change (1970-2007) and industrial development activity and policy

3.1. Industrial development activity and policy in Ireland

In light of the focus of the current paper on indigenous/foreign firm mix, below we examine how this mix has manifested itself in the various industrial/enterprise development strategies and policies in Ireland over the decades.

We begin by looking at structural change in Ireland over the period 1970-2007 and then proceed to trace the key developments in Irish industrial/enterprise development activity and policy. Figure 6 provides a quick overview of structural change in Ireland over the period 1970-2007. A quick look demonstrates that agricultural activity has continued to decline from a peak in the 1970s. As expected of a more advanced and prosperous economy, in the late 1990s and early 2000s, gross output in services continued to demonstrate an upward trend reaching a peak around 2007. The case of manufacturing is interesting given that it had been on a more or less a steady upward trend since the 1970s (with brief declines in 1991, 1993 and 1996). A peak in manufacturing occurred in 1999 but has been on a steady decline thereafter. Services showed a strong upward trend since 1999.

Figure 6. Gross output at current Irish prices over the period 1970-2007 (per cent of total gross output of economy)



Source: EU KLEMS Database, Growth and Productivity Accounts: November 2009 Release, the National Institute for Economic and Social Research and the Groningen Growth and Development Centre, the Netherlands.

Period: 1950-1970

Beginning with the Economic Development Plan (1958), Irish policymakers focussed their attention on the promotion and attraction of Foreign Direct Investment. The following quote sums up the views of the day very well:

“We can no longer rely for industrial development on extensive tariff and quota protection. Foreign industrialists will bring skills and techniques we need, and continuous and widespread publicity abroad is essential to attract them. If foreign industrial development does not rapidly increase, a more radical removal of statutory restrictions on such investment should take place”. (Economic Development Plan, 1958:218).

Ireland’s economic policy changed in the 1960s from a strategy based on inward looking protectionism to one of external openness, which targeted FDI as the engine of industrial development. This strategy was basically one of ‘industrialisation by invitation’. As outlined by Begley *et al.*, (2005), in the 1960s, an initial wave of predominately US owned companies set up operations in Ireland. One of the key incentives during this period was Ireland’s zero per cent tax on profits generated through exports (up to Ireland’s entry into the Common Market, a rate that was then changed into the 10% corporate tax rate for export-oriented firms) in addition to generous capital grants. In most cases, those companies that came to Ireland were already well established, mature industries who simply transferred their manufacturing and assembly line activities of their operations to Ireland. The type of products which were assembled in Ireland included textile, electrical goods and electrical and mechanical components. There were very little supply chain linkages between these predominately US companies and other local indigenous companies.

Period: 1970-1980

From 1973⁶ onwards, the Irish government under the auspices of the Industrial Development Authority (IDA) focussed on a strategy of attracting FDI in sectors such as electronics, chemicals and other ‘high-technology’ industries. The 1970s brought new firms in new sectors, notable amongst these were Pfizer inc in the pharmaceutical and chemicals sector. Computer industries were also attracted to Ireland, notable in this regards was Wang. However, the types of activities that these computer industries tended to engage in were low-value assembly, typically components (Begley *et al.*, 2005).

⁶ It should be noted that 1973 was also the year that Ireland joined the European Economic Community.

More specifically, looking at data ⁷ on the number of persons engaged in manufacturing in Ireland over the period 1970-1980, we observe that the vast majority of those employed in manufacturing in Ireland (approx. 23%) were employed in the food and beverages industry (NACE DA). A significant number of persons (approx. 16%) were also engaged in Electrical and optical equipment industries (NACE DL). The situation is broadly the same for the following decade (1980-1990).

Period: 1980-1990

In the 1980s, basic MNE software activity was also attracted to Ireland. At the time, Ireland was a most favourable location for investment given its well educated Irish workforce who were willing to work hard for low wages due to the high unemployment rates that prevailed during the 1980s until the beginning of the 1990s⁸. Other MNE companies choosing to locate in Ireland over this period included additional pharmaceutical companies and other sectors also began to set up processing and manufacturing activities in Ireland. The 1980s also witnessed an industrial strategy of creating sectoral and spatial clusters. Such attempts to build clusters were focussed around two prime technology sectors: electronics (in particular, microprocessors, software, computer products and printers) and chemicals/pharmaceuticals. Broadly speaking, while the empirical evidence on the impact of industrial clusters in Ireland is indeed limited, what existing evidence suggests that there has been little sectoral clustering between MNEs and local firms at least in low-tech sectors and manufacturing overall (Gleeson *et al.*, 2005 and Buckley and Ruane 2006).

Bailey *et al.*, (2009) sum up the situation for the Irish economy during the 1980s when they outline that Ireland ultimately faced a ‘crisis’ in the 1980s in no small way attributed to the fact that the Irish government had embarked on deficit financed expenditure programmes following the oil price rises of the early 1970s and early 1980s. MNEs responded to the crisis by not only chopping investment but also repatriating profits (note that it is the same story as today), both of which contributed to a deficit in the balance of payments amounting to approximately 10% of GNP. The industrial development strategy that prevailed was criticised for its failure to support indigenous industry. The key industrial policy statement of the 1980s strongly criticised this industrial development strategy. The Telesis Report (1982) outlined that “Successful indigenously-owned industry is in the long run essential for a high income economy...” (p. 185).

Period: 1990s and the dawn of the new millennium and onwards

As outlined previously, the food, beverages and electrical and optical equipment industries dominated employment in manufacturing for the 20 year period 1970-1990. Employing data from the EUKLEMS data base on the number of persons engaged in manufacturing sectors in Ireland over the period 1990-2005⁹ provides some interesting insights. The number of persons engaged in the food, beverages industry declined from a peak of 23 per cent in 1990 to 20 per cent in 2005. What is also

⁷ The source of this data is Number of persons engaged in Ireland, Manufacturing Sectors 1970-2005 (per cent of total manufacturing industries)-EUKLEMS database.

⁸ For example, the unemployment rate in 1988 was 16.3% with a figure of 15.7% pertaining to 1993. Source: ILO Unemployment and Participation Rates (1988-1997), Central Statistics Office, Ireland.

⁹ Most recent years for which data is available.

interesting is the decline in the textile sector from 11 per cent in 1990 to a mere 3 per cent in 2005. Increases in persons engaged in the Chemicals and electrical and optical equipment sectors were also witnessed over the 1990-2005 time period. More specifically, the numbers of persons engaged in the chemicals sector increased from 7 per cent in 1990 to 10 per cent in 2005. Likewise, the number of persons engaged in the electrical and optical equipment sector (NACE DL) increased from a figure of 16 per cent in 1990 to 23 per cent in 2005 (reaching a peak of 25% in 2000).

One of the major industrial occurrences of the 1990s was the arrival of Dell Computer Corporation to Ireland. Its arrival built on Ireland's expertise in manufacturing and the company also moved into supply-chain management, opened call centres and localised newly released software products for European markets. In the same sector, the 1990s also witnessed the scaling down of Apple Computers manufacturing operation to 15 per cent of facility activity; this however, was replaced by Apple's main European and software development support centre. Following the initial setting up of a manufacturing plant by Intel corporation in 1989 this was followed by the establishment of two semiconductor plants in the 1990s (i.e 1994 and 1997). The 1990s also witnessed the beginnings of a significant number of small indigenous software companies which were in many cases spinoffs from MNE companies. Other key MNEs located in the medical devices sector such as for example Boston Scientific Corporation and Guidant Corporation, both of which also added critical mass to this particular sector.

In our view, the most significant industrial policy document was published in 1992¹⁰. Entitled the 'Culliton Report' (1992), through a critical lens it appraised the situation that prevailed at the time regarding industrial development in Ireland. The overriding message from the 'Culliton Report' was the need for the adoption by government of a more 'holistic' approach to industrial development and policy. The Culliton report pointed out the serious dichotomy that existed between indigenous and foreign-owned firms highlighting that unfortunately, there was little connection between the two. It also expressed concerns about the branch plant nature of MNE activity in Ireland.

As outlined by Andreosso-O'Callaghan and Lenihan (2006), despite the fact that even as far back as 1979, some 95% of all manufacturing units could be classified as SMEs, the first formal policy document by the Irish government on the small firm sector per se did not emerge until 1994 with the publication of the 'Task Force on Small Business Report'. Given that most SMEs in Ireland are indigenous firms¹¹, one can reasonably argue that the Irish government to a considerable degree overlooked the indigenous (largely SME sector) until the mid 1990s.

More recently, there has been a strong recognition in industrial/enterprise policy statements regarding the importance of having a thriving SME/Indigenous base of firms. This is evidenced for example, by the 'Report of the Small Business Forum' (2006) that acknowledged that as more low-value-added activities move to lower-cost economies an increased proportion of GNP will have to be produced by indigenous firms (predominately SMEs). One of the most recent policy statements from the Irish

¹⁰ As we have argued elsewhere (Andreosso-O'Callaghan and Lenihan, 2006) the reason for the significance of the Culliton Report is that it placed an emphasis on the overall competitive business environment in which firms operate to the forefront.

¹¹ Data from 2004-2006 for example, shows that 89-90% of SME enterprises in Ireland are classified as Irish firms –CSO.

government relating to industrial/enterprise policy is entitled “Building Ireland’s Smart Economy” (Government of Ireland, 2008) also recognised upfront the need for indigenous firms and entrepreneurship.

The beginning of the new millennium saw some new entrants in software development; the e-business sector and bio-pharmaceutical with some of these choosing to locate European and R&D activities in Ireland. Some high profile examples included Google (in December 2003, it opened its first overseas office with its European headquarters located in Dublin); e-Bay inc and Genzyme Corporation. In the pharmaceutical industry many of the world’s most high profile companies have firms located in Ireland including such iconic names as Pfizer; Glaxo SmithKline and Johnson & Johnson

The new language in policy statements was all about issues such as business networking; promoting entrepreneurship; innovation and R&D and from the mid 2000s onwards as highlighted by for example, the report from the Enterprise Strategy Group (ESG) (2004), for policymakers it was all about strengthening Irish competitiveness by promoting a knowledge-driven economy. Growth rates of over 8 per cent prevailed in the late 1990s in Ireland. It is interesting to note that, despite a small R&D catching-up, high growth in Ireland was achieved without major inroads into innovation. According to data from EUROSTAT, the number of patent applications to the European Patent Office (EPO) by priority year¹² shows that for the general manufacturing category (NACE D), the number of patent applications in the case of Sweden has for every year been significantly higher than in the case of Ireland (for example, 97 against 1 in 1977; 917 versus 60 in 1987; and 1,403 versus 144 in 2006).

In summary therefore, the Irish industrial policy approach can be summed up as one that in our view placed too much emphasis on FDI without recognising its limitations. Although FDI was a key contributor to the phenomenal growth rates during the late 1990s-2007 period (Gray 1997), we do argue that the overriding omnipresence of FDI in official policy discourse led to the neglect of the indigenous SME sector. In fact, Anyadike-Danes at al (2010) make a related point when they argue that this preoccupation with the role of FDI may help to cast light on the connected issue as to why entrepreneurship does not appear in mainstream analysis and discussion regarding the factors that have brought about Ireland’s economic growth.

3.2. Industrial development activity and policy in Sweden

From the industrial take-off to the 1960s

In terms of industrial development, Sweden is considered as being a slow starter, for its today’s well-known industries and companies emerged and took off only in the 1870s.¹³ At the time, the emergence of a Swedish industrial base was favoured by a

¹² EUROSTAT, Science and Technology Database, Patent Statistics (pat_ep_nnac). Priority year is the first year of filing a patent application to protect an invention.

¹³ The list of Sweden’s current top 15 major companies are: **ABB** (merger with a Swiss company); **Astra Zeneca** (Pharma) (UK headquarters); R&D headquarters in Sweden, manufactures in 20 countries and has major research centres in 5. It employs over 54,000 people; **Electrolux** (electrical

large supply of natural resources - *i.e.* forests and minerals – as well as by a buoyant demand in Europe. Cheap electricity – due to the abundance of rivers and waterfalls - made Swedish products relatively competitive on the international (and European) market. An important infrastructural investment (in transport), as well as a rising labour force, were other factors that explained the Swedish industrial take-off. At the end of the 19th century, the joint stock company featured increasingly as a new type of company, and this was to become the dominating form of ownership in late 19th century Swedish industry. This was also the time when large, vertically integrated and export oriented company groups began to form. Investment in innovation in machinery products allowed the emergence of a small number of engineering companies such as Ericsson and ASEA. To bypass the resurgence of protectionism in late 19th century Europe, subsidiaries of Swedish firms were founded abroad.

These elements explain the unfolding broad anatomy of Swedish production over these critical decades of industrial take-off and development: the extraction and processing of raw materials allowed the country to specialise in mechanical engineering technologies; major innovations in machinery products were intimately connected with export activities (Edquist and Lundvall, 1993). The share of engineering exports in total exports rose from 3 per cent in 1880 to 20 per cent in 1950, one of the highest in the world after the USA (Edquist and Lundvall, 1993). The mechanical engineering base was subsequently widened to include electro-mechanical technologies.

A direct consequence of this well-developed manufacturing base was a substantial increase in economic welfare and standards of living of the population during the 1950s and 1960s.

The 1970s and 1980s: decades of uncertainty

Like most European countries, Sweden was sharply affected by the oil shocks of the 1970s. The economic crisis opened the door to an ‘offensive’ industrial policy focusing on state ownership and public support to industries, including those in sunset areas such as textiles and shipbuilding (Benner, 1997). In spite of its many limitations, this ‘offensive’ industrial policy led to some important institutional developments: a Swedish Board for Technical Development – which was to become NUTEK – was created, and a number of public-private projects geared to the development of new technologies in nuclear energy, telecommunications and military aircraft areas were initiated (Benner, 1997).

These two decades were nevertheless marked by a certain degree of uncertainty in terms of industrial direction. Up to the 1990s, the country was becoming increasingly specialised in low growth industries, to the detriment of more knowledge-intensive (high-tech and R&D intensive) industries. As documented by Edquist and Texier

appliances – 82,000 employees); **Ericsson** (telecomm equipment – 64,000 employees); **Hasselblad** (precision equipment – cameras); **IKEA** (furniture); **Kinnevik Group** (holding company mainly controlling enterprises in the media and telecommunications areas); **Pfizer** (US group; pharmaceutical); **Saab-Scania and Saab Automobile** (transport equipment; military equipment); **SAS** (Scandinavian Airline System) (partnership with Denmark and Norway); **SCA** (paper, hygiene paper/toiletries); **SKF** (ballbearings: transport); **Telia AB** (telecommunication services); **Tetra Laval** (packaging); **Volvo** (transport)

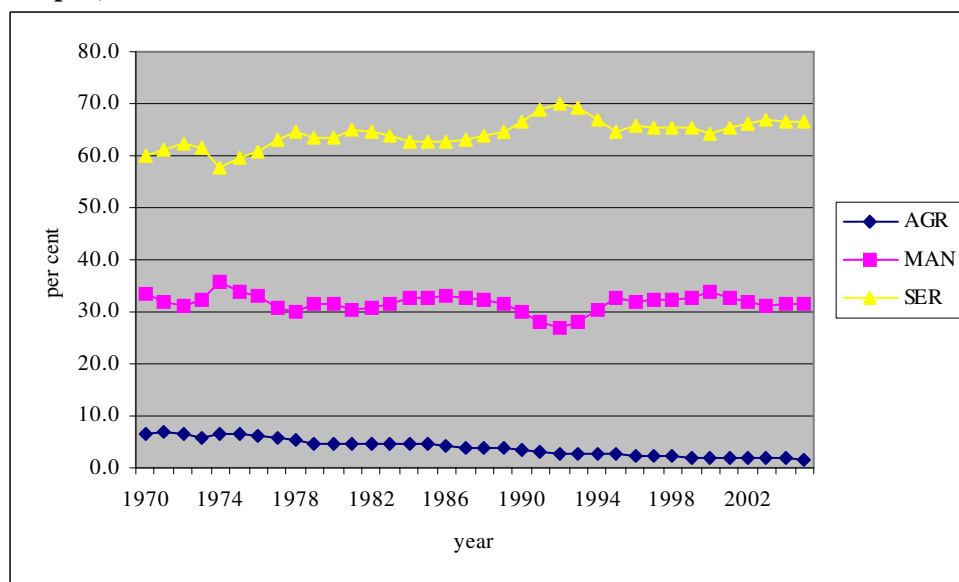
(1996), the proportion of production in R&D intensive growth industries declined between 1975 and 1991.

The 1990s: EU membership and a new take-off

By acceding to the EU in 1995, Sweden was able to implement a new strategy of exploiting the economies of scale offered by the large EU market. The latter part of this decade was marked by a number of post-financial crisis positive changes perceptible in the production fabric of the country. In particular, Sweden was able to reverse the previous trends of non-optimal export specialisation by increasing its export share in high-technology and high-demand manufacturing products. In particular, Sweden’s remarkable performance in telecommunication equipment and pharmaceutical products improved substantially the country’s ranking as a high-technology world exporter (Braunerhjelm and Thulin, 2004).

Although initiated as early as in the 1970s, when numbers employed in sunset industries (textile and leather) plummeted while the number of people employed in the services sector increased (Figure 7), structural change accelerated in the Swedish manufacturing sector during the 1990s, with an impressive growth of gross value added in telecommunication equipment (NACE DL32) and chemicals (NACE DG, table 4).

Figure 7: Gross output at current basis prices (Sweden, 1970-2007, per cent of total gross output)



Source: EU KLEMS Database, Growth and Productivity Accounts: November 2009 Release, the National Institute for Economic and Social Research and the Groningen Growth and Development Centre, the Netherlands.

Table 4: Gross value added at current basic prices in manufacturing industries (Sweden, selected years, 1970-2007, %)

Year	1970	1980	1990	2000	2007

Total		100	100	100	100	100
NACE	Industry					
DA	Food products, beverages and tobacco, <i>of which</i>	n/a	6.60	8.52	7.78	7.91
DB	Manufacture of textiles and textile products	n/a	2.43	1.51	1.06	0.84**
DC	Manufacture of leather and leather products	n/a	0.34	0.21	0.11	n/a
DD	Manufacture of wood and wood products	n/a	6.06	5.42	3.53	5.10
DE	Manufacture of pulp and paper products	n/a	14.67	14.86	15.71	10.74
DF	Manufacture of coke, refined petroleum products	n/a	0.81	0.88	1.01	0.94
DG	Manufacture of chemicals, chemical products and man-made fibres	n/a	8.30	8.99	11.04	11.13
DH	Manufacture of rubber and plastic products	n/a	2.10	2.28	2.95	2.98
DI	Manufacture of other non-metallic mineral products	n/a	2.96	2.97	1.96	2.18
DJ	Manufacture of basic metals and fabricated metal products	n/a	16.54	13.82	13.69	17.10
DK	Manufacture of machinery and equipment n.e.c.	n/a	12.68	12.88	11.78	13.56
DL	Manufacture of electrical and optical equipment	n/a	11.92	12.11	12.04	12.70
	30 Office machinery and computers	n/a	0.93	0.94	0.52	n/a
	31 Electrical machinery and	n/a	3.32	3.37	3.15	n/a
	32 Radio, television apparatus	n/a	3.93	3.99	5.33	n/a
	33 Medical, precision instruments	n/a	3.75	3.80	3.06	n/a
DM	Manufacture of transport equipment	n/a	13.36	13.57	14.49	12.24
DN	Manufacturing n.e.c.	n/a	1.23	2.01	2.84	2.57

Source: EU KLEMS Database, Growth and Productivity Accounts: November 2009 Release, the National Institute for Economic and Social Research and the Groningen Growth and Development Centre, the Netherlands.

** DB+DC

As shown in table 4, the broad engineering sector represents today nearly 40 per cent of the total manufacturing VA, manufacturing employment and total exports (the latter two not reported in the table). This sector contributes 29 per cent of Swedish GDP. This sector has been and still is the main manufacturing sector in Sweden. It has a high technological level and it encompasses highly innovating large Swedish firms with a world dimension. This is the case for ASTRA and Pharmacia & Upjohn in the chemical industry, for SKF, the world producer of ball bearings, for ABB who dominates three areas (power generation, power transmission and distribution area and robotics), as well as for Volvo and SAAB in the transport industry. Over time, some of the firms have seized the evolving opportunities by capitalising and diversifying in sun rise industries; this is the case for Ericson that moved from mechanical engineering into electronics. The table shows that the structure of production has been fairly stable over time, in that the engineering sector has been an important actor of industrial growth after WWII; structural change can nevertheless be seen in the case of chemicals and pharmaceuticals, a growing industry over time.

The contemporary period: the dawn of the new millennium and onwards

With the advent of the new millennium, a number of changes were introduced in the organisation of Swedish innovation policy with for example the split of NUTEK into two components (NUTEK and The Swedish Agency for Innovation Systems - VINNOVA). In the eyes of some authors, this made Swedish policy become an innovation as opposed to merely an industrial policy (Bitard *et al.*, 2008). Also, the 1980s initiatives in terms of venture capital were strongly consolidated by numerous government schemes aimed at providing seed and early stage financing for innovating firms. Consolidation and expansion equally took place in the area of the dissemination and commercialization of university-based research. This emphasis on home grown and domestically commercialised research brings a response to the ‘Swedish Innovation Paradox’, according to which high R&D intensity in Sweden is not matched by a high share of high-tech (R&D intensive) products in manufacturing (Edquist and McKelvey, 1998; Bitard *et al.*, 2008).

As can be seen from a brief summary of Swedish industrial take-off, development and refinement, the success of Swedish manufacturing firms, in particular of Swedish MNEs abroad, is to a large extent attributable to the country’s long tradition of a high Governmental involvement at all levels of industrial affairs. Although state aids in the 1970s¹⁴ resulted in a sub-optimal allocation of resources, the policy of the 1980s started being redeployed towards forward looking measures. As a result, large efforts were made in favour of innovation, of the introduction of new technologies across industries and fostering SMEs, in stimulating exports as well as a regional balance. With regard to SMEs, the changes that started to emerge with the 1983 tax code and with other tax reforms in 1990 put an end to an industrial policy which was seen as being biased against smaller and less capital-intensive firms. As argued by Davis and Herenkson (1995), the biased tax system before 1990 has resulted in a productive

¹⁴ Sweden postponed the downturn caused by the oil shock through an expansionary fiscal policy; as a result, employment rates were maintained, but wage inflation led to dwindling export shares, particularly in the years 1974-76.

structure characterised by a low rate of self employment and dominant large firms leading to a highly concentrated ownership and control.

With a small number of exceptions, Swedish industrial policy has normally been successful in turning threats into opportunities. For example, following the October 1982 devaluation of the Krone, a Special Investment Fund was created whereby companies had to deposit 20 per cent of their pre-tax profit into the fund managed by the Central Bank; monies could then be used for investment purposes. This has resulted in high productivity growth rates.

In summary, the MNE/indigenous dichotomy does exist in Sweden too, although it is not one that opposes large (efficient) firms on the one hand and small (less efficient) firms on the other. In Sweden, foreign firms are evenly distributed across manufacturing and services and indigenous firms control the highly export oriented and technology-based engineering sector. Swedish Government policy has encouraged the export of innovation-driven export manufacturing activities and SME development, particularly in latter years.

Section 4: The nationality (indigenous versus foreign) issue: does it matter?

Below we explore the issue as to whether firm ownership/nationality provides some insights into explaining the details of the trends behind the performance of the manufacturing sector in Ireland and Sweden over various decades.

4.1. The case of Ireland

As evident from Table 5, Employment in Irish firms is dominated by the more traditional sectors of food products and beverages; textiles and clothing; wood; paper products, publishing and printing. The 'complex' economy sectors are dominated by employment in foreign-owned firms. For example, the chemicals and chemical product sector is very much dominated by employment in foreign firms (80 per cent of those employed in this sector). This is also the case for the office machine and computers and electrical machinery sector. Likewise the motor vehicles & trailers and other transport equipment sector has also become increasingly dominated by employment in foreign-owned firms. A more even distribution of nationality of ownership occurs in the case of the machinery and equipment sector. In contrast, CSO figures show that Irish firms completely dominate employment across all industries of the services sector.

Table 5: Indicators of manufacturing enterprises in Ireland classified by nationality of ownership (1998-2006)

NACE Rev. 1.1	Industries	Nationality of ownership	Persons engaged in manufacturing enterprises (% per industry)			Turnover(% of total value in each industry)			Labour costs			Labour productivity			Exports		
			1998	2002	2006	1998	2002	2006	1998	2002	2006	1998	2002	2006	1998	2002	2006
15-16	Manufacture of food products; beverages and tobacco	Irish	75.1	75.8	78.5	52.8	51.2	45.2	64.4	65.3	64.7	36.0	48.0	68.8	42.7	37.7	26.2
		Foreign	24.9	24.2	21.5	47.2	48.8	54.8	35.6	34.7	35.3	273.1	426.7	517.7	57.3	62.3	73.8
17-18	Manufacture of textiles and textile products	Irish	60.8	67.2	68.3	51.2	55.4	59.2	54.9	59.0	63.4	21.4	26.1	n/a	36.4	42.5	41.6
		Foreign	39.2	32.8	31.7	48.8	44.6	40.8	45.1	41.0	36.6	38.5	49.6	n/a	63.6	57.5	58.4
20	Manufacture of wood and wood products	Irish	79.4	83.5	n/a	64.5	73.2	n/a	67.8	74.0	n/a	26.6	43.9	n/a	22.1	24.2	n/a
		Foreign	20.6	16.5	n/a	35.5	26.8	n/a	32.2	26.0	n/a	65.4	77.1	n/a	77.9	75.8	n/a
21-22	Manufacture of pulp, paper and paper products; publishing and printing	Irish	71.8	66.1	72.8	24.7	16.5	18.2	70.8	60.4	64.2	47.7	52.9	67.0	4.4	2.0	4.6
		Foreign	28.2	33.9	27.2	75.3	83.5	81.8	29.2	39.6	35.8	179.3	313.6	499.7	95.6	98.0	95.4
24	Manufacture of chemicals, chemical products and man-made fibres	Irish	20.0	16.9	20.5	5.1	2.8	4.1	16.8	12.6	14.3	55.3	50.8	62.2	1.6	1.0	1.8
		Foreign	80.0	83.1	79.5	94.9	97.2	95.9	83.2	87.4	85.7	466.2	785.7	601.1	98.4	99.0	98.2
25	Manufacture of rubber and plastic products	Irish	55.9	64.4	67.7	50.8	58.9	64.6	51.2	60.3	63.1	34.2	43.1	53.6	29.6	31.7	43.6
		Foreign	44.1	35.6	32.3	49.2	41.1	35.4	48.8	39.7	36.9	53.6	51.4	63.3	70.4	68.3	56.4
26	Manufacture of other non-metallic mineral products	Irish	83.7	83.5	85.8	82.2	78.9	77.5	81.7	80.2	81.0	55.7	61.1	87.7	63.7	59.2	74.6
		Foreign	16.3	16.5	14.2	17.8	21.1	22.5	18.3	19.8	19.0	61.5	78.3	150.3	36.3	40.8	25.4
27-28	Manufacture of basic metals and fabricated metal products	Irish	73.4	78.2	84.6	62.2	68.2	74.6	64.9	71.7	78.1	32.6	37.5	53.0	33.6	31.3	35.8
		Foreign	26.6	21.8	15.4	37.8	31.8	25.4	35.1	28.3	21.9	51.5	59.8	65.2	66.4	68.7	64.2
29	Manufacture of machinery and equipment n.e.c.	Irish	52.6	54.1	54.0	43.1	41.3	41.1	47.6	46.1	47.3	32.4	40.0	57.7	25.7	23.8	25.7
		Foreign	47.4	45.9	46.0	56.9	58.7	58.9	52.4	53.9	52.7	55.7	65.9	113.7	74.3	76.2	74.3
30-33	Manufacture of electrical and optical equipment	Irish	19.3	16.7	13.2	7.9	4.4	3.4	14.9	13.7	11.4	32.7	44.7	64.5	4.8	2.7	2.1
		Foreign	80.7	83.3	86.8	92.1	95.6	96.6	85.1	86.3	88.6	74.5	128.9	152.0	95.2	97.3	97.9
34-35	Manufacture of transport equipment	Irish	53.6	27.3	22.9	38.7	25.7	25.6	52.4	21.2	18.2	36.2	37.7	48.2	23.9	14.7	12.4
		Foreign	46.4	72.7	77.1	61.3	74.3	74.4	47.6	78.8	81.8	54.4	49.5	58.6	76.1	85.3	87.6
36-37,19,23	Manufacture of leather products, refined petroleum products and n.e.c.,	Irish	67.9	71.3	74.5	57.2	69.2	27.0	60.6	62.5	62.9	36.9	61.9	53.0	40.4	37.8	22.6
		Foreign	32.1	28.7	25.5	42.8	30.8	73.0	39.4	37.5	37.1	54.4	86.3	275.0	59.6	62.2	77.4

Source: Central Statistics Office Ireland (CSO), Census of Industrial Production (various years).

Table 5 shows also that turnover is marginally dominated by Irish firms in the case of the more traditional manufacturing sectors of food products and beverages; textiles and clothing and wood (except furniture). Interestingly the opposite is the case for pulp, paper, paper products, publishing and printing. As expected turnover in the case of chemicals and chemical products is decisively dominated by foreign-owned firms; this is also the case for the manufacture of machinery and equipment along with office machinery & computers and electrical machinery. Finally, the same holds for the manufacture of motor vehicles & trailers and other transport equipment.

On average, labour costs in Irish owned firms are higher than those in foreign owned firms. More specifically, looking at table 5, we can see that in the case of the more traditional sectors of food products, beverages, textiles and clothing labour costs in Irish firms are higher and have indeed increased overtime. Labour costs in foreign firms tend to be higher in the case of chemicals and chemical products and office machinery & computers and electrical machinery.

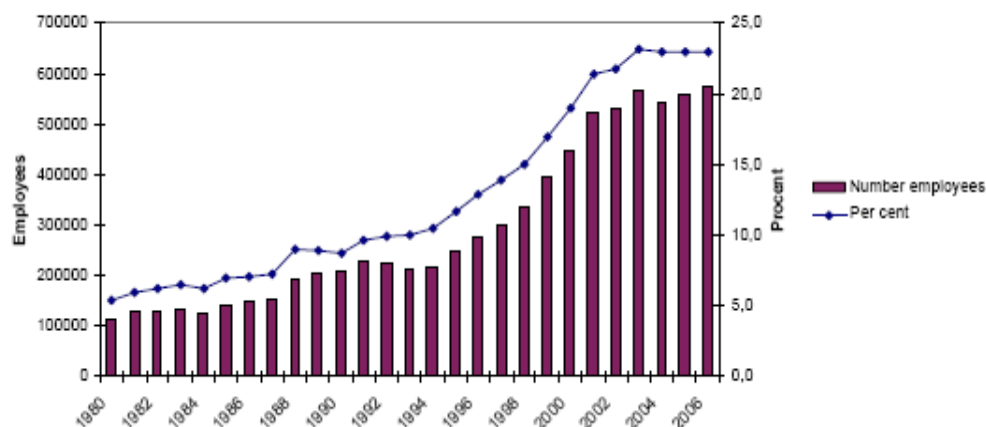
What is immediately striking from table 5 is the fact that labour productivity in foreign firms is higher than in Irish firms across all sectors (even in those where Irish firms dominate). For example, labour productivity even in the most traditional sector of food products, beverages, textiles and clothing is almost 8 times higher in foreign owned firms when compared to Irish-owned firms in the same sector. Looking at the opposite end of the spectrum (chemicals sector), that is, a sector where foreign firms dominate we see yet again that even in 1998 foreign firms in this sector were 8 times more productive in terms of labour productivity compared to their Irish-owned counterparts; this increases to almost 10 times in 2006 (most recent year for which data is available). The largest differential in the chemical sector occurs in 2002 when labour productivity in foreign owned firms is almost 16 times higher than that which prevailed in the case of Irish firms.

Finally, exports in manufacturing enterprises classified by nationality of ownership over the period 1998-2006 (per cent of total value in each industry) are also presented in table 5. In all sectors over all years foreign-owned enterprises export more than their indigenous Irish firm counterparts (except in the case of the non-metallic mineral products sector where the percentage of exports by Irish firms is higher).

4.2. The nationality issue in Swedish industry

As of December 2008, there were 12,861 foreign controlled enterprises in Sweden, representing a total of 621,721 employees, or approximately 15 per cent of total employment in the country.¹⁵ Of these 12,861 foreign controlled firms, some 75 per cent are in the services sector. As shown in figure 1 below the share of total employment in foreign controlled firms has increased over time, particularly since the entry of Sweden in the EU in 1995. In 2006, this share represented less than a quarter of employment in the business (or private) sector.

Fig. 1 Number of employees in foreign controlled enterprises and their share of employees in the business sector 1980-2006.



Source: Swedish Institute for Growth Policy Studies (2007) Official Statistics of Sweden, S2007-005, 'Foreign Controlled Enterprises 2006', Stockholm, p. 9.

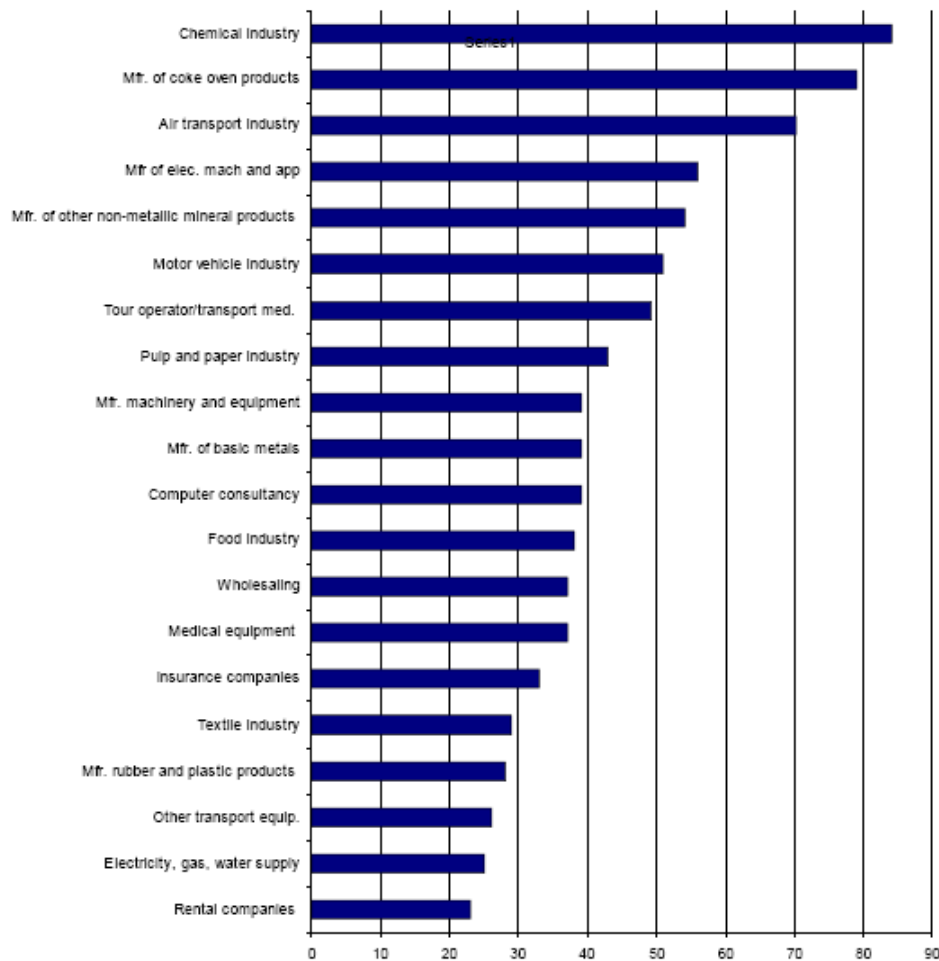
By broad sector, a third of all manufacturing jobs and 20 per cent of all jobs in the services sector respectively are in foreign firms. With regard to the distribution of employment between the indigenous versus foreign firms, and across the different industries in the manufacturing and services sectors, figure 4 shows that six industries are dominated by foreign firms. These are the chemical industry (where 84 per cent of total employment is in foreign firms), coke (79 per cent), air transport (70 per cent), and other non-metallic products (64 per cent). At a more refined level of analysis, electrical machinery (56 per cent) and motor vehicles (51 per cent) are also characterised by relatively high levels of employment in foreign firms.

However, the engineering sector (NACE 28-35, comprising in particular motor vehicles and electrical machinery) is mostly controlled by Swedish firms. Only a third of all employment in this industry group, a relatively large employer, is in foreign controlled firms (table 6). This implies that, in spite of globalisation and of the entry of Sweden in the EU in 1995, Swedish firms still control the majority of employment in critical or high tech industries. In the case of Ireland, a reverse scenario was

¹⁵ The definition of a foreign controlled enterprise is the one used by the OECD and the EU. An enterprise is defined as being foreign controlled, if more than 50 per cent of the voting rights are controlled by foreign institutional units.

observed. As hinted at above, the industries in this group category are also export oriented. According to Swedish official data, the motor vehicles and machinery & equipment (Swedish controlled) industries represented 18.1 per cent and 16.8 per cent respectively of all manufacturing exports in 2007. They are also the leading industries in terms of labour productivity; this is particularly the case for electrical and optical equipment, a very much indigenous industry, which boasts the highest labour productivity rate over the last years.

Fig. 4 Employees in foreign controlled enterprises as a per cent of all employees in the industry in Sweden 2006



Note. The figure only shows the 20 industries which have the largest shares of employees in foreign controlled enterprises, for the complete figures see the table appendix.

Source: Swedish Institute for Growth Policy Studies (2007) Official Statistics of Sweden, S2007-005, 'Foreign Controlled Enterprises 2006', Stockholm, p.14.

Table 6 – Employment in foreign controlled enterprises as a percentage of total employment by industry (selected industries, 2006)

	Number of foreign	Number of employees in	Share of employees in foreign firms as a % of

	enterprises	foreign firms	employment per industry
Services (50-99)	8,393	314,415	20
Manufacturing	1,597	232,530	35
of which:			
Chemicals (24)	135	30,885	84
Computers (30)	9	559	16
Electrical Mach (31)	68	13,373	56
Radio, TV (32)	64	4,384	17
Medical Equipment (33)	81	7,005	37
Motor Vehicle (34)	73	39,161	51
Other Transport (35)	46	5,834	26
TOTAL	11,107	572,715	23

Source: Swedish Institute for Growth Policy Studies (2007) Official Statistics of Sweden, S2007-005, 'Foreign Controlled Enterprises 2006', Stockholm, pp.25-26

In terms of size, most of the foreign controlled enterprises (87 per cent) were small with fewer than 50 employees in 2008. These small enterprises accounted however for only 12 per cent of employees in foreign controlled enterprises. By contrast, large foreign enterprises (with 250 or more employees) accounted for 4 per cent of all foreign controlled enterprises, but for 67 per cent of all employees in foreign controlled enterprises. Smaller foreign controlled enterprises tend to be more present in the services sector whereas employment in foreign controlled large firms tends to be more evenly distributed between manufacturing industry and the service sector. This is in sharp contrast to the Irish situation where foreign firms tend to be larger than their indigenous counterparts in the manufacturing sector as a whole.

As seen above, job losses have been a direct and immediate consequence of the current economic crisis so far. In 2009, the manufacturing sector lost 65,000 jobs (a 9 per cent contraction), whereas employment within the construction industry decreased by 19,000 persons (a 6.8 per cent decrease) (Statistics Sweden, 2009). Inevitably, the contraction of investment and consumption on world markets has been hitting the export oriented firms in Sweden; SAAB has been shedding 750 jobs in March 2009, whereas Skania and Volvo announced job cuts. The Swedish Statistics Office nevertheless forecast a 10 per cent increase in the number of people employed in the manufacturing sector in 2010, whereas employment in the construction sector is still set to contract (by another 6.9 per cent). Consequently, there seems to be a rebound of economic growth (as seen in table 1) paralled with the resuming of exports from the key, and mostly Swedish dominated, engineering sector.

Section 5. Conclusions

Both Ireland and Sweden have been greatly affected by the recent global economic shock, albeit in rather different ways (asymmetric shocks). Although estimates and forecasts denote a rebound of economic growth in Sweden for 2010, the Irish economy seems to be entangled in the grips of a lasting negative growth. The key question posed in the current paper is the following: why is the economy of Ireland impacted upon more than that of a similar sized economy, namely Sweden? Does the

comparative analysis of the structure of production, and in particular of the manufacturing sector provide any insights?

The growth in the unemployment rate has been unprecedented in Ireland, with, so far, most of the job losses affecting the construction sector. Growth emanating from asset price inflation, spurred on by a combination of low interest rates, reckless lending and speculation has been proven as a poor foundation for sustainable growth in Ireland. The incommensurable challenge for Ireland at this juncture is to compensate the contraction of the cyclically-based construction sector with job increases in both manufacturing and services. The critical analysis proposed in this paper, which rests on a comparative examination of Ireland's industrial structure over a long period, assesses the chances of this adjustment to occur. This may all depend on the 'quality' of Ireland's productive structure, on its sustainability.

Starting with competitiveness issues, although we do agree that (price) competitiveness does matter to some extent, insights from the current paper highlight however that a high cost economy such as Sweden can still have a more 'sustainable' growth rate than that of an economy such as Ireland. This is due to the benefits that emerge from an economy which has adopted a more balanced approach in terms of firm ownership, and due to an industrial policy which placed innovative indigenous firms as a cornerstone of its industrial strategy. The Swedish strategy led to the establishment and growth of large Swedish firms in the growing engineering sector, to the assistance of industries in decline through redeployment of displaced workers away from traditional lower value-added activities towards more complex industries in higher value added activities and to a relatively strong focus on SMEs and stimulating exports.

As a result of these different paths in terms of industrial policy, our comparative analysis leads to the following findings: (i) the MNE/indigenous dichotomy does exist in both countries indeed, but in Sweden it is not reducible to a large (efficient) firms/small (less efficient) firms dichotomy. (ii) In Ireland, foreign firms are highly concentrated in large and high-tech manufacturing activities, whereas in Sweden they are more evenly distributed across manufacturing and services. (iii) Foreign firms represent 15% of total employment in Sweden whereas foreign firms (mostly US-owned) *control* high technology manufacturing activities in Ireland. By contrast, indigenous firms control the highly export oriented and technology-based engineering sector in Sweden. Consequently, the US-dominated 'complex' manufacturing sector in Ireland, combined with the current disarray experienced by the US economy do not augur too well in terms of allowing manufacturing activities to take over from the building sector in Ireland. This should be contrasted to the resilience of the Swedish economy which, when compared with Ireland, seems to be linked to its ability to 'master' its own destiny.

The overall answer that begins to emerge from the preliminary analysis is that economic sovereignty may play a role-defined for the purpose of this paper as the relative importance of indigenous firms in the manufacturing industry in a particular economy. The implication is that economies which place a greater emphasis on an indigenous industrial development strategy increase their probability of being less vulnerable (due to increased independence) to shocks which affect their industrial manufacturing sector. Indigenous firms are likely to be more embedded into

local/regional economies and are less likely to be as footloose as MNEs when the going gets tough. When growth resumes, it is likely that positive adjustments will be easier and quicker in the case of Sweden (where an expansion of production can be instantaneous, thanks to a quality indigenous industrial/manufacturing base), than in Ireland, where such expansion primarily depends on inward FDI.

Policy implications are therefore clear: adopting a more balanced approach (in terms of the mix between indigenous and foreign firm ownership); promoting structural change in indigenous firms (as in the Swedish case); promoting entrepreneurship and innovation (which has nevertheless been making progress from a relatively low base) are key strategies for Ireland's future. On a more general level, we would argue that the poor evaluation culture in Ireland (as argued by Lenihan (1999; 2004); Lenihan et al (2005) and Lenihan and Hart (2004)) did not help the Irish government to see the 'error' of its ways earlier. We would go so far as to argue that if on-going thorough evaluation at both the micro (firm) and macro levels had been an inherent part of the industrial policy process, this imbalance of focus by policymakers on indigenous versus MNE firms would in all likelihood have been recognised earlier.

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