

Enterprise Policy and Ireland's Economic Recovery

Seán Ó Riain

Sociology and NIRSA, NUI Maynooth

sean.oriain@nuim.ie

Presented at Nevin Economic Research Institute, Dublin

January 2014

Enterprise Policy and Recovery: Rediscovering A European Model for Small Open Economies

Enterprise policy – the complex of varying policy measures that support economic activity in private or semi-private enterprises – is a crucial element in economic recovery. This is in part due to its employment promoting effects but also due to its significant place in broader economic development strategies and social contracts. Indeed, enterprise policy is part of a broader emphasis on social and economic investment that has been central to the most successful economies – including, most relevantly for Ireland, Europe's small open economies.

In this regard, we might expect enterprise policy to be a central focus of recovery strategies within the Eurozone. However, with some minor exceptions, this has been a largely neglected dimension in the European response to the Great Recession. The dominant policy frame has focussed on improved cost competitiveness and 'structural reforms' as the key to enterprise success in the coming decade, particularly in the European periphery.

There are deeper issues here that relate to the European project as a whole – in particular whether the European Union can move beyond a European economic policy predicated on underdevelopment in the periphery ensuring a relatively weak currency for 'core' export economies to a genuinely integrated economy, based upon a development and investment union and balances demand across the region. It also speaks to the limits of the European response as a whole, and how it has departed from the classic 'European model' of growth, not so much in its reluctance to adopt Keynesian monetary policies but in the weakness of its investment and social protection measures, especially in the periphery where it is

effectively enforcing policies that will shrink the already relatively weak efforts in these directions.

However, we approach the more specific elements that are relevant to Ireland at the current time. The paper has three main parts. First, it briefly reviews sectoral employment trends to outline some of the major shifts in Irish industrial development in recent decades and to argue that the recent welcome improvements in employment suggest that classic developmental challenges remain. Second, it briefly reviews some significant approaches to enterprise policy and economic development and argues that recent research on ‘networked’ forms of developmental state can shed significant light on the prospects for effective enterprise policy. Third, it outlines possible lines of action in each of a number of key areas of enterprise policy, arguing that while there have been a number of interesting developments in policy since 2008 that important policy choices remain open.

Ireland’s Persistent Dilemma of Underdevelopment

In the 1990s employment growth was spread across the high tech sector with impressive growth in computer manufacturing, chemicals, medical devices, software and financial services. Foreign owned firms dominated employment, but for the first time in Ireland’s economic history, Irish owned firms significantly increased employment in export-oriented technology sectors. The success of Irish owned firms was only partly derived from linkages and spin-offs from foreign investment (Ó Riain, 2004b). While the rise in financial services employment may have ultimately proved a mixed blessing, the growth in the software industry was a genuine success. The signs of coming challenges were also present in the continuing decline in sectors such as textiles and clothing, but they were masked by the rise in high tech manufacturing (Ó Riain, 2010).

These partial but significant successes of the 1990s were linked to rapid growth in exports. However, in the 2000s, the dynamic of growth shifted from exports to domestic consumption – and in particular to the property/finance bubble. Nonetheless, although this headline story is broadly accurate, it obscures much of what happened within the industrial development process over the past decade. In practice, while the economy as a whole shifted towards the asset bubble economy, industry underwent a significant recomposition.

Based on EU-wide data Table 1 provides a snapshot for Ireland of each manufacturing and international service sector’s employment in 2007, how employment changed in each sector in the late 1990s and through the 2000s, and which European countries gained the most employment in each of these sectors across this ten year period from 1997 to 2007. This provides a picture of not only trends in Irish export industry employment but also of the major competitor locations for foreign investment and the other growth economies in each sector across Europe. The high profile ICT manufacturing sectors grew in the late 1990s but

declined dramatically in the 2000s. This applies to both office machinery and computers and communications equipment and to the manufacturing of software (“recorded media”). Related areas declined more slowly or saw relatively slow growth, including general machinery manufacturing and supply industries such as rubber and plastic. Nonetheless some manufacturing sub-sectors have done reasonably well. In particular, medical devices has replaced information and communications technology as the lead manufacturing sector in Ireland. While the output of the chemicals and pharmaceuticals sector has increased enormously this has not translated into major employment growth in the 2000s. Export service sectors have also seen rapid growth in employment, with software a particularly dynamic sector (Ó Riain, 2004). Indeed the number of jobs added in computer software per annum was roughly the same in the mid-2000s as in the late 1990s and the level of employment would be significantly higher if not for the dot com bubble of 2001-2003.

The overall stability of the Irish export sector from 1997 to 2007 masks a number of different trends. First, there were important changes over time. The late 1990s saw significant growth in almost all areas. This was slowed dramatically by the dot com bubble of 2001-2003 which coincided with the inflation and wage push in the general macro economy. While sectors such as software recovered from the dot com fiasco others such as computers and communications equipment never did and went into significant decline. Second, over time, Ireland lost employment in the labour-intensive low or medium tech sectors. Irish wages rose rapidly in the 2000s as did productivity (although the meaning of productivity in Ireland comes with a health warning given transfer pricing and other accounting arrangements in transnational corporations). Nonetheless, compared to competitor countries in Eastern countries Ireland’s wages were significantly higher – and indeed would have been much higher even had they not increased at all across the period. In these sectors the main competitor countries were in Eastern Europe, although Spain also gained in many of these sectors in the late 1990s. Similarly to Ireland Spain saw a boom in export manufacturing employment in the late 1990s which was side-lined by a property and credit bubble in the 2000s.

Table 1: Employment in Export Sectors 1997-2007

Sector	Total Irish Employment 2007	Change in Irish Employment 1997-2001	Change in Irish Employment 2001-2007	Leading Countries Gaining Employment 1997-2007 (Indicative)
Office machinery and computers	12175	4440	-7603	Poland
Electrical machinery	7657	-654	-5516	Czech Rep Poland Spain Slovakia Romania
Communication Equipment	7782	-758	-4999	Czech Republic Slovakia Finland
Machinery n.e.c.	12715	-1103	-1262	Spain Austria
Recorded media	15274	1195	-3559	Spain Poland
Chemicals	23999	3305	231	Spain Belgium
Rubber and Plastics	9671	-451	135	Czech Rep Poland Spain France
Non-metallic minerals	11821	1007	1184	Spain
Fabricated metal	14242	1229	1289	Spain Poland
Medical Devices	25846	5294	5914	Spain Italy Misc. Others
Computer Software and Services	33546	10238	14370	Germany France Italy UK Misc. Others
R&D	3181	543	2380	France UK

Source: CSO

Third, the sectors where employment expanded significantly also expanded in the major core economies of Europe. Wage competition was significantly less important in these areas. Ireland lost out in the lower wage, more labour intensive sectors and a failure to control cost competitiveness hastened the loss of those jobs. However Ireland made greater progress in sectors where it was competing with other high wage economies to develop more sophisticated industries including medical devices and software.

Given the inevitability of some increasing costs during and after Ireland's economic boom, a movement into higher wage, more sophisticated sectors was an inevitable challenge to be managed by the Irish political system. However, while this management was relatively effective in the late 1990s, it was much less so in the 2000s. Failing to manage cost competitiveness resulted in dramatic declines in certain sectors where Ireland was already exposed. At the same time, and arguably more importantly, the expanded industrial supports for the kind of transition to more sophisticated sectors that could have ensured continued job growth were not forthcoming and, as we will see, 'development effort' in key areas declined.

Many of the long-standing features of Irish industrial development remain. Ireland still has significant elements of an entrepôt economy, with various goods, royalties, licences and funds flowing through the economy with little connection to productive activity. This is true of services as well as of manufacturing, with royalties and licences and merchanting playing a significant and poorly understood part in services trade. However, there are also signs of genuine industrial development across a number of sectors, even in the face of the setbacks of the bursting of the high tech bubble in the early 2000s and the externalities associated with the property/finance bubble of more recent years. In addition, existing sectoral definitions may understate the degree of transformation and potential development in Irish industry. As one study that examined company and product level data noted: "from a capabilities perspective, Ireland has assimilated certain technological, manufacturing and managerial capabilities primarily from the presence of multinationals and supported by HEI [Higher Education Institution] investment that can be the drivers of economic growth" (Ryan et al, 2010). While much may have been lost in the past decade, we go too far if we consider it a completely lost decade.

The crisis of 2008 affected employment primarily in construction and in service sectors affected by collapsing domestic demand. While industrial employment suffered, for the most part export oriented services employment (in particular computer services) continued to grow at a slow but steady rate – although the numbers were not large enough to make a significant dent in unemployment. However, recent quarters have seen improvements in the employment picture, particularly in Quarter 3 of 2013, when 58,000 (primarily full time) jobs were added. What does the profile of the recent employment increases tell us about the apparent path to recovery in Ireland and the implications for industrial development?

Table 2 shows the trends in sectoral employment, expressed in the total number of working hours in each sector in the third quarter of 2009, 2012 and 2013 (thus controlling in part for the shifting mix of part and full time employment).

Table 2: Trends in Total Hours Worked by Sector, 2009-2013.

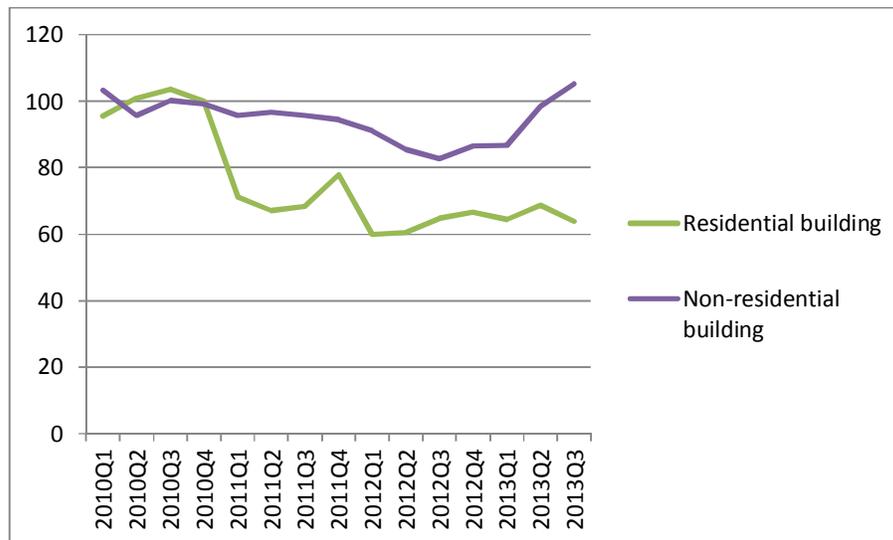
	2009-2012 (q3)	2012-2013 (q3)
All NACE economic sectors	-4.4%	1.1%
Manufacturing (C)	-4.6%	4.1%
Construction (F)	-35.6%	5.5%
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	-0.6%	-0.8%
Transportation and storage (H)	-4.0%	-3.6%
Accommodation and food service activities (I)	-6.3%	13.2%
Information and communication (J)	5.0%	1.4%
Professional, scientific and technical activities (M)	-2.4%	9.8%
Administrative and support service activities (N)	1.9%	-5.0%
Public administration and defence; compulsory social security (O)	-7.2%	-1.1%
Education (P)	-0.6%	-1.8%
Human health and social work activities (Q)	3.3%	-2.0%

Source: CSO, *Earnings, Hours and Employment*

In this analysis I leave aside the significant growth in agricultural employment which, given the lack of growth in output, seems likely to be largely a form of social protection or even labour market ‘exit’ rather than evidence of sustained growth in the farming sector. Aside from this, there are a number of trends at work in this table.

The first story is that of the effects of austerity with retail employment declining slightly and public service hours generally declining, alongside the exit to farming. The second story is more complex, but also familiar – the signs that the property sector is beginning to shape employment trends once more. This is reflected first in the increase in construction employment (related almost entirely to specialised construction and civil engineering). This in turn is linked strongly to (largely international) investment in non-residential real estate (see Figure 1).

Figure 1: Construction Activity Index, Residential and Non-Residential Construction, 2010-2013



Base, 2010=100

Table 3: Employment in Detailed Professional and Administrative Services Sectors

	<i>Employment</i> 2013 Q3	2012 Q3- 2013 Q3	2011 Q3- 2013 Q3
62 Computer programming, consultancy and related activities	45.2	3.4	9.3
63 Information service activities	5.9	-0.2	-0.3
64 Financial service activities	67.3	0.4	5.0
65 Insurance, reinsurance and pension funding, except compulsory social security	21.8	3.3	2.5
68 Real estate activities	7.9	-1.5	-1.3
69 Legal and accounting activities	30.3	6.5	7.6
70 Activities of head offices; management consultancy activities	5.3	-1.7	-2.3
71 Architectural and engineering activities; technical testing and analysis	28.9	0.3	3.2
73 Advertising and market research	7.6	0.9	1
74 Other professional, scientific and technical activities (legal, accounting, architectural, technical testing, recruitment etc)	31.1	5	5.2

It is also linked to expanding sectors within manufacturing and services. Among the manufacturing sectors expanding over the past year are wood (in 2005 45% of its output

went to construction), general manufacturing (10%), fabricated metals (40%) and electrical supplies. While there has been some growth in manufacturing it is notable that investment in manufacturing (capital acquisition minus capital sales) declined significantly over the past year, with the exception of increases in paper and published media, electrical equipment and textiles. Furthermore, Table 3 shows that much of the improvement in business and professional services is in areas that have historically been closely linked to the property sector – including legal and accounting activities, architecture and other services.

The final area of expansion has been in the market service sectors of accommodation and food service. These are the sectors where the recent small improvements in domestic demand have manifested themselves, rather than retail which has declined slightly. There are some puzzles here as the service activity index does not show any great improvements in these sectors. Nonetheless, we might speculate that the recent improvements in managerial and professional wages and the increased tourism revenues (up by €325 million on the first three quarters of 2012) might be likely to yield this pattern of services spending.

Overall, the composition of the employment upturn speaks of a continuation of some underlying trends in the Irish economy. The key dilemmas of the expansion of low wage services and the importance of the property sector are both evident here. The effects of property reach into both the manufacturing and services sectors, where the property economy and the export economy may well compete for the hearts and minds of investors, lenders and those within and entering the expert labour force. In short, Ireland's developmental challenge remains.

Approaches to Enterprise Policy

The sceptical view of industrial policy focuses public policy efforts on stabilising the fiscal and financial crises while reducing costs and promoting privatisation in order to generate efficiencies (Lane, 2011; McCarthy, 2011). Once these tasks have been achieved, private enterprise can provide the necessary momentum towards industrial development. Government agencies and policies are likely to, at best, waste scarce resources and, at worst, damage industrial development through misallocation of resources, distortion of incentives, and so on. This leads to a dual policy focus on ensuring competitiveness (where policy focuses primarily on costs and especially wages) and 'structural reform'. The latter is often ill defined but generally refers to liberalisation across a variety of dimensions, particularly labour market and product regulation. However, there is significant evidence that these structural reforms will not generate the promised benefits, particularly under current macroeconomic conditions (Eggertson et al, 2013). In addition, Ireland appears poorly placed to gain much benefit from such reforms given that it already scores on the liberal end of almost all indicators of employment and product market regulation (Ó Riain, 2014). This is not to dismiss such concerns – for example, social democracies are deeply concerned with questions of competitiveness and competition, but only in combination with

a wide range of measures and institutions providing protection and promoting participation that prove crucial to making these policies work.

These arguments should give some comfort to a second view of industrial policy, which is closer to that of the industrial development agencies themselves. Government operates a twin strategy, working closely with firms to attract them to Ireland through close connections and enhancing Ireland's attractiveness as a location, while at the same time promoting targeted research, company financing and other initiatives that are aimed at attracting major corporations and generating new firms from these high end research and funding inputs. Such an approach emphasises the targeting of resources at key sectors and new technological markets, suggesting some elements of an approach based on 'picking winners' (although not targeted at the selection of specific 'champion' firms).

This is broadly in keeping with the argument of Giovanni Moretti (2012), recently cited approvingly by the Minister for Jobs, Enterprise and Innovation. The centres of innovation lie in the large global high technology firms and the focus of policy is attracting them. Once attracted, they generate significant spillovers to other firms, employment and wages. While Moretti's arguments can be contested for the US, it is clear that the Irish experience of attracting large corporations has not generated spillovers on the scale that Moretti suggests, particularly in terms of generating an indigenous dynamic of innovation. Also focused on large firms in leading sectors, Mazzucato (2013) argues that these firms have benefited significantly on government-funded research and other public goods that have been essential to iconic consumer goods such as the iPod. Funding basic and applied research is crucial here but Mazzucato (2014) argues vigorously that the returns from the corporate sector for this public investment have been poor. Issues of low corporate tax payments and weak social returns in terms of employment and investment are of course familiar in the Irish context.

In many respects, the dominant strands of Irish enterprise policy combine both these strands – layering a state-directed system of targeted supports for attracting and supporting global high technology firms over a general model that is based on low taxes and other 'liberal' measures such as tax incentives and renewed efforts to restore cost competitiveness (e.g. Action Plan for Jobs, 2013) . These two models operate largely in isolation with different institutional actors and target firms. This combination does little to tackle some of the significant structural weaknesses of the Irish industrial system. Existing industrial policy has been relatively weak in addressing the links between the domestic and export economies. As Perez (2002) argues, the next phase of growth after a boom/bubble like the high tech bubble in the early 2000s is for these new technologies to diffuse into the broader private sector. However, Ireland is particularly badly placed in this regard – the capabilities of the new technology industries have only diffused weakly into the rest of the economy. This is partly because of reliance upon foreign investment but is also due to weak state investments in broadband and other key infrastructures, and more broadly in the

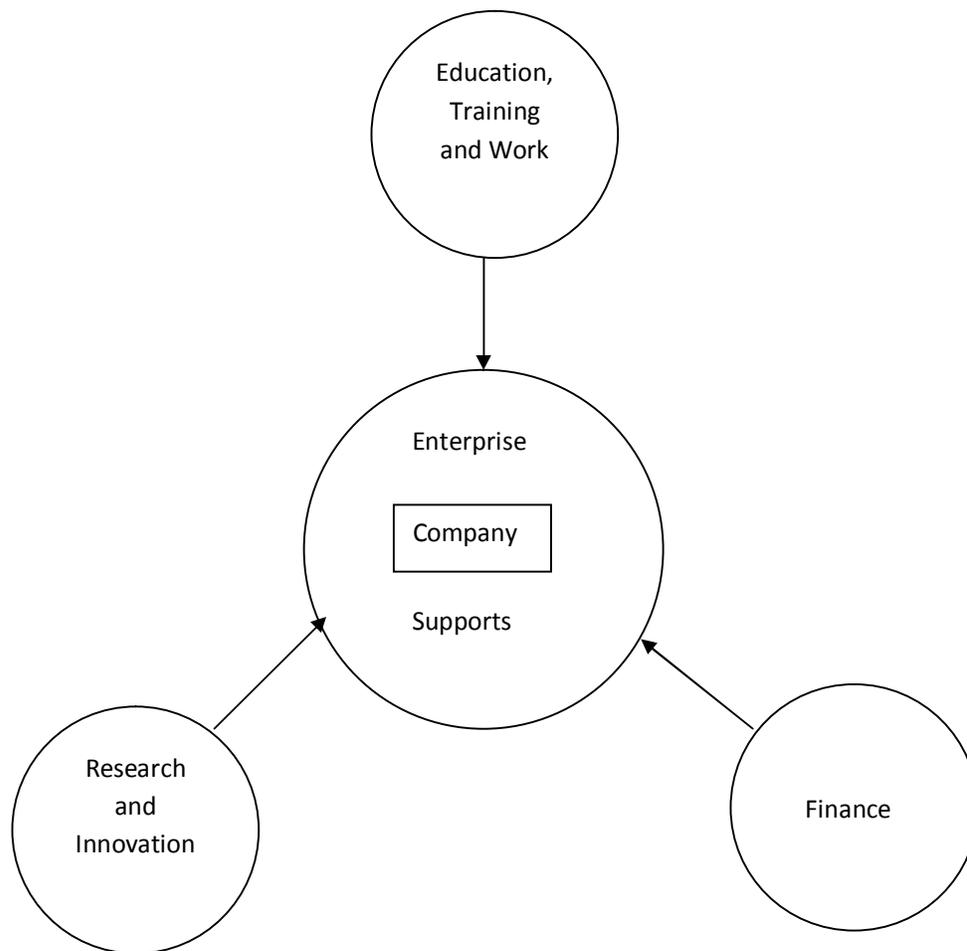
narrow base of system of innovation and industrial policy. Such connections between the export and domestic economies and between the 'high tech' and 'medium tech' sectors are crucial to a more generalised pattern of industrial and economic development (Perez, 2002).

Enterprise policy need not depend on a belief in all seeing government planners, nor must it be restricted to government doing little more than setting the framework conditions for private sector initiative. Even as they have spent the past decades lauding markets, government agencies around the world have been experimenting with new ways of supporting enterprise and figuring out how to connect research to industry, how to build skills and knowledge, and how to finance employment growth. In economies as different as Finland and the United States, as Israel and Taiwan, government has played a critical role in the growth of successful innovation economies (Breznitz, 2007; Block and Keller, 2009; Saxenian and Sabel, 2009; Rodrik, 2007).

As we will see, these new experiments in industrial policy share a view, often unexpressed, of firms as embedded in the society around them. Firms are economic actors who depend deeply upon the social worlds of production around them, competing with others in those worlds but also sustained by the capabilities within them. As companies grow and develop, they draw on a wide variety of external supports – for skills, for technical and scientific background, for financing, for marketing and management, for information about industry developments, for widely held assessments of uncertain trajectories of change, and many more.

All of these dimensions of the social worlds of production are crucial to firms – in different ways for different sectors at different times. But these capabilities need to be sustained and developed and those who benefit from them cannot always be relied upon to carry out this task. This is all the more so as we move from an economy dominated by huge, hierarchical corporations to one where networks of companies, large and small, have become the main way of organizing the economy. For Ireland, where almost all indigenous companies are SMEs, external supports are crucial. Government policy can develop those supports, can encourage others to provide those supports and government agencies already play a crucial role in ensuring these supports exist and can get to the companies that need them. Figure 2 outlines schematically this view of how companies are embedded in broader systems and how these create significant interdependencies between different policy areas.

Figure 2: The Embedded Firm and Enterprise Policy



Therefore, this approach re-thinks the first view of industrial policy, making it clear that it is about setting and reproducing the correct ‘conditions’ for firms but that this task involves a much deeper and wide ranging role for policy than the conventional view suggests. In addition, firm actions are shaped by the cultures of these worlds, or what Fligstein (2001) calls the dominant ‘conceptions of control’ or which strategies are taken at any particular time in a particular industry to be ‘rational’. The failure to discipline lending and to allow it to follow a ‘conception of control’ that favoured property rather than productive investment resulted in the wasting of Ireland’s greatest opportunity for a major leap in industrial development. But there are also less dramatic ways in which firms’ actions can be shaped to promote industrial development. The favouring of export oriented firms over domestically oriented firms is one mechanism through which policy changes industry culture and shifts firm preferences. The networking of firms together to promote collaboration and social learning is another. The second view of industrial development as based on conscious

state action is again partly right, but often misinterprets that state action as having to be more rational than, or out-think, private actors.

The close engagement of state agencies with firms does not necessarily involve 'picking winners' but can involve 'making winners' through three main mechanisms - the production of new industry capabilities; the creation of spaces where different actors can network their capabilities together and create new projects; and the promotion of 'conceptions of control' that are favourable to industrial development, shifting firms' abilities and preferences. Indeed, as we have seen, in Ireland state innovation and industrial policy has often operated through largely unrecognised decentralized networks of supports – what I have called elsewhere a 'developmental network state' (Ó Riain, 2004a).

The comparative evidence suggests that this is not specific to Ireland – nor even particularly well developed here. The Nordic economies have been resurgent in recent years based on innovation across a range of industries ('high tech' in Finland, but 'medium tech' in Denmark, for example). But these innovation economies have been driven by a set of factors that extend well beyond a model that relies heavily on the commercialization of science. Public and private investments in human capital and research are among the best in the world but these investments are supported by two further sets of factors – (1) an 'experimentalist', networked system of governance that has produced a diverse set of institutional mechanisms for policy formulation and implementation and (2) an enabling welfare state system and active labour market policy that supports high rates of labour force participation and utilization of human capital (Kristensen, 2007; Huber and Stephens, 2002).

But the model of innovation policy applies elsewhere too. In Israel and Taiwan, this took different forms as Israel built on an existing scientific community to grow and diffuse the research system and Taiwan built on its infrastructure of public science and networks of transnational entrepreneurs (Breznitz, 2007; Saxenian, 2006). In all of these places measures included R&D support, networks of supports for enterprise development, efforts to stimulate early stage venture capital, mobilising migrants and technical communities, building science parks, sponsoring industrial associations and more generally fostering global high tech regions through a decentralized network of supports.

In the US too, the growth of a 'developmental network state' has played a key role in high tech dominance – even if hidden from public view (Block, 2008). Jenkins, Leicht and Jaynes (2006) find that technology grants and loans and technology research parks directly contribute to growth in regional high tech employment; that public venture capital and business incubators boost existing high tech employment; that measures to support technology development and technology transfer help make up technology deficits in particular regions; and that interactions with local conditions and with other programmes are important.

Block and Keller point out the growing significance of the public role in high tech – notably through a wide and networked system. “R&D Magazine has been recognizing the one hundred most innovative commercial products introduced in the previous year. In 1975, forty-seven out of eighty-six domestic innovations were produced by Fortune 500 companies, and forty of these involved no outside partners. By 2006, the big firms were responsible for only six out eighty-eight innovations, and in most cases, they had partners. In 2006, fifty of these innovations were the products of researchers at U.S. government laboratories, universities, or other public agencies, working alone or in collaboration with private firms. Another eleven innovations came from “supported spin-offs,” relatively new firms started by scientists or technologists that had received considerable Federal funding both before and after the firm’s founding. Of the remaining twenty-seven innovations that belonged to private sector organizations, at least another sixteen involved Federal dollars. In short, all but eleven of the prize-winning innovations in 2006 depended on some public financing” (Block and Keller, 2009).

All this becomes more crucial as the global system of innovation shifts in its character – from a system based primarily around major corporate labs such as ATT and IBM to one where research workers and research spending are increasingly located in smaller firms and where innovation projects typically draw upon a network of participating firms, and other non-commercial organizations. This system of ‘open innovation’ (Mowery, 2009) challenges the singular policy emphasis on attracting and growing major research-based companies, given that it is the fostering and development of participation in such networks of innovation that is crucial.

Ireland’s Changing Institutions of Enterprise Development

As noted above, Ireland has a history and some institutional capacity in this regard. Ireland’s focus on foreign investment and its formula for attracting it are well known and are not my focus here. The 1990s saw the development of new strategies for industrial upgrading and particularly the support of indigenous enterprise. Grant aid was comparatively small but was an access point for a network of supports that included R&D grants, management development, employment grants, mentoring networks, and more. State agencies sponsored the activities of industry associations and technology centres. The state played a critical role in constituting the social world of production within the industry (see Ó Riain, 2004 for a fuller account).

The existing evidence suggests that the work of public institutions has been effective. State aid to exporting companies has been found to have promoted manufacturing employment in the 1980s (O’Malley et al, 1991) and in the 1990s, where Girma et al (2007) showed that domestic companies were particularly likely to add employment when receiving public subsidies. Research into Irish-owned software firms in the 1990s showed that those firms that received the most state grant aid exported more, employed more people and grew faster – even when controlling for firm size (Ó Riain, 2004a).

The business lending expertise that exists among private institutions is at least as developed in the public agencies. Indeed, quite early in the course of the economic crisis, officials from Enterprise Ireland were sent to advise staff in the banking organisations on business lending (NESC, 2012). The engagement between state industrial development agencies and export oriented businesses over a period of some decades has resulted in significant organisational learning (Ó Riain, 2004a). Comparative analysis of similar kinds of innovation and business development policies in Ireland, Israel and Taiwan suggests that it is this long-standing institutional commitment and learning that is crucial to an effective state role, as much as the direct funding that is provided (Breznitz, 2007).

When the system works best, firms are surrounded with a network of supports that are vital resources in their development. The issue is not simply the provision of finance – and in any case the amounts involved are small, especially compared to countries such as Israel (Breznitz, 2007). Perhaps more important is the learning that takes place in the connections between companies and funding agencies – firms are encouraged to develop new skills and supported to pursue new activities, while government agencies can keep their finger on the pulse of developments in industry. The funding agencies are able to demand of firms that they provide some improved performance in return for funding. A strong and consistent presence of state institutions is crucial to industrial upgrading as these public agencies can act consistently to support the broader project of industrial development, where firms' concern is primarily with their own return on investment (Breznitz, 2007).

Supports for enterprise delivered through the industrial development agencies continued to be a pillar of Irish industrial policy in the 2000s. These supports changed somewhat with a great focus on the 'scaling up' of Ireland's typically small companies and the targeting of key firms for growth and internationalisation. A greater percentage of grant aid also went towards research, marketing and other areas of 'upgrading' rather than on capital equipment or employment grants (Ó Riain, 2010).

Ornston (2012) compares corporatism in Ireland unfavourably to the forms of corporatism in Denmark and Finland. He argues that there are three main kinds of corporatism – a "conservative" version which sought to manage employment relations in a stable economy (and which was the primary form analysed in the literature on 'old' social pacts); "competitive" versions which controlled inflation, managed public spending and delivered wage restraint in order to make industry competitive; and a more dynamic, innovative "creative" form in countries such as Denmark and Finland where corporatist agreements allow for institutional innovation and the negotiation of often profound adjustment to economic change. In the creative model of corporatism, politics was able to both promote and shape the direction of dynamic change within the economy and society.

Ornston identifies the provision of risk capital, the provision of supports for training and other forms of labour market adjustment, and the provision of supports for research and development to facilitate industrial adjustment and upgrading as key policy measures in

creative corporatist systems (reflecting the view of the embedded firms noted above). While acknowledging that Ireland made efforts in all of these areas, Ornston ultimately classifies Ireland as a competitive corporatist economy. However, a closer look at Ireland in comparative perspective suggests a more complex pattern. Table 4 provides a comparative look at “competitive” Ireland, “creative” Denmark and Finland, “conservative” Austria and Belgium and the liberal UK for each of these three key policy areas, for both private business and public sector. The analysis provides indicators for both the late 1990s and mid-2000s, with the specific periods indicated in the table notes. Most of the indicators are offered as a percentage of GDP and it should be noted that this generally underestimates Ireland’s efforts in these areas because of the significant gap between GDP and GNP.

Looking first at the late 1990s there are a number of important aspects to Ireland’s comparative position. Firstly, it is strikingly different from the UK, especially in the area of public supports for business, which are much higher in Ireland, and in public spending on active labour market policies, which is almost non-existent in the UK but was very significant in Ireland in the late 1990s. This is particularly important given that these spending figures relate only to active labour market policies and not to “passive” spending such as unemployment assistance. Ireland differs significantly therefore from the liberal UK in the activism of its public agencies in support of business and labour activity. Comparisons with other small open economies in Europe are also instructive. Except for research and development investments, where Ireland has historically been particularly weak, Ireland’s efforts to develop business through risks capital and public aid and to activate labour were significantly higher in the late 1990s than in the classically “conservative corporatist” countries of Austria and Belgium.

Table 4: Key Indicators of Types of Corporatism in Selected European Economies, Late 1990s and Mid-2000s

		<i>Ireland</i>		<i>Denmark / Finland</i>		<i>Austria / Belgium</i>		<i>UK</i>	
		<i>Late 90s</i>	<i>Mid-2000s</i>	<i>Late 90s</i>	<i>Mid-2000s</i>	<i>Late 90s</i>	<i>Mid-2000s</i>	<i>Late 90s</i>	<i>Mid-2000s</i>
Risk Capital									
<i>Business</i>	<i>Early Stage Venture Capital (% of GDP)</i>	5.2	2.0	6.7	4.5	4.4	1.2	4.7	8.7
<i>Public</i>	<i>Sectoral Aid (% of GDP)</i>	.69	.19	.81	.55	.37	.13	.18	.08
Active Labour Market Supports									
<i>Business</i>	<i>% of Labour Costs spent on Training</i>	2.4	2.2	2.7	2.1	1.5	1.5	3.6	1.3
<i>Public</i>	<i>Spending on Active Labour Market Policies (% of GDP)</i>	0.95	0.53	1.35	1.04	0.67	0.67	0.09	0.05
R&D									
<i>Business</i>	<i>Business Funded R&D</i>	.82	.70	1.48	1.93	1.31	1.72	.86	.74
<i>Public</i>	<i>Government Funded R&D</i>	.29	.38	.78	.79	.79	.84	.55	.56

Dates: Venture Capital, 1998-2001 and 2003-2006

Training, 1999 and 2005

Active Labour Market Policy, Sectoral Aid, R&D: 1996-99 and 2003-2006

Sources: EVCA (2012), Cedefop (2010), Eurostat

Notes: The Eurostat data on sectoral aid offers the advantage of comparison although only covering aid scrutinised by the EU. Irish data on grants and subsidies to enterprise (CSO, 2012) does not track this series directly but offers the same basic picture – with the CSO figures indicating that state aid consisted of 0.81% of GDP from 98-99 and 0.52% from 03-06. Note these figures are almost identical to the Eurostat figures for Denmark and Finland.

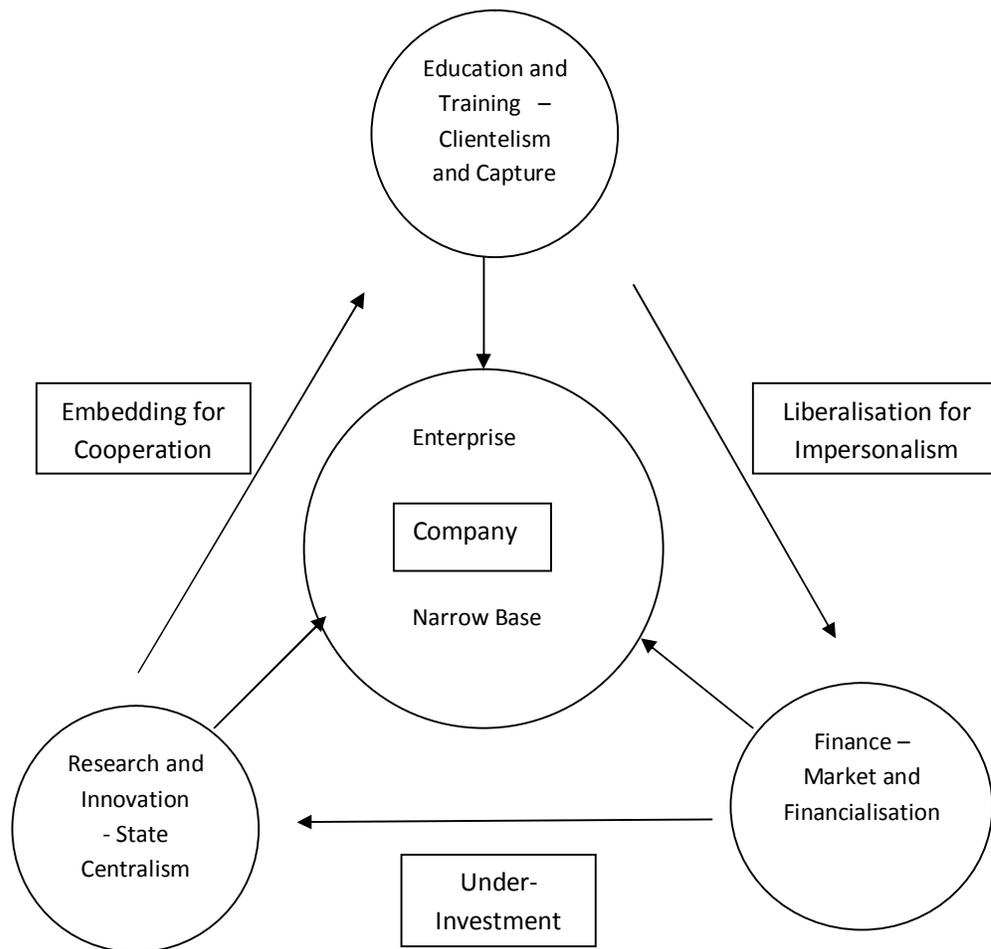
Figures given in % of GDP understate Ireland's spending effort, given the gap between GDP and GNP. An added 15% on to the existing figure for Ireland gives a truer measure of Ireland's share of national resources devoted to particular goals.

In the 1990s Ireland was comparable to Denmark and Finland in its levels of risk capital provision, driven by the state, and of supports for training – particularly impressive given that the Irish figures are underestimated due to the use of GDP. As an aside it is also worth noting that there are differences between Finland and Denmark. Both are high on R&D levels but Finland provides higher levels of risk capital, both through private venture capital and public state aid, and Denmark’s training effort is higher in both the private and public spheres. Nonetheless it is striking that in this period of the late 1990s Ireland appears closest to the “creative corporatist” economies in its provision of risk capital and training and active labour market supports.

The 2000s present a different picture. The profiles provided at the height of the financial bubble in Europe show that in most countries and in many different categories levels of support for economic adjustment declined. While this process varied across the different types of countries and different types of supports, the shift of Europe as a whole from developmentalism to financialisation is clear in the figures. In the UK, for example, business spending on training declined while venture capital increased. Denmark and Finland weakened their efforts in all areas of promotion of risk capital and labour adjustment. Ireland’s fall was particularly dramatic, except in the area of R&D where the State concentrated its resources during the period. Despite remaining at a very low level of R&D as a percentage of GDP, Ireland had one of the highest growth rates in R&D spending and personnel across the OECD. This was particularly the case in the public system. However in the areas of risk capital and labour market policy the Irish public effort declined very significantly, such that it fell well behind Denmark and Finland and, in the case of active labour market policy, even behind Austria and Belgium. Nor is it the case that Ireland simply did not need venture capital or active labour market policy in the 2000s. Indeed Ireland continued through the height of the boom to have one of the highest rates of jobless households in the European Union (Whelan et al, 2012). In addition, the challenges facing export industries based in Ireland in the 2000s were widely recognised and the need for significant additional support for the development of Irish owned companies, for example through the promotion of venture capital, was widely discussed.

In different ways, each of these areas was undermined in the 2000s. Finance for development was undermined by the speculative property investment complex of the 2000s (Ó Riain, 2012, 2014) – falling victim to the market. While the state put additional resources into research in the 2000s, an excessively directed and centralised system meant that the contribution of that research to broader innovation was undermined by an excess of statism. Finally, the active labour market system was dramatically hollowed out by political and clientelist capture – both by the organisations governing the system and those contracting with it. Enterprise policy can be undermined by a variety of different social and organisational logics, that may also be transformed into one another as tensions emerge in different fields (see Figure 3).

Figure 3: Undermining and Transforming Policy Areas



Ireland’s corporatism cannot be reduced to a “competitive” form. Significant creative corporatist elements were present in the 1990s and they were relatively successful in promoting industrial adjustment. Moreover, these ‘creative’ Irish policy efforts were comparable to, if not quite at the level of, the more dynamic European economies. This potential was not built upon and the 2000s saw a significant erosion of creative, developmental efforts by the Irish policy system and the growing dominance of “liberal” forms of state intervention such as the use of tax incentives. One of the current challenges is to reinvent the creative corporatism of the 1990s and extend it further into Ireland’s enterprise sector, in the face of much more challenging conditions for both firms and the state than in that era.

Recent Developments in Ireland's System of Innovation and Enterprise

This final section examines some recent developments in key areas of policy affecting enterprises, exploring these developments at a macro level across the four areas identified in Figures 2 and 3.

Capital

Ireland has historically low rates of productive investment. This is due to a variety of reasons that will remain, or even become more significant, if and when macro-economic stabilisation is achieved. Irish banks have a poor record in providing capital for investment. Even in the 1990s the contribution of the financial sector to growth was minimal (Honohan, 2006). The surge in bank lending in the 2000s systematically misallocated capital to the point where, in 2007, approximately two thirds of outstanding loans were related to property and another sixth to the financial sector itself (Ó Riain, 2009). The 'liberal' tax and regulatory regime around capital since the mid-1990s generated significant outflows, as well as speculative inflows, of capital.

There is little evidence that banking organisations have the relevant skills and orientation to promote productive investment. This is evident in the historical record of lending outcomes and practices (to the extent that we have information on the weak procedures around lending). Oversight by the private sector (bank shareholders, stock market, credit rating agencies) and by the public sector (Financial Regulator, Central Bank, ECB) failed significantly to tackle these organisational failures (Ó Riain, 2012).

The issue goes deeper into the organisational capabilities and practices of the banks themselves. The organisational practices that created the bubble are likely to be slow to change. In addition, the pressures for prudence in the re-capitalised banks are likely to create dis-incentives for business lending. Credit to businesses has recovered in recent years, but very slowly, and venture capital funding dropped precipitously until the past year.

The historical evidence in Ireland suggests no reason to expect that private lending and investment will lead recovery, even once conditions reach some degree of stability. Venture capital funding between 1997 and 1999 was led by public sources with private investors following only when growth was already underway – despite an environment which has been clearly stabilised and where the early signs of growth were well underway (Ó Riain, 2004, 2009). Similarly, it was public agencies that led the recovery of venture funding after the dot.com bubble burst in 2001 (Ó Riain, 2010). Among Irish firms, five sectors showed an increase of 5% or more in new lending between Q3 2012 and Q3 2013 - Fishing and aquaculture; Manufacture of food, beverages and tobacco products; Sale, maintenance/repair of motor vehicles, retail sale of fuel; Other wholesale/retail; and Other business and administrative services. However, the most significant surge in credit provided is to non-Irish borrowers in Real Estate, Land and Development Activities with a 12.1%

quarterly increase in transactions balance. The 'social structure of liquidity' that supported property and credit bubbles of the 2000s (Ó Riain, 2012) shows signs of persistence.

There are a variety of institutional mechanisms that shape the financing of development and that are open to public policy influence. These mechanisms go well beyond the role of regulators to provide the institutionalized prudence that can control the 'irrational exuberance' of financial markets.

Some of these relate to investment incentives. When capital gains tax was cut to 20 per cent in 1998, capital flowed into the economy. But as is well known, the vast bulk of that capital went straight into property and, to a lesser extent, financial speculation. Even if capital gains had been reduced selectively, the gains from investment could have been channelled into more productive areas like R&D. As it was, the exceptionally low tax rate combined with various schemes promoting property investments channelled financing away from high tech and other export sectors just when many of them needed that financing most to build international scale operations. Policy will shape the incentive structures for investment, one way or another. The key issue is in what direction, and through what mechanisms.

Furthermore, a direct role in financing development is also a central issue – especially given the largely hidden but highly significant role of public investment agencies in a range of countries. A variety of institutions channel credit to business – including private investors, banks, venture capitalists, and others. In Ireland, the state agencies have been a particularly significant funding agency for high tech firms, have led the building of a venture capital industry and have made effective investments (but see Breznitz, 2012 for the difficulties with this model arising out of the insistence that the state investment programmes 'pay for themselves'). On the other hand, these investments fall well behind the scale of the investments in promising firms made by other countries – including the apparently 'non-interventionist' US (Block and Keller, 2009; Mazzucato, 2013).

Nonetheless, a wide range of public schemes provide financing for enterprise at present (Department of Finance, 2013) – the challenge is to use these schemes to both support a diverse range of enterprises and to drive change in the private financial system. Indeed, the Department of Finance has been increasingly active in developing sources of funding for enterprise in recent years – involving increasing efforts to create investment funds for different classes of firms in Ireland (including small start-ups, larger firms and distressed firms). The broad thrust of the approach has been to sidestep the difficulties of the banks and to seek out non-bank sources of financing for enterprise. Alongside this, and sometimes entangled with it, has been a policy programme (in the Programme for Government) for developing a State Investment Fund, possibly turning over time into a State Investment Bank. The re-organisation of the NTMA, NAMA and NPRF in principle facilitates this by providing a strategic investment mandate within this cluster of agencies and by institutionally connecting the finance-raising and lending and investment arms of the state financial agencies. However, to date, this has not gone beyond the creation of specific

investment funds, managed through external private agencies. A state investment bank can play a crucial role in raising funding, organising financing and linking development finance schemes, and coordinating non-financial supports with enterprise finance (Ó Riain and O'Sullivan, 2011). Suggestions of support from the European Investment Bank and from the German state bank KfW have also been made. At present, these tendencies co-exist within the financing area. Indeed, there are increasing initiatives around investment in property – for example, establishing Real Estate Investment Trusts to attract small investors (with few similar opportunities for such investors to participate in similar mechanisms of investment in different sectors).

Innovation system

In the late 1990s, enterprise and innovation policy shifted. As science and technology policy became more politically important, the system of funding was centralized and greater emphasis placed on big science, concentration on particular sectors and central control of research. Serious amounts of money were ploughed into research in ICT and, especially, biotech through Science Foundation Ireland and the Programme for Research in Third Level Institutions. These funds were directed largely into areas that were seen as particularly relevant to the needs of the key multinationals and the main mechanism for building capacity was the attraction of 'world class' researchers into Ireland. The foreign investment model was imported into innovation policy. The shift of funding from core grants to SFI and PRTL, flattening of university core budgets, and increased linkage of funds to specific kinds of proposals (e.g. through the Strategic Innovation Fund) all contributed to a more centralized system of innovation. There is significant evidence that these additional resources, whatever the problems with how they were organised, were associated with very significant increases in scientific publications (McInerney, 2013).

Nonetheless, there is increasing concern about the development benefits that are obtained from the greatly increased research spending and output. The dominant imagery of science led development is that of the commercialization of scientific breakthroughs, giving firms and nations significant leads in both knowledge and markets. Some argue that research is essential and will yield great direct commercial benefits through spin-offs and other forms of commercializing research. Others argue that these benefits are greatly exaggerated. Lester (2008) points that in the US, where university-industry linkages are arguably most developed, that "the aggregate economic contribution of the university technology transfer model, as well as its economic potential in individual cases, has sometimes been exaggerated. The number of university-related startups is only a tiny fraction of the overall rate of new business formation. Similarly, university-held patents are only a minor contributor to the overall stock of patented knowledge.... This is not to dismiss the role of university-related patenting and new business formation. In specific regions, as well as in certain sectors such as life sciences, the impact is considerable.... It is also important not to hold unrealistic expectations about the economic benefits of technology transfer activities

to individual universities themselves. The probability that any given institution will derive significant financial benefits from its technology transfer activities is fairly low” (2008)

However, there is also significant evidence that societies with high rates of public and private R&D investment do better in terms of industrial development and economic growth. It is difficult to imagine a sensible strategy that involves abandoning public investment in research and science. So the question shifts to how economic benefits flow from public investment in basic and applied science, if it is not from direct commercialisation. How does science work in the economy? In many cases, the impact of science on economic development is more important in enhancing the overall capabilities of firms and sectors than in generating directly commercially rewarding pieces of intellectual property.

For example, Van Egeraat, Kerr and Ó Riain (2009) show that innovative biotech firms in Ireland have a variety of connections to universities, with commercialisation of basic science only playing a tangential role. One firm, for example, is located in a university, with no direct commercial ties, but in order to benefit from access to the community and intellectual engagement among biotech researchers on campus. Another firm began with the intention of developing a drug around a particular breakthrough but changed their strategy as the science and market dynamics changed. But their scientific training and milieu did not become less relevant at that point – in fact, it becomes more relevant as entrepreneurs and technologists engaged in search for new opportunities within the technology-intellectual property-commerce nexus. It was their scientific knowledge base, connections and immersion in the world of scientific research that gave the entrepreneurs the capability to search the biotechnology scene for new, related opportunities and to be able to assess whether those opportunities can be commercially exploited, given their skills and resources.

Lester and Piore’s (2004) research on innovation in the US suggests that these are not isolated cases. They argue that innovation depends heavily not just upon networks but upon the existence of public spaces where conversations can take place that are interpretative in nature and that allow for collaborative exploration and learning. In some cases, networks may be enough to sustain these public spaces – the literature on industrial districts and on transnational technical communities suggests that person-to-person networks can generate powerful systems of learning (Lester and Piore, 2004; Saxenian, 2006, 1994).

Lester and Piore also explore the role of more institutionalised public spaces where such creative conversations and interactions can occur. A crucial such space is the university, particularly critical because it is explicitly designed as a public space for interactive learning and dialogue. Lester and Piore argue that, while specific technological ideas and expertise from universities were important to firms, firms also particularly benefited from access to the social world of the university and the conversations within it. There are other less predictable spaces that emerge too – in the conversations between firms and regulators in the US (Lester and Piore, 2004), in the technological units of the Israeli military and the networks that persist into industry after soldiers doing national service move on to college

and employment (Breznitz, 2007), and even in the science policy community itself (Ó Riain, 2004a).

Therefore, the debate on the commercialisation of scientific research largely misses the point. Research is clearly critical to the knowledge economy and society, but its effects on enterprise are much more indirect than we usually think. The trick seems to be to build an excellent research base, while developing creative mechanisms for involving diverse companies in research activities and networking with researchers.

The recent research prioritisation exercise, identifying fourteen areas of funding priority appears to go against this perspective. However, if these areas are used to build organic connections in each sector and are flexible over time, this policy could still be turned to support research and business learning, rather than to narrow it. Recent developments in this area are significant. In 2012, a governmental initiative produced fourteen priority areas for research funding – including areas relating to ICT, medical devices and health, agriculture and marine, and manufacturing, services and process innovation (see Appendix 1).

The Industrial Development (Science Foundation Ireland) (Amendment) Act 2013 extended the remit of SFI to enable it to fund applied research and to fund bringing research closer to market; to link its funding priorities closely with those identified in 2012 and to extend its public outreach and international collaboration. In 2013 seven centres were founded with €300 million of funding, in the following areas: Big Data; Marine renewable energy ; Nanotechnology/engineered materials ; Food for health/functional foods; ; Photonics ; Perinatal Translational Research ; and Drug synthesis/crystallization.

Table 5 shows the significant decreases in SFI grant giving in the wake of the recession and the shift within this away from programmes centred on basic researcher led science to research centres and infrastructure. The focus on centres that facilitate industry-researcher interaction in specific industry-scientific areas may in fact lead to a shift away from a focus on simple metrics of commercialisation to an emphasis on interaction and collaborative development and learning. However, it also establishes a structure that concentrates resources into pre-identified areas in a structure that supports the activities of large, and especially foreign, firms. The benefits for emerging local firms are much less clear, especially given that many such firms appear to be emerging in different areas. The risks of a system that is driven by close interaction between a centralised state and leading global firms – long a feature of the Irish industrial system – remain.

Table 5: SFI grant giving 2007 and 2012

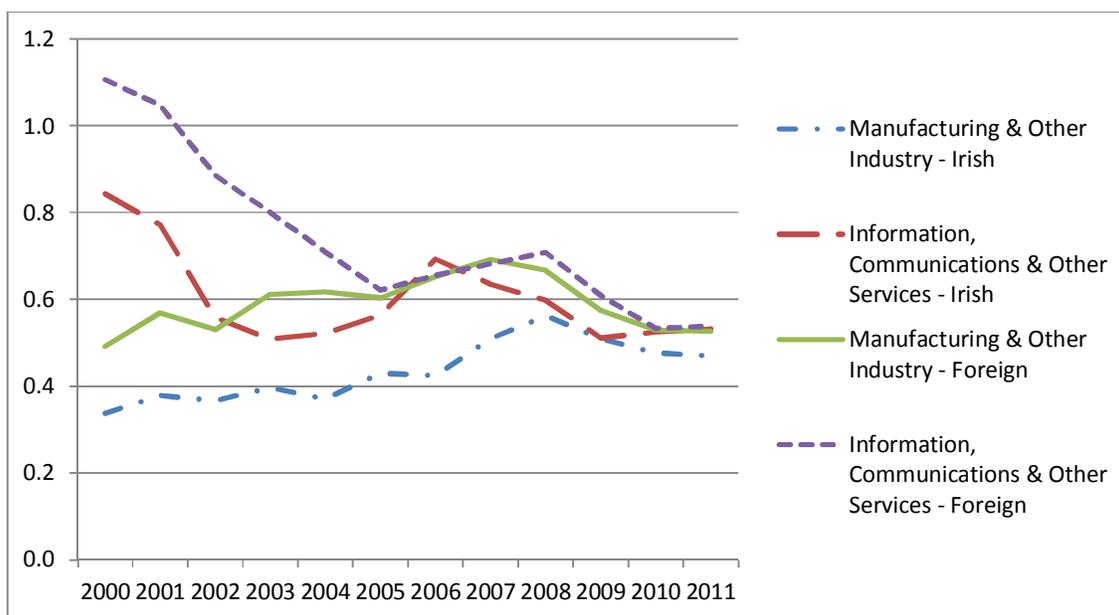
	2007	2012		2007	2012
Programme	Total Spending (€m)		Change in Total Spending 2007-2012	Programme as % of Total Spend	
Investigator-Centred Programmes				45.2%	28.7%
Research Frontiers Programme	33.1	7.1	-78.5%	9.1%	4.5%
Investigators	74.1	32.6	-56.0%	20.3%	20.8%
Stokes	57.9	5.4	-90.7%	15.9%	3.4%
Research Centres				38.3%	37.6%
CSET	22.5	36.5	62.2%	6.2%	23.3%
Strategic Research Clusters	90	20.4	-77.3%	24.7%	13.0%
Centres	27.8	2.0	-92.8%	7.6%	1.3%
Other				16.3%	33.7%
Research Equipment/ Infrastructure	31.2	34.9	11.9%	8.5%	22.2%
Other	28.4	18.1	-36.3%	7.8%	11.5%
Total	365	156.9	-57.0%	100.0%	100.0%

Source: SFI Annual Reports

Labour

I provide only the briefest of discussions of policies relating to labour, education and training. At the start of the Celtic Tiger era in the mid-1990s Ireland's system was heavily focused on a single strand mainstream education system that worked primarily to generate a third level graduate workforce, with relatively underdeveloped 'second chance' education, weak vocational and apprenticeship strands, and small numbers of postgraduate students. The 1990s brought an increased effort in active labour market policy at the lower end of the labour and the 2000s brought increased take-up of apprenticeships (primarily in construction) and the creation of a postgraduate labour force, as well as increasing diversification of undergraduate studies. In addition, company training spend has decreased overall – in absolute terms as well as relative to staff payroll costs – and particularly during the recession(see Figure 4).

Figure 4: Cost of all Structured Training per person employed (€1000s)



Source: Forfás (2013) *2011 Annual Business Survey of Economic Impact*

In the wake of the crisis, some important reforms have been undertaken. While there are significant challenges at the graduate and postgraduate levels of the system, most reforms have been focused at the lower end – including the reform and outsourcing of labour market activation systems, an enhanced role for the former county vocational education committees and a proposed reform of apprenticeships, and the formation of technological universities from the Institutes of Technology. The implications of these are briefly discussed below.

Enterprise

While Ireland’s industrial policy is activist, it is also highly restricted. The ‘client base’ of firms of the development agencies is small and the developmental impact of their activities is quite narrow. This raises questions of how policies can be applied more widely. Where government has been active in financing high tech, just as important will be ensuring the provision of working capital to viable enterprises through the recession, or to fund much smaller scale start-ups. Similarly, in the area of research and innovation, the importance of sources of innovation other than high end research must be incorporated into government policy. Hirsch-Kreinsen and Jacobson (2008) also argue persuasively that ‘low tech’ sectors can also drive development in Ireland and across Europe, and themselves depend upon innovation for competitive success.

Nonetheless, some of the industries that have developed over the past fifteen years that we think of as specialized ‘vertical’ industries’ could also serve as ‘horizontal’ sectors that would drive broader upgrading. These industries include software, logistics (typically linked to the declining manufacturing sectors), education, and even (perhaps) sections of finance. A capability based analysis of industrial structure could identify other such clusters of capabilities (Ryan et al, 2010). Policy measures could support the diffusion of these capabilities through industry/services as a whole – for example, through an inter-industry applications development fund where firms that sought to develop new applications that would advance on internationally available technologies and organizational processes could apply for development subsidies (e.g. a software company and a textile company, a logistics company and a publishing company). A services linkages programme that networked exporting firms with service providers through the development agencies could also be effective. The key element here is the possibility to creatively re-combine supports as required to support emerging sectors and clusters of firms that cut across sectoral lines. A too ruthless focus on the research prioritisation areas could undermine this, for example. Enterprise Ireland’s supports for firms are less sectorally focused, but the system of high level supports for innovation does not dovetail with this.

Supports have been extended somewhat beyond exporting firms to firms that compete primarily or substantially with imports. Such firms’ success increases ‘Ireland’s’ share of world markets just as much as exporting, import-competing firms are likely to be able to develop into exporting firms quite quickly and the opportunity to diversify the enterprise base would be enhanced. It is unclear how much this is being put into practice.

In general, however, it is clear that a much richer and complex engagement between export and domestic economies is required. In the most innovative small European economies, such relationships are important to the national system of innovation – in the form of inter-firm linkages, in the diffusion of international technologies and practices into the domestic economy, but also in the place of sophisticated local customers (whether private consumers or public procurement agencies) in promoting quality and innovation. Again, there are signs of significant experimentation within the Irish enterprise support system that could be the basis of such an enhanced engagement with the diverse range of domestic firms (NESC, 2012). The challenge is to develop and extend these capabilities.

Such an approach would also require an institutional structure that is akin to the development agencies in that they would need to provide a network of supports and also be able to promote and access supports for firms from across the business system. However, these agencies would have the challenging task of accessing these supports from within the smaller scale institutions of the Irish economy – local bank managers, county councils, Institutes of Technology, training agencies, and more would be involved. While it remains to be seen how they develop, the Local Enterprise Offices could play this crucial role, as long as

they become drivers of change within local authorities and are not simply assimilated within them.

Conclusion: Putting It Together

Table 6 summarises some of the key trends in enterprise policy in the years since the crisis of 2008. Some of these trends focus on market mechanisms – including state stimulated private financing and the outsourcing of labour market activation systems. Others rely more on centralised state governance, whether largely disciplinary (the HEA and the universities) or accommodating (SFI and IDA work with foreign firms). There are also efforts to create institutions that can tackle major gaps in the network of enterprise supports – including Enterprise Ireland’s extension of its mandate to additional firms, the integration of EI and the LEOs, and the reform of vocational education committees. I conclude with four sets of observations about these overall trends.

Table 6: Recent Institutional Trends in Enterprise Policy

	Capital	Labour	Innovation	Enterprise
Macro	Stimulating New Private Sector Financing State Investment Bank?	Intensified HEA control of universities	CSETs Research prioritisation	FDI Focus Extending footprint of Enterprise Ireland
Micro	Bank reform?	Education and Training Boards Apprenticeship Reform Outsourced ALMP	Technological Universities?	LEOs

First, there have been significant institutional changes and experiments since 2008, but these have followed in many respects the patterns of existing dominant institutional trends. Indeed, the focus on building coherent supports for the larger, primarily foreign firms while relying on framework conditions to support local business is indicated in the local weaknesses of financing and innovation policies. There is a genuine risk that each area may be undermined by the very institutional logic that weakened it in the 2000s. Innovation policy continues to be characterised by a narrowing of focus, driven by state and foreign investment policy. Financing brings a turn back to the market, albeit in a different form. The outsourcing of active labour market policy raises the same issues of lack of accountability

and weak integration with welfare, enterprise and education that dogged it through the 2000s. The 'footprint' of Enterprise Ireland has extended in important and interesting ways but the required supports in financing and innovation may not be present and the local capacity to develop this system is still in question.

Second, there is an opportunity here to tackle some of the fundamental issues within the Irish innovation system. That system needs to be extended out from its narrow base, to bridge the domestic and export sectors. A start has been made here in the extended role of Enterprise Ireland but crucial gaps remain in financing, where banking reform cannot be avoided. Indeed a key role of a state investment bank could be not simply to fund large scale projects but to work through local banks to provide working and development capital, in the process reforming the organisational practice and culture of the banking organisations (as in the example of the KfW in Germany). Further gaps exist in innovation where changes in IoTs may actually weaken locally available resources and where crucial reforms remain in education and apprenticeships. Integrating these institutions locally with central supports, will be crucial to supporting newly emerging firms.

Furthermore, especially given indigenous strengths in cross-cutting areas such as IT services, transport and logistics, and business services, the system needs to open to creatively re-combining its resources and institutions to support emergent sectors. Will targeting of high level supports in innovation and finance weaken the ability to put together supports for the new sectors which will inevitably emerge and which will cross the boundaries of the research prioritisation areas?

There is a more fundamental question here as trends within the system include the outsourcing of elements of enterprise policy (e.g. private financing, activation), highly targeted state interventions (eg innovation policy) and more networked institutions and capabilities. Can these various organisational logics be integrated into flexible combinations of supports? In particular, the outsourcing of a developmental programme such as activation makes integration with supporting institutions much less likely (see the alternative approach in NES, 2011). There are micro-choices to be made here that will have significant macro consequences.

Third, policy experimentation at home and internationally remains largely an untold story. Even the agencies that operate these policies do so under the cloak of other justifications of their activities. Sometimes they appeal to the spirit of enterprise among their client companies, even as their everyday practices show that such a spirit of enterprise still requires a significant network of financial, organisational and social supports. At other times, they appeal to the spirit of planning in reports that identify key targets and measurable outcomes, even as everyday practices are, at their best, based on flexibility and iterative social learning. The Action Plan for Jobs (DJEI, 2013) sits between these with an extensive list of policy measures that are only loosely connected (at least explicitly within the Plan itself). The plan could be implemented in one or two ways. It might drive policy

makers to focus narrowly on the delivery of discrete policy measures, operating (understandably) within policy silos. Or policy makers may seek each other out to connect across areas as the success of one measure is likely to depend heavily on the success of others. The impact of the Action Plan is likely to depend as much on these organisational questions as on the content of the plan's measures. This lack of a narrative of our own practice of policy comes at a cost. The debate is cast in terms that largely miss the point and the space for a serious discussion of how to develop our policies and practices was limited – even before the crisis.

Finally, enterprise policy can be a critical component of a new social contract. Early signs of wage pressure in some sections of the economy (particularly for managers and professionals) suggest that industrial relations and the broader social and distributional compromise will soon become an issue once more. One approach is to focus that discussion on wages, with one side arguing for a dedication to wage competitiveness while the other points to the local demand effects of improved incomes. However, the alternative is to pursue a model closer to the classic European alternative, where wage restraint is compensated by social and economic investment in unemployment support, training, care support, and enterprise development. Enterprise policy and supports for firms can be a critical element that can square this circle for under pressure firms and be one element of a broader effort at enhancing social protection and social investment.

This could support a move away from the 'speculation society' to an 'investment society', where investing in our skills, knowledge, organisations and innovation builds sustainable prosperity rather than temporary booms. The models of government programmes that promote the use of public resources for development and growth, not speculation and bubbles, will need to be developed. This would promote a national system of innovation that can crowd out the speculation economy and drive a new round of industrial development.

Appendix 1: Research Prioritisation Areas

Priority Area A - Future Networks & Communications

Priority Area B - Data Analytics, Management, Security & Privacy

Priority Area C - Digital Platforms, Content & Applications

Priority Area D - Connected Health and Independent Living

Priority Area E - Medical Devices

Priority Area F – Diagnostics

Priority Area G – Therapeutics: Synthesis, Formulation, Processing and Drug Delivery

Priority Area H - Food for Health

Priority Area I - Sustainable Food Production and Processing

Priority Area J – Marine Renewable Energy

Priority Area K - Smart Grids & Smart Cities

Priority Area L - Manufacturing Competitiveness

Priority Area M - Processing Technologies and Novel Materials

Priority Area N - Innovation in Services and Business Processes

References

- Block, F and M. Keller, 2009. "Where do innovations come from? Transformations in the US economy, 1970–2006" *Socio-Economic Review* 7, 3, 459-483
- Breznitz, D. 2007. *The Innovation State* Yale University Press: New Haven
- Department of Finance, 2013. "State Financial Support for SMEs in Ireland" Available at: <http://banking.finance.gov.ie/wp-content/uploads/State-Financial-Support-for-SMEs.pdf>
- Department of Jobs, Enterprise and Innovation, 2013. *Action Plan for Jobs* Dublin: DJEI
- Eggertson, g. Et al. 2013. "Can structural reforms help Europe?" *Journal of Monetary Economies*
- Fligstein, N. 2001. *The Architecture of Markets: An Economic Sociology of Twenty-First-Century Capitalist Societies*, Princeton, NJ, Princeton University Press.
- Girma, S., H. Gorg, E. Strobl, F. Walsh, 2008. "Creating jobs through public subsidies: An empirical analysis" *Labour Economics* 15, 6, 1179-1199
- Hirsch-Kreinsen, H. and D. Jacobson (eds.). 2008. *Innovation in Low-Tech Firms and Industries*, Edward Elgar, Cheltenham, UK; Northampton, MA, USA.
- Honohan, P. 2006. "To What Extent Has Finance Been a Driver of Ireland's Economic Success?" *ESRI Quarterly Economic Commentary*, Winter, 59-72.
- Huber, E. and J. Stephens 2001. *Development and crisis of the welfare state: Parties and policies in global markets*. Chicago: University of Chicago Press.
- Jenkins, C., K. Leicht and A. Jaynes (2006) "Do High Technology Policies Work? High Technology Industry Employment Growth in U.S. Metropolitan Areas, 1988-1998" *Social Forces* 85, 1, 267-296
- Kristensen, PH. 2009. "The Co-Evolution of Experimentalist Business Systems and Enabling Welfare States: Nordic Countries in Transition" pp. 7-53 in PH Kristensen and K Lilja (eds) *New Modes of Globalizing*
- Lane, P. 2011. "The Irish Crisis" IIS Working Paper No. 356: Dublin
- Lester, RK. 2008. "Comment on "Commercialising University Research: The Oxford Model" (by Tim Cook, Raymond Dwek, and Baruch Blumberg)," *Capitalism and Society* 3, 1
- Lester, R.K. and M. Piore, 2004. *Innovation – The Missing Dimension* Harvard University Press: Cambridge
- Mazzucato, M. 2013. *The Entrepreneurial State*
- Moretti, G. 2012 *The New Geography of Jobs* Houghton Mifflin
- McCarthy, C. 2011. "Productive Investment" Blog post, *The Irish Economy*. Available at: <http://www.irisheconomy.ie/index.php/2011/10/08/productive-investment/>
- McInerney, J. 2013. "Not good news for Irish science" Blog post. Available at <http://jamesmcinerney.ie/2013/04/23/not-good-news-for-irish-science/>
- Mowery, D. 2009. "Plus ca change: Industrial R&D in the 'third industrial revolution'" *Industrial and Corporate Change* 18, 1, 1-50
- Murray, P. and S. Ó Riain, 2007. "Work Transformed" In T. Inglis et al (eds) *Changing Ireland* UCD Press: Dublin
- NESC, 2012. *Promoting Economic Recovery and Employment in Ireland* NESC Council Report No. 125, Dublin: NESC

O'Malley, E., K.A. Kennedy, and R. O'Donnell. 1992. *Report to the Industrial Policy Review Group on the Impact of the Industrial Development Agencies* Dublin, Stationery Office

Ó Riain, S. 2004a. *The Politics of High Tech Growth: Developmental Network States in the Global Economy* (Structural Analysis in the Social Sciences 23) New York/ Cambridge: Cambridge University Press.

Ó Riain, S. 2004b. "State, Competition and Industrial Change in Ireland 1991-1999" *Economic and Social Review* 35,1, 27-54

Ó Riain, S. 2009. "Banks, the State and Finance 1998-2007" Research Note at Progressive Economy. Available at: http://www.tascnet.ie/upload/BanksStateFinance_SOR.pdf

Ó Riain, S. 2010. "The Developmental Network State under Threat: Markets and Managerialism in the Irish Innovation System" In Fred Block and Matthew R. Keller, eds. *State of Innovation: Perspectives on U.S. Innovation Policy 1969-2009* Paradigm

Ó Riain, S. 2011. "Human Capital Formation Regimes: States, Markets and Human Capital in an Era of Globalisation" In A. Burton Jones and J.C. Spender (eds) *Handbook of Human Capital* Oxford University Press: Oxford

Ó Riain, S. 2012. "The Crisis of Financialisation in Ireland" *Economic and Social Review* 43, 4, 497-533

Ó Riain, S. Forthcoming, 2014. *The Rise and Fall of Ireland's Celtic Tiger: Liberalism, Boom and Bust* Cambridge: Cambridge University Press

Ó Riain, S. and M. O'Sullivan, 2011. "State investment bank can shift focus from property" *Irish Times* October 31st. 2011. Available at: <http://www.irishtimes.com/debate/state-investment-bank-can-shift-focus-from-property-1.635329>

Perez, C. 2002. *Technological Revolutions and Financial Capital* Edward Elgar

Rodrik, D. 2007. *One Economics, Many Recipes* Princeton University Press: Princeton

Ryan, P. et al, 2010. Capability Transformation and Competitiveness: Final Report of the Lucerna Project CISC, NUI Galway. Available at: http://www.nuigalway.ie/cisc/documents/lucerna_project_final_report_june2010.pdf

Saxenian, A. 1994. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Cambridge, MA: Harvard University Press.

Saxenian, A. 2006. *The New Argonauts* Harvard University Press: Cambridge

Saxenian, A and C. Sabel, 2009. *A Fugitive Success: Finland's Economic Future* Helsinki: SITRA. Available at: <http://www.sitra.fi/julkaisut/raportti80.pdf?download=>

Van Egeraat, C., A. Kerr and S. Ó Riain. 2009. "Socio-spatial structures of knowledge flow and Innovation in the Irish Biotech and Animation Industries" NIRSA Working Paper No. 50