NERI Working Paper Series

Industrial Policy in Northern Ireland: A Regional Approach

Paul Mac Flynn

April 2017

NERI WP 2017/No 42

INDUSTRIAL POLICY IN NORTHERN IRELAND: A REGIONAL APPROACH*

Paul Mac Flynn ** (NERI) Nevin Economic Research Institute, Belfast, Northern Ireland

Keywords: Industrial Policy, Regional Policy, Productivity

JEL Codes: L52, L53, O47, R58

ABSTRACT

In early 2017, the Northern Ireland Executive produced *Economy 2030* an industrial strategy for Northern Ireland which seeks to focus government resources on boosting specific sectors of the economy. Whilst a sectoral focus is a welcome innovation in policy terms, the nature of the envisaged financial support to industry remains largely unchanged. Support is still too focused on supply side measures and attracting foreign direct investment. In order for specific sectors in Northern Ireland to gain the critical mass needed to compete globally and reach elevated levels of productivity at home, government resources need to be more collaborative and commercially focused. Internationally, there are contemporary examples of more interventionist industrial strategies at national level, but the role of regional governments in providing such support has been significant.

Taking these issues together, the outline of an alternative industrial policy for Northern Ireland is presented. This outline involves Northern Ireland moving from a policy of Regional Innovations Systems toward a sectorally selective, innovation partnership approach. Enterprise policies are best implemented at national level allowing the NI Executive to concentrate on building capacity in Northern Ireland firms directly. This approach would, it is hoped, lead to a significant reversal in the negative trend in productivity and living standards.

This version: 21 April 2017

*This NERI Working Paper forms part of an NERI project on the related areas of growth, enterprise, industrial, and innovation policy in Northern Ireland and in the Republic of Ireland.

** The author gratefully acknowledges helpful feedback from a number of reviewers. The usual disclaimer applies. All correspondence to paul.macflynn@nerinstitute.net

Industrial Policy in Northern Ireland: A Regional Approach

Paul Mac Flynn (NERI) Nevin Economic Research Institute, Belfast, Northern Ireland

1. INTRODUCTION

Creating better paid jobs is central to the economic policy of nearly every government, regional or national. For a region such as Northern Ireland, the task is even more necessary in light of the growing gap in living standards with other regions in the United Kingdom. Northern Ireland has had a devolved government, on and off, for almost 20 years, yet the Executive has struggled to find an industrial policy that could tackle some of the key weaknesses in the economy.

Previous NERI research (Mac Flynn, 2016) has outlined the scale of the productivity problem in Northern Ireland and why a significant change in industrial policy is required. Previous research has also highlighted how industrial policy in Northern Ireland has followed international trends away from interventionist models and toward a supply side approach (Mac Flynn, 2015). However, the launch of *Economy 2030* – the Northern Ireland Executive's latest industrial strategy document - brings both of these issues into sharp focus again. The document does recognize the need for the Executive to focus its support on driving growth and innovation in specific sectors of the economy, however the nature of the support offered is largely unaltered from previous policy documents.

How sectors are identified for industrial support is important, but so too is the nature and scale of the support that is being offered. In an era of tightening government resources, the commercial return from investment in industrial development needs to be considered along with its contribution to innovative capacity. The continuing prominence afforded to foreign direct investment also needs to be questioned in the context of its contribution to productivity growth in Northern Ireland

Appropriate consideration should also to be given to the extent to which the Northern Ireland Executive in its current form can affect economic progress in Northern Ireland. The situation is by no means unique and examples from other decentralised countries offer important lessons. Certain policies are by their nature more suitably and efficiently carried out by regional governments and some are not. This may involve a reappraisal of how the industrial policy in Northern Ireland interacts with national industrial policy at UK level. It should also lead to a reassessment of economic powers within Northern Ireland especially with regard to fiscal devolution including corporation tax.

This paper seeks to explore these issues and Section 2 outlines what is meant by industrial policy and why it is needed based on previous NERI research into sectoral productivity levels. Section 3 then examines the latest contribution to industrial policy and puts that in the historical context of Northern Ireland economic policy. Section 4 looks at international examples of regional industrial strategies examining the interaction between national and regional governments and how the scale of economic devolution can inform best practice. Section 5 outlines the basis of an industrial policy for Northern Ireland while section 6 concludes.

2. WHY INDUSTRIAL POLICY?

The term industrial policy has no agreed specific definition. The definition has varied dependent on the time or place to which the term is applied. Warwick (2013) defines industrial policy as,

"any type of intervention or government policy that attempts to improve the business environment or to alter the structure of economic activity towards sectors, technologies or tasks that are expected to offer better prospects for economic growth or societal welfare than would occur in the absence of any such intervention"

Industrial policy is often conflated or confused with enterprise policy, but there are important differences. The most succinct way to differentiate the two is to think of enterprise policy as horizontal, non-selective assistance to all firms whereas industrial policy can be considered selective, vertical assistance to particular sectors and industries. Industrial policy is a far more contested policy area than enterprise policy. Many academics and policymakers become nervous about the state becoming partial in the way in which it intervenes with the private or market economy. Many of these fears are based on the sub-optimal outcomes of previous historical episodes where direct financial assistance was provided by the state to enterprises in the market sector. As Mac Flynn (2015) points out, this period of industrial policy did have many mistakes, but there were an equal if not greater number of examples where state-owned or state-backed firms carried out some of the most significant stages of investment and innovation in key growth sectors across Europe. The successes of the developmental state in the 'Asian Tiger' economies also provide a more balanced view of the more recent interventionist industrial strategies.

2.1 Productivity

With many countries, and the UK in particular, experiencing protracted periods of depressed productivity growth, many policymakers have begun to question whether an industrial policy is now necessary to precipitate a boost in investment and innovation across the economy. For Northern Ireland, the necessity for such a change in policy is even more apparent as the UK's under-performance on productivity conceals a growing gap between Northern Ireland and Great Britain (Mac Flynn, 2016). Northern Ireland has been falling behind Great Britain on various measures of output and productivity for almost 20 years. Chart 1 shows that Northern Ireland, in addition to falling behind the average in Great Britain, is the second worst performing region in terms of productivity.

Chart 1: Gross Value Added per head by UK region 2015

Source: ONS (2016)

As Mac Flynn (2016) also points out, the sectoral structure of Northern Ireland's economy explains some of the productivity gap, but not all of it. Some sectors perform better than counterparts in Great Britain, others less well. Table 1 strips out the three sectors of the economy which are dominated by the public sector; *Public Administration*, *Health* and *Education* and shows productivity levels for what could largely be considered the private sector in Northern Ireland. The top four performing sectors relative to GB in 2015 were *Real Estate*, *Electricity*, *Water* and *Mining*. These four sectors, *Real Estate* in particular, tend to report output levels that are disconnected from the amount of labour that is required to produce them and therefore do not tend to report an accurate or useful measure of labour productivity (Mac Flynn, 2016). The next cluster of productivity surrounds the *Finance*, *Construction* and *Manufacturing* sectors. Within these Manufacturing is the largest sector of the economy by share of GVA and is second only to retail in terms of overall employment levels.

Table 1: NI Private Sector Productivity, Share of NI GVA and Share of NI Employment by SIC 2015

Sector	GVA/Emp	Emp '15	GVA '15
Real estate activities	424813	0.9	8.3
Electricity and gas	214286	0.3	1.2
Water supply, sewerage and waste	118004	0.7	1.8
Mining and quarrying	76543	0.2	0.4
Financial and insurance activities	74155	2.5	4
Construction	67007	4	5.7
Manufacturing	62486	11	14.6
Information and communication	59088	2.5	3.2
Transportation and storage	54203	3.4	4
Professional, scientific and technical	47219	3.8	3.8
Other service activities	46818	2	2
Wholesale and retail trade	35626	18.2	13.8
Agriculture, forestry and fishing	27578	1.7	1
Arts, entertainment and recreation	25637	2	1.1
Administrative and support services	23335	7	3.5
Accommodation and food services	20876	6.3	2.8

Source: NISRA (2017) & ONS (2016)

Table 2 shows how job growth changed in the period leading up to the crisis of 2008 and since then. The bursting of the property bubble in 2008 had obvious consequences for the Construction sector with over 13,000 jobs lost in the 2008-16 period, but the Manufacturing sector actually saw a larger number of losses, over 18,000, in the 2000-2008. The manufacturing sector was also the only sector to record negative employment growth in both periods. Whilst Northern Ireland has regained the overall number of jobs that were lost over the crisis, it has not been replacing like with like.

Table 2: Change in total number of jobs in Northern Ireland by sector 2000-2008 & 2008-2016

Sector	Share of Non-Public Employment			Change in Employment	
	2000	2008	2016	00-08	08-16
Agriculture, forestry and fishing	7.6	5.9	5.6	-3540	680
Mining and quarrying	0.4	0.3	0.3	240	-240
Manufacturing	20	14.8	14.4	-18590	-1410
Electricity and gas	0.4	0.3	0.5	-1170	880
Water supply, sewerage & waste	0.7	1.0	1	1330	770
Construction	11.9	12.1	9	7810	-13390
Wholesale and retail trade	23.3	24.7	22.1	24620	-4670
Transportation and storage	5	5.2	6.3	4430	-690
Accommodation and food	7.6	7.6	8.3	5400	1360
Information and communication	2.8	3.2	3.6	3750	2530
Financial and insurance activities	3.4	3.7	3.3	4580	-1680
Real estate activities	0.9	1.3	1.2	3580	360
Professional & Scientific	4.9	5.7	6.8	4970	6140
Administrative and support	5.6	8.2	9.6	17440	8850
Arts & entertainment	2.6	2.7	3.3	1700	1570
Other service activities	3	3.2	4.5	1500	1360
Total	100	100	100	58050	2420
Source:	NISRA (2016)				

One of the consequences of the more recent shift away from industrial policy toward enterprise policy is that in abandoning a sectoral focus for industrial support, governments have tended to focus on policy actions that supported job growth wherever it might occur. That might not sound like a bad policy shift but it may have unintended consequences. It brings to focus a key conundrum that any government faces in this scenario; do you aim for policies that create jobs or policies that boost growth? This is by no means a binary choice, it is entirely possible to aim for both. However, an unintended impact of the shift from industrial to enterprise policy has been that governments have become more ambivalent about the type or quality of jobs they create. The advent of the financial crisis in 2008 and the unemployment crisis that followed put this into sharper focus still. Of course, at a time when mass unemployment is in prospect policies aimed at maximising employment may be necessary, but after crisis periods policy should also aim to boost productivity.

3. POLICY, PAST AND PRESENT

Economy 2030 is the latest document to outline an industrial strategy for Northern Ireland. Industrial policy has had a mixed history in Northern Ireland ranging from strong financial support and grants for the linen industry up to the 1960s (Brownlow, 2007) to disastrous support for a motor industry in the 1980s (Brownlow, 2016). Over the last 20 years of devolution, industrial policy in Northern Ireland has remained remarkably stable. Most of the current suite of policy proposals emanate from a report in 2001 by the Northern Ireland Economic Council (NIEC, 2001) which identified a broad policy agenda and crucially the sectors where that policy should be aimed at.

One thing that has become clear in *Economy 2030* is that the Northern Ireland Executive has moved some way toward identifying particular sectors of the economy where it believes support should be targeted. This is not an entirely new departure for Northern Ireland's industrial strategy but it does have some significance. Chapter 3 of the document outlines the importance of each of the chosen sectors in terms of existing output and employment in Northern Ireland. Crucially, however, there is no discussion of the comparative performance of these sectors or why these sectors are not currently performing at the level the NI Executive would like them to be performing. Chapter 4 then seeks to outline how these aspirations will come to fruition. However, rather than linking policy proposals in chapter 4 to the sectors outlined in chapter 3, policies are grouped under five headings or 'priority pillars' as they are referred to in the document, including skills, innovation and infrastructure.

In many instances the policy proposals that are made under the five pillars are needlessly broad based and disappointingly vague. Phrases such as "Increase efforts" or "Increase focus" are prescribed as a panacea for what are complex and embedded economic challenges. Where policy proposals are more concrete, the proposed action is often more modest such as creating the post of a chief science officer or establishing 'employability forums' in each council area. In other areas policy outcomes are conflated with policy proposals. Under the skills pillar for instance it is proposed that the Executive will "increase the number of economically inactive claimants taking up formal programmes of support". At no point does the document spell out why more claimants do not take up such support nor any ideas as to how such a situation can be amended.

The lack of specificity in policy proposals is however a minor fault within the document. The key structural weakness with the document is an outdated analysis of the Northern Ireland economy in terms of how sectors are identified, the type of support offered and the misguided prominence given to the role of foreign direct investment.

3.1 Sectors

As outlined at the beginning of this section, support for specific sectors and industries is a contested area of research. This unease is possibly well-founded when it comes to Northern Ireland. As mentioned earlier, Brownlow (2007) explored the history of financial support to industry in Northern Ireland and finds two distinct phases of policy. Up until 1963 the institutional framework that decided how government support was to be disbursed was flawed and prone to corrupt practices. Brownlow posits this as one on the main reasons for Northern Ireland's economic underperformance in these years. Political change and subsequent institutional reform meant that government grants were not only distributed more fairly, but also that they were aimed much more at attracting new, and often foreign, investment than they were at maintaining employment in existing industries and firms. The period which followed the introduction of these reforms showed Northern Ireland boosting its economic performance compared with other regions of the United Kingdom

State Aid rules introduced during the United Kingdom's membership of the European Union significantly curtailed the ability of the Northern Ireland Executive or any member state to support one company over another in terms of state grants. However, the possibility of an inept or inappropriate determination in this area is well-founded and that is why the decision-making process involved in identifying industries or sectors is important. In *Economy 2030*, the Northern Ireland Executive outlines the industries and sectors which it believes Northern Ireland has "world class capabilities". These are:

- Financial, Business and Professional Services;
- Digital and Creative Technologies;
- Advanced Manufacturing, Materials and Engineering;
- Life and Health Sciences;
- Agri-Food; and
- Construction and Materials Handling

These sectors appear to be based on the work of MATRIX, the Northern Ireland Science Industry Panel. This industry-led panel advises government on current capabilities and future opportunities within particular industries. With the exception of Financial, Business and Professional Services and Construction and Materials Handling, the sectors identified in *Economy 2030* are the same sectors that the MATRIX panel have identified since their inaugural report in 2008. However, the 2008 MATRIX report and indeed the MATRIX group itself arose out of the 2001 Northern Ireland Economic Council report. It was in this report where the original focus sectors were identified, both in manufacturing and services which the MATRIX panel has since carried out its research on.

The NIEC report based its analysis on sectors of the economy which it classified as "technology or innovation intensive" and assessed how these industries performed in Northern Ireland. Rather than using sectoral productivity indicators, the report measures the performance of these sectors by their share of GVA. The choice of the share of GVA as a measure of sectoral strength and the age of the data used present issues for the application of this analysis to today's economy. In terms of the age of the data, the biggest change has been the re-classification of industrial sectors which has expanded significantly since 1997. Table 3 is a reproduction from the original NIEC paper and shows Northern Ireland was, in 1997, performing better than Wales and Scotland but well behind England in Chemicals and Pharmaceuticals. In Computer and Electronics, it was well behind Scotland and Wales and only marginally behind England.

Table 3: GVA share of industries by UK nation 1997

	Wales	Scotland	NI	England
Chemicals and pharmaceuticals	3.8	3.5	7.4	11.3
Computer & electrical	14.9	24.2	9.4	11.3
Machinery and equipment nec	5.6	7.8	7.1	9.8
Transport equipment	13.2	5.6	11.7	11.5

Source: NIEC 2001

Table 4 updates this analysis and shows that in 2015, measured by its share of GVA, Northern Ireland appears however to have improved its performance against all competitors in Computer and electrical. Over this period, the sector grew in GVA terms by nearly 20% whilst it declined by 30% in England and almost 60% in both Wales and Scotland. Northern Ireland had slipped behind Scotland and Wales and further still behind England in Chemicals and Pharmaceuticals. However, its growth rate in this sector was higher than that of England over the period and comparable with that of Wales and Scotland.

Table 4: GVA share of industries by UK nation 2015

	Wales	Scotland	NI	England
Chemicals and pharmaceuticals	10.4	10.7	9.2	15.2
Computer & electrical	4.2	7.0	7.5	6.0
Machinery and equipment nec	2.6	6.7	6.0	7.0
Transport equipment	17.9	6.8	12.5	15.3

Source: ONS (2016)

Table 5 divides the manufacturing subsectors out and shows that, measured by share of GVA, Northern Ireland appears to be doing equally well in both Computers and Electronics and equally behind in both Chemicals and Pharmaceuticals. The sectoral GVA growth figures for this period broadly reflect this with the exception of a slightly better comparative performance in Electrical Equipment in Northern Ireland over the over the period.

Table 5: GVA share of industries by subsector and UK nation 2015

	Wales	Scotland	NI	England
Chemicals and pharmaceuticals	10.4	10.7	9.2	15.2
Chemicals	4.5	4.3	4.1	7.1
Pharmaceuticals	5.9	6.4	5.1	8.1
Computer & Electrical	4.2	7.0	7.5	6.0
Computers	3.1	5.6	5.3	4.6
Electrical	1.1	1.4	2.2	1.4

Source: ONS (2016)

However, measuring the performance of a sector by its share of GVA or even its GVA growth rate can be problematic. Table 6 shows a productivity gap analysis for the manufacturing sub sectors in Northern Ireland compared with Great Britain. It compares output per employment in all of the manufacturing subsectors in Northern Ireland and expresses the difference as a percentage of the average in Great Britain. While output per hour is the preferred measure of productivity, currently the data only allow an analysis out output per job on a sectoral basis. As table 6 shows, measured by productivity, Northern Ireland falls behind the GB average by 25% and 23% respectively in Computers and Electronics. Measured by share of GVA this sector would have appeared to have overcome its difficulty since 1997, but if anything, measured by productivity, the problem is worse in 2015 than it was in 1997. Similarly, in Chemicals and Pharmaceuticals, table 5 would appear to show that Northern Ireland's position is equally bad in both sub sectors, however as table 6 also shows, Northern Ireland's productively problem is massively weighted toward the pharmaceutical sector which accounts for 5% of manufacturing GVA and nearly 8% of employment.

Table 6: NI – GB Productivity Gap in Manufacturing sub-sectors 2015

Industry	% Productivity Gap
Food products, beverages and tobacco	27.3
Textiles, wearing apparel and leather products	-26.0
Wood and paper products and printing	0.8
Coke and refined petroleum products	61.5
Chemicals and chemical products	16.1
Basic pharmaceutical products and preparations	-74.6
Rubber and plastic products	7.1
Basic metals and metal products	-0.3
Computer, electronic and optical products	-25.0
Electrical equipment	-23.2
Machinery and equipment	-15.1
Transport equipment	-28.7
Other manufacturing and repair	1.9

Source: ONS (2016)

Table 6 also highlights some further interesting trends within the manufacturing subsectors. Northern Ireland has a large positive productivity gap in Food, Beverage and Tobacco manufacturing and this accounts for just under one third of all manufacturing output produced and has the second largest positive productivity gap of all manufacturing industries. While petroleum products have the largest positive productivity gap, the sector accounts for 0.2% of output and only 1% of total employment in the sector. Northern Ireland shows a significant negative productivity gap in transport equipment which is somewhat surprising given the profile of large scale manufacturers such as Bombardier and Wrightsbus in this sector.

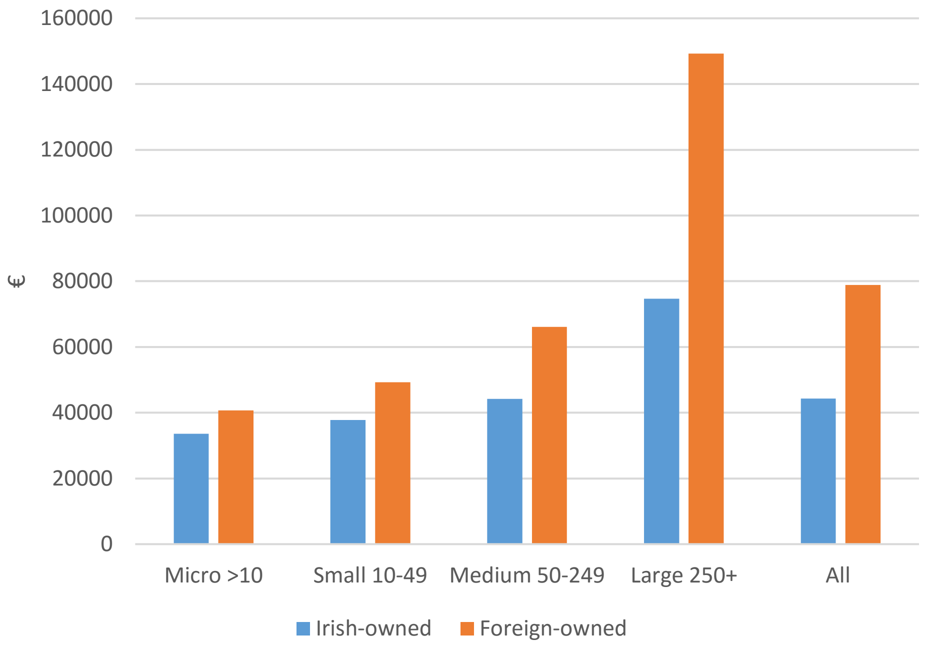
The purpose of this analysis is to show that the processes and judgements involved in prioritising a sector within an industrial strategy are important. The analysis and the sectors outlined in the NIEC report were based on the perceived weaknesses of the economy at the time. An updated productivity analysis, with a particular focus on manufacturing such as that presented in table 6, along with a realistic appraisal of where Northern Ireland's weaknesses are should motivate policy recommendations in *Economy 2030*.

3.2 Foreign Direct Investment

The level of international investment in Northern Ireland has been a persistent feature of industrial policy since the reorientation of industrial support during the O'Neil administration (Brownlow, 2007). *Economy 2030* identifies "International engagement" as one of the key measures of competitiveness upon which its success should be judged. International engagement involves promoting exporting amongst Northern Ireland firms and investment by foreign firms into Northern Ireland.

This persistence of FDI in policy documents is quite understandable given the experience of economic growth in the Republic of Ireland over the last 30 years. The elevated levels of productivity in the Republic have undoubtedly been significantly boosted by the presence of foreign firms, but as recent controversies surrounding the measurement of economic growth have shown, reported figures can become detached from reality. Chart 2 shows the productivity of foreign and domestic owned firms in the Republic of Ireland for 2012 adjusted for size.

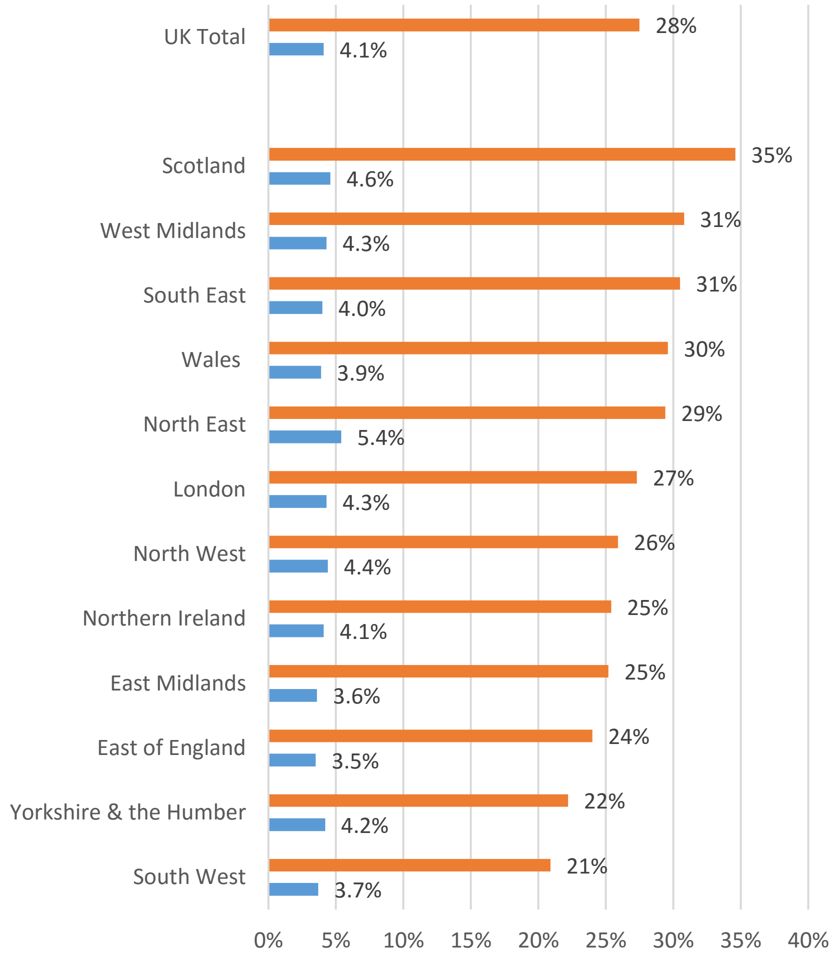
Chart 2: Gross Value Added per person engaged by firm Republic of Ireland 2012



Source: CSO (2014)

According to the most recent figures from the Central Statistics Office, foreign owned firms represented 1.5% of all enterprises in the Republic of Ireland and accounted for 52.1% of Gross Value Added in 2014. For Northern Ireland, foreign owned firms represented 4.1% of all enterprises and accounted for 25.4% of Gross Value Added in 2013. The Republic of Ireland is somewhat exceptional with regard to the contribution of foreign-owned firms and Chart 7 puts Northern Ireland's performance in the context of the other regions of the United Kingdom. While Northern Ireland's current performance is comparable to other regions of the UK its trend performance is quite impressive. Northern Ireland increased the number of foreign-owned firms from 1.3% in 2009 to 4.1% in 2013 with the GVA contribution of those firms increasing from 11.1% to 25.4% over the same period.

Chart 3: Share of firms and GVA of Foreign Owned Firms by UK Region 2013



Note: ONS (2016b)

However, whilst this most recent performance is undoubtedly successful it cannot be taken as a vindication of the role of FDI in boosting productivity. During the time period where Northern Ireland has boosted its FDI share of GVA by nearly 15 percentage points its GVA per head fell from 79.2% of the UK average to 75.9%. It is most likely the case that foreign owned firms in Northern Ireland have a much higher productivity profile than domestic owned firms. However, there is limited data available in this regard. Turnover per employment is the best available productivity measure as the data is at company level and the most recent figures date from 2010, at the early stage of Northern Ireland's FDI growth. In 2010, turnover per employment in foreign owned firms was 2.3 times that of domestic firms in Northern Ireland. This compares with 2.4 for the UK and 1.8 for the Republic of Ireland, however the UK and NI data cover only a small proportion of the overall number of firms and so the robustness of any comparison with the Republic of Ireland is open to question.

What the available data do show is that, within the UK, the level of Foreign Direct Investment in Northern Ireland is not significantly below that of the UK average. It also shows that the productivity ratio between domestic and foreign-owned firms in Northern Ireland is not significantly different from the UK average. The only conclusion available from these statistics is that FDI does play a role in productivity, but that it is not the 'game-changer' that it is often presented as. If anything, these statistics show that Northern Ireland sectors that have a low productivity profile are only likely to attract FDI with a proportionately similar productivity profile. While Northern Ireland would have an even lower productivity profile without FDI, FDI alone will not close the gap. Most theories of FDI's role in growth emphasis that it is a catalyst for growth rather than a cause of growth itself. In order to have real impact FDI must be complementing a growing and innovative domestic base of firms. This is where industrial policy in Northern Ireland should turn its attention.

3.3 Innovation

Regional industrial strategies have gone through phases which reflect the shifts in mainstream economic theory that occurred alongside them. Fløysand et al (2015) pose three phases of industrial policy, that run from 1945-80, 1980-2000 and 2000 onwards. The first two phases broadly reflect those outlined in previous NERI research on this topic (Mac Flynn, 2015); a Keynesian phase followed by a Supply-side phase. It is the third phase however where the regional element of industrial policy came to prominence. The third phase is one still heavily focused on supply-side measures but one that also sees regions as the main drivers of economic growth and the importance of regions in fostering innovation and entrepreneurship. The most important theoretical underpinning of this present phase of industrial policy is Regional Innovation Systems (RIS). RIS permeates almost all recent literature on regional policy and balanced development and it also forms the basis for most contemporary regional industrial strategies.

RIS is a supply-side programme of policies aimed at boosting innovation in regional or local economic districts in a globalised production economy. It draws together theories of Agglomeration and Clustering along with theory of Global Value Chains (GVC). Some literature points to the potential conflict between these two ideas (Humphrey & Schmitz, 2002). Clustering emphasises the importance of links between local firms while GVC emphasises the importance of links between firms globally. Essentially GVC theory proposes that supply chains have become globalized and this means that policy can no longer focus on building up one industry within one region. Instead, regions will perform one or more functions within a value chain and that policy should focus on moving regional firms up that value chain or moving them to a related but more productive value chain (ILO, 2014). Clustering theory essentially emphasises the need for local firms within a sector to share knowledge and technology in order to scale up and become globally competitive. Building regional clusters in global value chains is of course possible (Nadvi & Halder, 2007), but oftentimes policy proposals in RIS theory can seem contradictory owing to this perceived inconsistency.

An RIS for Northern Ireland was first proposed for Northern Ireland in the 2001 NIEC report. The NIEC report put in place a policy framework which has been refined and honed by government strategies for the last 16 years. In all the NIEC report made 22 recommendations for Northern Ireland ranging from knowledge transfers and network to clustering and the creation of an innovation development agency. In reality many of these measures are still appearing in the latest industrial strategy document for Northern Ireland, *Economy 2030*.

The MATRIX reports, from which *Economy 2030* draws recommendations, are very much grounded in RIS theory. The most recent MATRIX report made policy recommendations on Skills, Research and Development and Sectoral Development. The recommendations for skills and sectoral development were predictable enough, with an emphasis on STEM subjects in schools and the promotion of affinity groups in sectors. On Research and Development, the report made recommendations, across all sectors, for research hubs in various subsectors of the industries concerned. Establishing networks and facilitating commercial partnerships are standard RIS policy proposals. However, the most recent MATRIX reports have gone further in specifying the role of government in stimulating innovation.

In the Advanced Manufacturing report, there is a recommendation that joint ventures between universities and firms need to be more closely monitored for their commercial outcomes. This is a worthwhile suggestion and it perhaps acknowledges that in the light of current constraints on public expenditure, government support for such research ventures needs to be less passive. For the Agri-food sector, the MATRIX panel suggests the creation of an "R&D hub of international standing which will specialise in the cradle-to-grave development" of products in the sector. The government already has the Agri-food and Biosciences Institute (AFBI) which provides analytical & diagnostic, research & development and scientific training & advice for firms in the sector. The latest MATRIX reports would seem to suggest that this model needs to go further and that state investment needs to become involved in product development. In the ICT sector, the MATRIX report echoes the recommendations for Advanced Manufacturing sector, arguing for more "effective exploitation of the knowledge arising from the research base”. The most recent MATRIX reports are recommending not only that government establish research hubs and encourage cooperation but that the state needs to become involved itself in the commercial initiatives arising out of such collaborations. This type of policy recommendation contrasts quite sharply with standard RIS theory which only recommends establishing such institutions as a means of facilitation rather than partnership. However, this policy shift has not travelled from the MATRIX reports to *Economy 2030*.

Under the ‘Accelerating Innovation and Research’ pillar *Economy 2030* proposes “examining options” for a “specific ringfenced fund or a science funding agency”. Once again there is nothing objectionable about this proposal other than its banality. The Northern Ireland Executive does need a vehicle by which it can channel funds to boost research and innovation, but the creation of a new agency is not the solution here. There are already a number of agencies that, with minor alterations, could perform this function, not least the ABNI or indeed Invest Northern Ireland itself. *Economy 2030* also highlights the role of Catalyst Inc, until recently known and the Northern Ireland Science Park (NISP). Catalyst provides office space, commercial advice and networking opportunities for investors and entrepreneurs. In essence in provides an incubation facility for start-up tech companies in Northern Ireland, and this is a very important function that supports indigenous business growth. However, the debate that needs to be had is over how that support is channelled and the role the state plays in that relationship as it develops. As the MATRIX reports highlight, state funding needs to concentrate on providing assistance from the beginning of product development right through to commercialisation as opposed to merely creating conditions for cooperation among firms.

In reality, Economy 2030 follows the framework of standard RIS policy proposals fairly closely and while many of the proposals seem lacklustre, they are not inappropriate. As the 2001 NIEC report itself points out, RIS is a necessary but not sufficient condition of regional growth. As it is at the national level, an enterprise strategy is important to ensure that policy and the institutional environment encourages the creation of new business or the expansion of existing ones. What the productivity problem in Northern Ireland shows is that the policies outlined in *Economy 2030* are not enough. Government needs to accept that there are crucial weaknesses in the regional economy and that unless there is a plan to specifically tackle them, they will remain a persistent drag on growth. The need to move beyond passive RIS policies has also been a feature of more recent research into regional economic growth.

4. REGIONAL INDUSTIRAL STRATEGIES

Building a new selective industrial strategy would be a significant departure for Northern Ireland policymakers and it could be considered too risky for Northern Ireland as a small regional economy. However, there are varied experiences of regional industrial policy that have some important lessons for Northern Ireland.

4.1 Policy Developments

The Republic of Korea developed a new programme of regional industrial strategies following the Asian Financial Crisis in 1997. The concern was that growth was too centred on urban areas and services in particular. Importantly as Kim (2008) points out the strategy that was adopted aimed not only at building an RIS for non-metropolitan regions but also direct investment in regional industries. The programme identified key industries for each region with support programmes tailored to the needs of those sectors. The programme dramatically boosted regional manufacturing output in the assisted areas but also had positive spill-over effects leading to an increase in manufacturing sector productivity overall. A recent OECD report highlights the performance of this programme and of Korean industrial development policy over the last two decades but also highlights the need to empower regions if the future progress is to embed what has already been achieved (OECD, 2012).

The success of industrial development in Germany has been the envy of most of its European neighbours. German industrial policy has historically been less selective or interventionist than other European countries, however the national government did play an indirect role in maintaining industries. This was usually achieved through regulating markets so that for instance companies facing external competition were incentivized to invest in staff and machinery, rather than cutting cost and wages. Much of German economy’s success is attributed to the existence of regional centres of growth within the German states or Lander. Vitols (1997) explores this but also highlights the importance of regional institutions beyond regional government. German success is seen to be directly linked to broader decentralization in the industrial development field. Local banks and local branches of state investment functions play a key role in tailoring the system of state supports to best suit local industry. Karl et al (2003) also highlights the complementary roles of national and regional government in Germany and the institutional capacities of the Lander. That regional and national government policies are aligned would seem to be particularly important. For Northern Ireland, this will become increasingly important as the new UK national industrial strategy is formulated over the coming years.

Brown & Mason (2012) look at the experience of the Scottish government and their attempt to boost the output and contribution of *High Growth Firms* (HGFs) to growth [1]. They describe the range of policies around access to finance and innovation supports that the Scottish government make available as "light-touch industrial policy". While not finding any of the current suite of policies objectionable they find that they are insufficient to provide the boost to potential HGFs that is desired. They propose new "strategic collaborations between firms and governments" which should be viewed as partnerships. In a clear departure with RIS or enterprise polices they emphasise that governments should "do more with fewer firms" on the basis that government support is limited and that the state needs to be more tactical in those firms it provides assistance to. This is picked up by both Mason et al (2009) and Mole et al (2008) who argue that the breadth of enterprise policy-type supports leads to inefficient use of state resources. More intensive collaborations between the government and a small number of firms is more likely to produce results and the positive spill-over effects that are created may make up for the narrow nature of the assistance.

The experience of New Zealand provides important insights for the role of a more selective industrial policy. NG & Hamilton (2016) contrast the selective industrial policy profile of New Zealand with Malaysia and other Asian economies where more broad-based and horizontal policy initiatives dominate. Their findings mirror what Brown & Mason (2012) found in Scotland, but they also emphasise that selective industrial policies should sit alongside a scaled back suite of broad-based enterprise policies.

A persistent theme that is present in most of the literature emphasises that selective policies are most successful when managed by the most local form of government, in that the more distant the decision making is, the less efficient the support will be. This also raises questions about the potentially conflicting roles of national and regional governments. Most of the literature supporting selective, interventionist industrial policy concedes that enterprise or supply side policies will still be needed, albeit in reduced form. Regional governments may be best placed to deliver selective industrial interventions but it is not clear whether regional

---

[1] Additionally, much of the recent literature around HGFs has highlighted how governments and policymakers have often misidentified these firms based on perceived characteristics, thinking that only young, university spin-out firms can be high growth. This bias has led to the polices described above being aimed at the wrong firms (Brännback et al, 2014).

governments are best placed to deliver ‘enterprise policies’.

This point comes into focus in the second chapter of *Economy 2030*. Northern Ireland is compared and contrasted with one region (Scotland) and 7 small to medium sized countries in terms of overall competitiveness. Comparing Northern Ireland with an economy such as Singapore is problematic on a number of levels but the main issue is the policy competency gap. As a national economy, Singapore has the ability to affect policy changes over a wide range of areas in order to achieve its own particular form of industrial development. Irrespective of whether one thinks that the same suite of policies would be appropriate for Northern Ireland, many of the policy levers are simply not available to the Executive. One of the most obvious examples of the competency gap is in the area of fiscal policy.

4.2 Fiscal Gap

The absence of any broad fiscal powers in Northern Ireland poses a number of challenges to achieving an enterprise policy agenda such as that which operates in Singapore. Reducing the rate of Corporation Tax paid by companies has been the most significant economic policy proposal in Northern Ireland over the last decade. However, most policy evaluations have determined that the lack of broader fiscal powers limits the efficiency of this measure considerably. Northern Ireland would not, in its current form, be able to reap fiscal returns to the policy from revenues generated in non-corporate economic activity. The case of the Republic of Ireland is routinely proposed as an example of the success of corporation tax reductions and whilst the two economies are similar, Northern Ireland, as a region, is significantly limited in its ability to imitate this policy.

Studies which modelled the impact of a reduced rate of corporation tax in Northern Ireland examined various fiscal scenarios. In a best-case scenario without broader fiscal devolution Northern Ireland would be fiscally worse off for more than 25 years after the cut in corporation tax took place (Oxford Economics, 2010). The scale of tax devolution that would need to take place in order to make a fiscally responsible case for corporation tax reductions would be beyond the scope of even what the Smith commission had proposed for Scotland after the independence referendum of 2014. While there is evidence that fiscal devolution does play a role in incentivizing regional governments to boost growth (Bauwhede et al, 2016), there is also evidence that such effects have only limited impacts across the economy (Fa & Xiao Chuan, 2012). While some fiscal devolution could be beneficial to Northern Ireland, the scale of what would be necessary to make corporation tax, even theoretically, pay for itself is possibly beyond what would be practical with a regional government of the United Kingdom.

Reducing corporation tax is just one example of an enterprise policy that, regardless of its validity, would be more appropriately introduced by a national government. The Northern Ireland Executive is clearly trying to emulate a set of policies that are beyond the scope of a regional government. If policymakers do believe that Singapore is worthy of emulation, irrespective of whether that policy objective is desirable, then that should be a priority at national level where tax and regulation powers are vested. Regional governments like the Northern Ireland Executive should concentrate of developing policies that recognize the unique industrial structure and potential of Northern Ireland and commit the resources to them. This idea has been referred to by previous research as developmental regionalism (Mennis, 2009 & Kasahara, 2013). They posit a “hybrid policy of limited liberalism at the national level and protectionism at the regional level”. While this idea was conceived as a way to reform the developmental state model in East Asian economies, it provides important insights into the differing industrial roles for regional and national governments.

5. A REGIONAL INDUSTRIAL STRATEGY FOR NORTHERN IRELAND

An industrial policy for Northern Ireland should begin with a critical assessment of the strength and weaknesses of the regional economy as it stands. This would start with a productivity analysis as set out in section 3. However, simply identifying sectors where a productivity deficit exits is not sufficient. As international evidence has shown governments need to concentrate on doing more with fewer firms in order to spread government resources most efficiently. For Northern Ireland that may mean expanding employment in area with positive productivity gaps and boosting output in areas with negative productivity gaps. It will also require making tough choices. It may mean accepting that the 74% negative productivity gap in Basic Pharmaceuticals is too large to be bridged or that despite its positive productivity gap, food manufacturing sector is too low value added to commit resources to grow employment. The industrial strategy should outline a metric whereby sectors of the economy are prioritised because they have either

a) A small employment share with a positive productivity profile and the possibility to expand; or

b) A significant employment share with a negative productivity profile and the possibility to boost output.

Once the sectors have been decided, the policy proposals that flow should be directly linked to these sectors. As outlined earlier, this does not involve abandoning all existing horizontal policies which aim to boost enterprise activity overall, it merely accepts that these have limited use and that the majority of these policies are best left to and best administered at national level. Regional industrial policies should instead be linked to sector specific outcomes that have been identified with resources allocated accordingly.

The MATRIX reports provide an example of how such sector specific outcomes can be identified for Northern Ireland. The most recent sector report on Advanced Manufacturing identifies three subsectors in Northern Ireland with "critical mass":

- Aero, Defence, Security & Space (ADSS)
- Materials Handling (MH)
- Polymers

and three with "strong performance":

- Automotive
- Construction Products
- Agri-Engineering.

The MATRIX report sketches out the four broad areas of technology and innovation it believes will define the sector over the coming years and these are; ICT, Sensors, Advanced functional materials and Biotechnology. Within advanced functional materials it believes there is strong capability within;

- Highly reactive nanoparticles
- Lightweight materials, including composites
- Multifunctional materials
- Additive technologies
- Biomaterials

An industrial strategy for Northern Ireland should be linked to these innovation and development challenges. To be clear this would not be the Northern Ireland Executive supporting particular firms, but rather supporting sector specific innovation projects and doing so more directly. If the Northern Ireland Executive wishes to see productivity enhancing growth, it should be directing its resources to these projects and moreover take a financial stake in them. The new UK government draft industrial strategy aims to be more selective in how it supports industry with a particular focus on productivity and regional balance. This represents an opportunity for Northern Ireland to make the same policy shift.

There are even examples within existing UK government policy where a more interventionist industrial policy has already been established. Innovate UK, previously known as the Technology Strategy Board offers grants for collaborative research by UK based companies. What distinguishes Innovate UK grants from similar initiatives is that these grants are sector specific and that they outline what innovation they are seeking to support or research goal they are seeking to meet. In its current phase, they are supporting projects in four areas:

- emerging and enabling technologies
- infrastructure systems
- health and life sciences
- manufacturing and materials

For example, one of the most recent grants was seeking to "develop prototype devices and demonstrators of quantum technologies or their component technologies". Furthermore, the grant notification specified devices such as clocks, sensors, imaging, communications, computing and other devices that use quantum effects of superposition or entanglement.

The TSB/Innovate UK model has been instrumental in building one of the few successful examples of UK industrial policy in recent years. The UK pharmaceutical sector had under-performed for years and one of the key structural weaknesses of the sector that was identified was a lack of investment finance. To this end, TSB provided a key funding source for early stage research and has contributed much to the comparative success of the sector in recent years. Some would class this as a market failure but oftentimes the lack of a market is the failure. In many cases, there is no market for finance in early stage technology, in cases where the firms involved are small and disparate, financing options are simply unavailable. In this case, the state is filling a role that the market sector simply can't.

One unwelcome feature that Invest NI shares with Innovate UK is that neither seeks repayment for the grants that they make. A review of Innovate UK's operations has recommended that it should now seek repayment of up to a quarter of the grants that it distributes (Glennie & Westlake, 2016). This matches a similar recommendation about

Northern Ireland's programme of industrial support made in the MATRIX reports. The Innovate UK review cites examples from innovation agencies in France, Finland and Israel all of which have some element of repayment in their financial support programmes. Bpifrance uses a range of instruments including convertible bonds and co-investment whilst OCS in Israel charges a royalty to a firm if its profits exceed a previously agreed threshold. Invest NI could be reformed to carry out a function similar to Innovate UK/OCS/Bpifrance with a mandate moulded to the needs of industry in Northern Ireland as set out in the MATRIX supports. This would provide an industrial strategy that recognised both the strengths and weaknesses of the Northern Ireland economy and put resources in place to tackle these issues by investing in productivity enhancing growth for the future.

6. CONCLUSION

In order to radically alter current trends of economic growth and productivity, the Northern Ireland Executive needs to radically alter current industrial policy. Whilst there are some improvements in *Economy 2030*, the document fails to articulate a set of policies that will make any discernible impact on key economic variables. Identifying sectors of the economy that should be priorities for government support is a welcome policy move, however this ambition is not matched in the policy terms. Regional Innovation Systems has been the policy of the Northern Ireland Executive for over 15 years and it is need of significant revaluation. The role of foreign direct investment needs to be reconsidered in light of its contribution not only to employment levels but also to productivity growth.

There is a growing acceptance that state support for industry needs to change and that more commercially focused partnerships will establish more enduring growth and an equitable return for the state. Regions and regional authorities could be the main drivers of this new interventionist policy programme whilst more board-based enterprise policies should remain the purview of national governments. In this way, the Northern Ireland Executive should seek to chart a new course in regional industrial policy. This would involve Northern Ireland moving from a policy of Regional Innovations Systems toward a sectorally selective, innovation partnership approach. It would also involve abdicating much of enterprise policy to the UK government and concentrating on building capacity in Northern Ireland firms directly. Whilst Foreign Direct Investment will still play a role, it is envisaged that this would be a secondary policy goal. Increased FDI would be the indirect outcome of a successful policy, not the policy itself. This approach would it is hoped lead to a significant reversal in the trend of falling productivity and living standards.

REFERENCES

Bauwhede, H.V., Beyne, P. & P. Van Cauwenberge (2016) An empirical investigation of the influence of municipal fiscal policy on firm growth *Environment and Planning C: Politics and Space* Vol 34, Issue 8, pp. 1825 – 1842.

Brännback, M., Carsrud, A.L., & K. Niklas (2014) Understanding the Myth of High Growth Firms: The Theory of the Greater Fool. New York: Springer

Brown, R., and Mason, C. (2012) Raising the batting average: re-orientating regional industrial policy to generate more high growth firms. Local Economy, 27(1), pp. 33-49

Brownlow, G. (2007), The Causes and Consequences of rent-seeking in Northern Ireland 1945-72. Economic History Review, 60, 1, pp. 70-96

Brownlow, G. (2016), Soft Budget Constraints and Regional Industrial Policy: Reinterpreting the Rise and Fall of De Lorean *Queen's University Centre for Economic History Working Paper 14-09*

Central Statistics Office (2014) Business in Ireland Abridged 2012 Dublin: CSO

Department for the Economy (2017), Economy 2030 - A consultation on an Industrial Strategy for Northern Ireland. Belfast: DFE

Fa, T. & P. Xiao Chuan (2012) The Impact of Fiscal Decentralization on Regional Industrial Structure ICEE '12 Proceedings of the 2012 3rd International Conference on E-Business and E-Government - Volume 02 Pp 1525-1529

Fløysand , A., Jakobsen S-E., & J.L. Sánchez-Hernández (2014), Regional Industrial Policy in Norway and Spain in Baptista, R. & J. Leitão eds. Entrepreneurship, Human Capital, and Regional Development New York: Springer

Gereffi, G., Jiang, X. & W. Milberg and Gary Gereffi (2014), Industrial policy in the era of vertically specialized industrialization in eds. Kozul-Wright, R., Nübler, I. & J.M. Salazar-Xirinachs eds. Transforming Economies: Making industrial policy work for growth, jobs and development. Gneeva: International Labour Office

Glennie, A. & S Westlake (2016), Where next for Innovate UK? London: NESTA

Hadler, G. & K. Nadvi (2007), Local clusters in global value chains: exploring dynamic linkages between Germany and Pakistan *Entrepreneurship & Regional Development Volume 17, 2005 - Issue 5 pp 339-363*

Humphrey J. and H. Schmitz (2002), How does insertion in global value chains affect upgrading in industrial clusters? Reg. Studies 36, 1017–1027.

Karl, H., Moller, A., & Wink, R. (2003). Regional Industrial Policies in Germany. C*eris-Cnr Working Paper No. 9/2003.*

Kasahara, S. (2013) The Asian Developmental State and the Flying Geese Paradigm Discussion Paper Series No.213 United Nations Conference on Trade and Development (UNCTAD)

Kim, Y-S. (2008), Regional Industrial Policy in Korea- Its outcome and implications *KIET Industrial Economic Review Mar. / Apr. 2008 Vol 13 No 2*

Mac Flynn, P. (2015), A New Industrial Policy for Northern Ireland. *NERI Working Paper No.24* Belfast: NERI

Mac Flynn, P. (2016), Productivity and the Northern Ireland. *NERI Working Paper No.39* Belfast: NERI

Mason G., Bishop K. and C. Robinson (2009), Business Growth and Innovation: The Wide Impact of Rapidly Growing Firms in UK City-Regions. London: NESTA.

Memis, E. (2009), The Potential for Cooperative Regional Industrial Development Strategies in Asia and the Implications of Emerging China and India. Policy Paper Series. Asia Pacific Trade and Investment Initiative, UNDP Regional Centre for Asia Pacific: Colombo.

Mole K, Hart M, Roper S and Saal D (2008) Differential gains from Business Link support and advice: A treatment effects approach. *Environment and Planning C: Government and Policy 26(2): 315–334.*

Ng, PY. & R.T. Hamilton (2016) Experiences of high-growth technology firms in Malaysia and New Zealand, Technology Analysis & Strategic Management, 28:8, 901-915,

Northern Ireland Economic Council (2001), Developing a Regional Industrial Strategy for Northern Ireland. *NIEC Occasional Paper No.14* Belfast: NIEC

Northern Ireland Statistics and Research Agency (2016) Quarterly Employment Survey Northern Ireland: NISRA

OECD (2012), Industrial Policy and Territorial Development: Lessons from Korea, OECD Publishing, Paris.

Office for National Statistics (2016) Regional Gross Value Added (Income Approach) London: ONS.

Office for National Statistics (2016b) Who owns businesses in the UK? London: ONS.

Oxford Economics (2010), The case for a reduced rate of Corporation Tax in NI Belfast: Economic Reform Group

Vitols, S. (1997), German Industrial Policy: An Overview, Industry and Innovation, 1997, 4(1): 15-36.

Warwick, K. (2013), "Beyond Industrial Policy: Emerging Issues and New Trends", OECD Science, Technology and Industry Policy Papers, No. 2, OECD Publishing.

RECENT NERI WORKING PAPERS

The following is a list of recent research working papers from the NERI. Papers are available to download by clicking on the links below or from the NERI website:
http://www.nerinstitute.net/research/category/neriworkingpaperseries/

Number	Title/Author(s)
41	Ireland's Housing Emergency - Time for a Game Changer – Paul Goldrick-Kelly & Tom Healy
40	Innovative Competence, How does Ireland do and does it matter? – Tom McDonnell
2016:	
39	Productivity and the Northern Ireland Economy – Paul Mac Flynn
38	Divisions in Job Quality in Northern Ireland – Lisa Wilson
37	Employees on the Minimum Wage in the Republic of Ireland –Micheál L. Collins
36	Modelling the Impact of an Increase in Low Pay in the Republic of Ireland – Niamh Holton and Micheál L. Collins
35	The Economic Implications of BREXIT for Northern Ireland – Paul Mac Flynn
34	Estimating the Revenue Yield from a Financial Transactions Tax for the Republic of Ireland – Micheál L. Collins
33	The Fiscal Implications of Demographic Change in the Health Sector – Paul Goldrick-Kelly
32	Understanding the Euro Crisis: Causes and Fixes – Thomas A. McDonnell
2015:	
31	Cultivating Long-Run Economic Growth in the Republic of Ireland– Thomas A. McDonnell
30	Incomes in Northern Ireland: What's driving the change – Paul Mac Flynn
29	Earnings and Low Pay in the Republic of Ireland: a profile and some policy issues – Micheál L. Collins
28	Internal Devaluation and Labour Market Trends during Ireland's Economic Crisis - Thomas A. McDonnell and Rory O'Farrell
27	A Profile of those on the Minimum Wage – Micheál L. Collins
25	Taxes and Income Related Taxes Since 2007 - Micheál L. Collins
24	A New Industrial Policy for Northern Ireland - Paul Mac Flynn
23	The Better is Yet to Come: a social vision and an economic strategy for Ireland in the 21st Century – Tom Healy
22	Outsourcing in the Public Sector: a value for money perspective – Aoife Ní Lochlainn and Micheál L. Collins
2014:	
21	Assessing Funding Models for Water Services Provision in Ireland - Thomas A. McDonnell
20	Modelling the Distributive Impact of Indirect Taxation Changes in the Republic of Ireland - Micheál L. Collins
19	The Distributive Effects of Recent VAT changes in the Republic of Ireland - Micheál L. Collins
18	Total Direct and Indirect Tax Contributions of Households in Ireland: Estimates and Policy Simulations - Micheál L. Collins
17	Hours and Earnings in the Northern Ireland Labour Market - Paul Mac Flynn
16	Pension Policy in Ireland: an evaluation – How we Might Better Achieve its Stated Aims – Eamon Murphy
15	An Overview of the Irish Labour Market – Rory O'Farrell