NCC Productivity Statement 2019

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Ireland's National Competitiveness Council (NCC)

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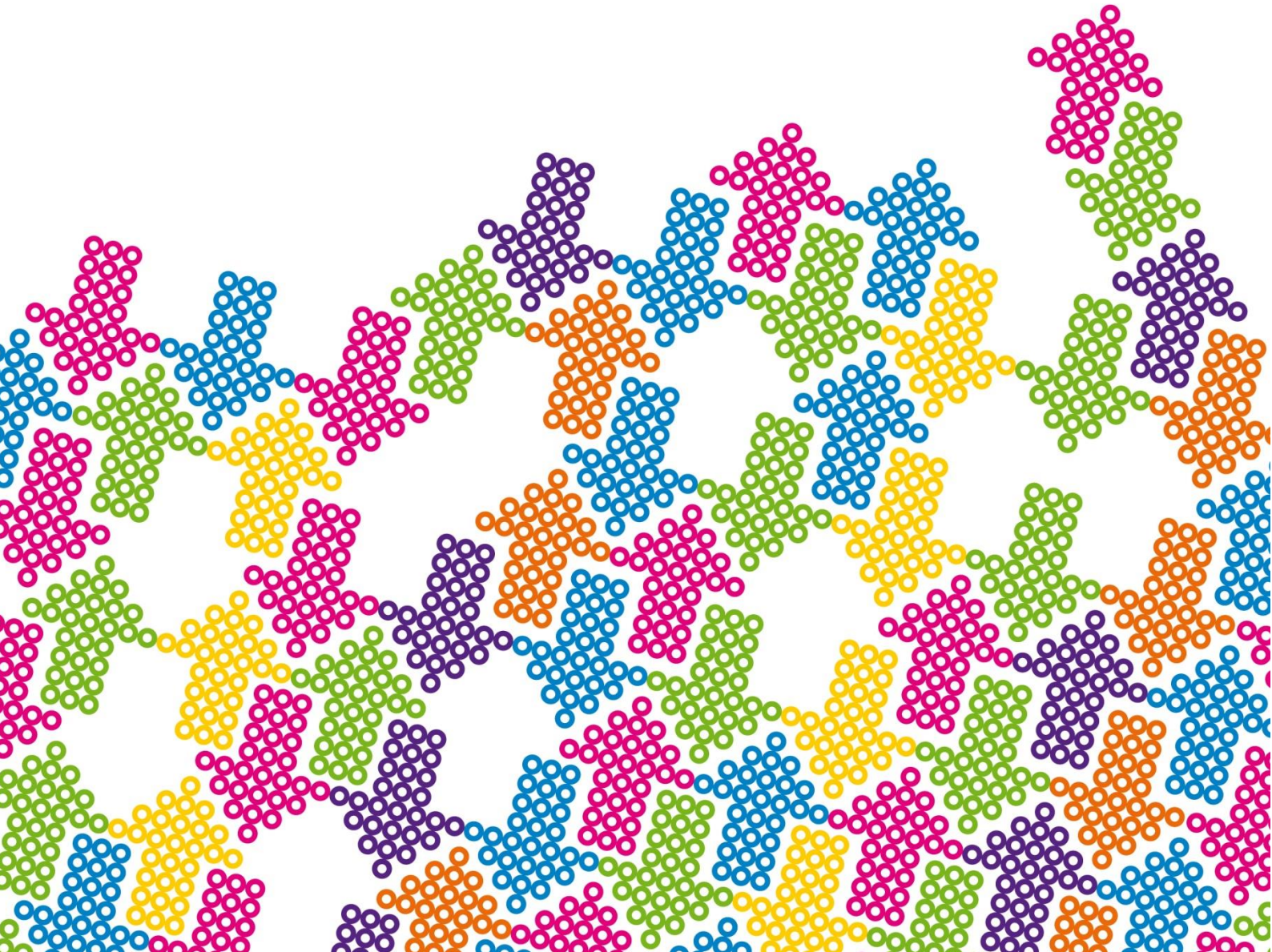
National Competitiveness Council

Productivity Statement 2019



Executive Summary

- Productivity growth is critical for enterprise competitiveness, economic growth, the financing of public services and ultimately improvements of living standards through sustainable wage levels.
- Aggregate labour productivity figures for Ireland continue to show a strong performance relative to other advanced economies, even when based on GNI*, which excludes globalisation activities from the data.
- Much of the strong performance can be attributed to the operations of large firms in specific sectors (e.g. ICT, Pharma-Chemicals, Food & Beverages) which continue to show productivity levels well above the Euro Area average.
- At enterprise-sector level, the latest CSO figures show that in the 2000-2017 period, the annual average growth rate of labour productivity in the Foreign-owned Multinational Enterprise (MNE) dominated sector was 9.3 per cent, compared with 2.3 percent in the Domestic and Other sector, which in turn was higher than the EU average (1.3 per cent).
- However, the productivity performance of the Domestic and Other sector is likely to be influenced by a number of traditionally domestic industries (e.g. Food & Beverages) which over time have shown an increasing share of foreign value added or turnover.
- While there is clear evidence about the direct contribution made by a highly productive and concentrated group of MNEs to the Irish economy, there is less clarity about the productivity performance of an increasingly diverse domestic sector, where both high-performing and low-performing sectors and SMEs seem to co-exist.
- More access to disaggregated data on productivity by size class and at enterprise level (e.g. on firm characteristics such as exporting, finance, innovation, age, human capital) would be useful for developing enterprise-policy interventions to address national needs.
- In terms of the indirect contribution made by MNEs, OECD research shows that domestic sourcing by foreign affiliates is relatively low in Ireland, which has consequences for knowledge, skills and ultimately productivity gains to spill over to the rest of the Irish economy, including Irish SMEs.
- Therefore, policies that facilitate closer economic interactions between SMEs and MNEs (via trade linkages, research collaborations and labour mobility) could help raise the productivity levels of SMEs and should be at the core of sectoral and enterprise strategy, as highlighted in *Future Jobs Ireland*.
- This statement recommends that further access to disaggregated data will help our understanding of these interactions and facilitate improvements in policy design.

National Competitiveness Council's Productivity Statement 2019

Background

The National Competitiveness Council (NCC) was established in June 1997, and is an independent advisory body that reports to the Taoiseach and the Government, through the Minister for Business, Enterprise and Innovation, on key competitiveness issues facing the Irish economy and offers recommendations on policy actions required to enhance Ireland's competitive position. In March 2018, the Government mandated the NCC to assume the additional role as Ireland's National Productivity Board, following the European Council recommendation in September 2016, that each eurozone member state establish a National Productivity Board.

The Council has a strong record of emphasising the importance of productivity as a key determinant of competitiveness, prosperity, wages and ability to finance public services. In 2006 and 2012, the Council published reports on Ireland's productivity performance spanning the period 1980-2011 and its release in February 2017 benchmarks Ireland's productivity performance for the period 2004-2014[1].

Following this research, and the data gaps identified, the Council recommended in its *Challenge Report 2016* that the Central Statistics Office (CSO) produce more comprehensive statistics and indicators on productivity for the Irish economy. Implementation of this recommendation began in May 2018 with the first release of the CSO's statistical publication, *Productivity in Ireland 2016*. In July 2019 the CSO published its second release, *Productivity in Ireland 2017*, which includes its additional breakdowns of the data and new experimental estimates.

In its role as Ireland's National Productivity Board, the NCC has decided to produce an annual productivity statement to track the productivity performance of the Irish economy. This statement draws on CSO publications and on research produced by Irish and international researchers and by the OECD. Building on the main takeaways of the first edition in 2018, this NCC *Productivity Statement 2019* includes an update on Irish productivity with a strategic focus on the performance of Small and Medium Enterprises (SMEs) and the potential productivity spillovers from Multinational Enterprises (MNEs) to SMEs, highlighting related data and measurement issues of policy relevance.

Introduction

Productivity growth is a key component of national competitiveness (along with factor costs) as it enables firms to compete successfully in domestic and international markets by facilitating output to be produced in a more efficient and effective manner. Ultimately, productivity is the engine of economic growth in the medium term, the main driver of improvements in living standards, a key determinant of the sustainable wage level, and a key factor determining our ability to finance public services.

[1] NCC (2017) Benchmarking Ireland's Productivity Performance, 2004-2014; NCC (April 2012) Ireland's Productivity Performance, 1980-2011; NCC (2006) Overview of Ireland's Productivity Performance, 1980-2005; other documents available here: http://www.competitiveness.ie/Publications/

Two measures of productivity are commonly considered:

- Labour Productivity, which is measured as output (e.g. GDP or GVA) per person engaged or output per hour worked, and it is widely used because of the ease of calculation and data requirements[2]; and
- Multi-Factor Productivity, which measures the efficiency by which both labour and capital are used together in the production process. This measure differs from labour productivity as it controls for the capital intensity of firms or capital deepening in the economy (i.e. capital per worker).

Since the contributions from labour and capital are subject to demographic constraints (including participation rates) and diminishing returns, respectively, long-term economic growth is driven fundamentally by multi-factor productivity, which can also be seen as an approximate measure of innovation or technical change.

In the following sections, this Statement provides: (i) an update on the latest productivity statistics for Ireland at aggregate, industry-sector, and ownership-sector levels in the context of other advanced economies; (ii) a picture of Irish SME productivity relative to that of large firms by sector and across OECD countries; (iii) a discussion of the potential contributions made by MNEs and how they could help to raise SME productivity; and (iv) concluding remarks highlighting the need for more dissagragated data to better inform enterprise policy and to identify possiblities for narrowing the productivity gap between SMEs and large firms in Ireland.

Irish Productivity Statistics – Update

Despite the global slowdown over the past decade, aggregate labour productivity figures for Ireland continue to show a strong performance relative to other advanced economies. This finding prevails (although to a lesser extent) even when globalisation activities are excluded from the calculations, by using Gross National Income (GNI*) rather than Gross Domestic Product (GDP) to measure economic activity.[3]

According to the latest OECD[4] and CSO[5] data available, Ireland's GDP per hour worked in 2018 is clearly well above the OECD average and some of the world's most advanced economies. On a (GNI*) basis, Irish labour productivity continues to be above the OECD average and above the UK, although slightly below the levels in the USA, Germany and France (Figure 1).

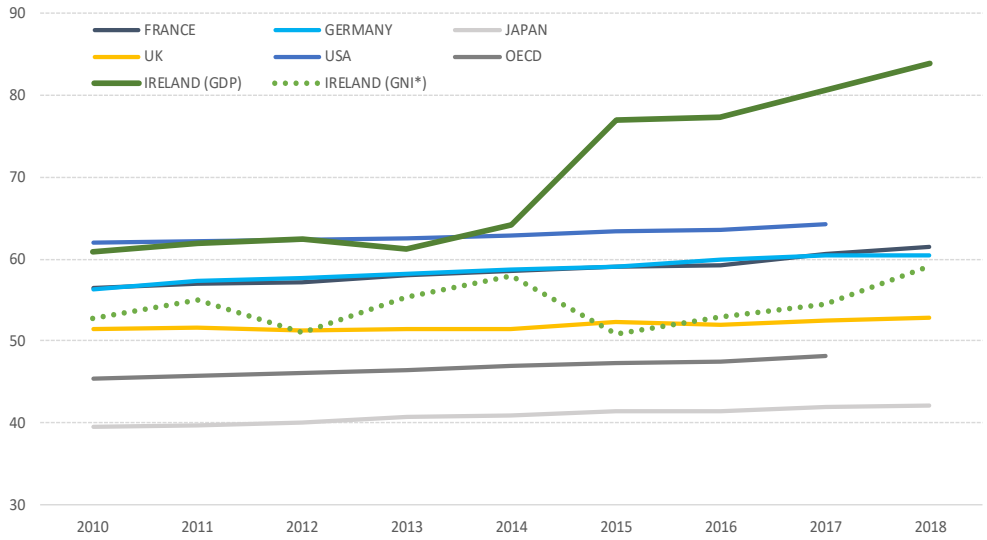
[2] Labour productivity is the measure that will be used most frequently in this document because of its availability and comparability with respect to other metrics.

[3] https://www.cso.ie/en/releasesandpublications/ep/p-nie/nie2017/mgni/

[4] OECD (2019), *OECD Compendium of Productivity Indicators 2019*, OECD Publishing, Paris (https://doi.org/10.1787/b2774f97-en)

[5] CSO (2019) *Productivity in Ireland 2017* (https://www.cso.ie/en/releasesandpublications/ep/p-nie/nie2018/)

Figure 1. Labour Productivity: GDP/GNI* Per Hour Worked (USD 2010 PPP)



Source: OECD, CSO

As discussed in the NCC *Productivity Statement 2018*, Ireland's strong performance can, to a significant extent, be attributed to the operations of large firms in specific sectors. The latest CSO data show that the manufacturing sector made by far the largest contribution to overall labour productivity growth over the period 2000-2017. This was followed by Information and Communication; Professional, scientific, administration and support services; and Financial and insurance activities (Figure 2).

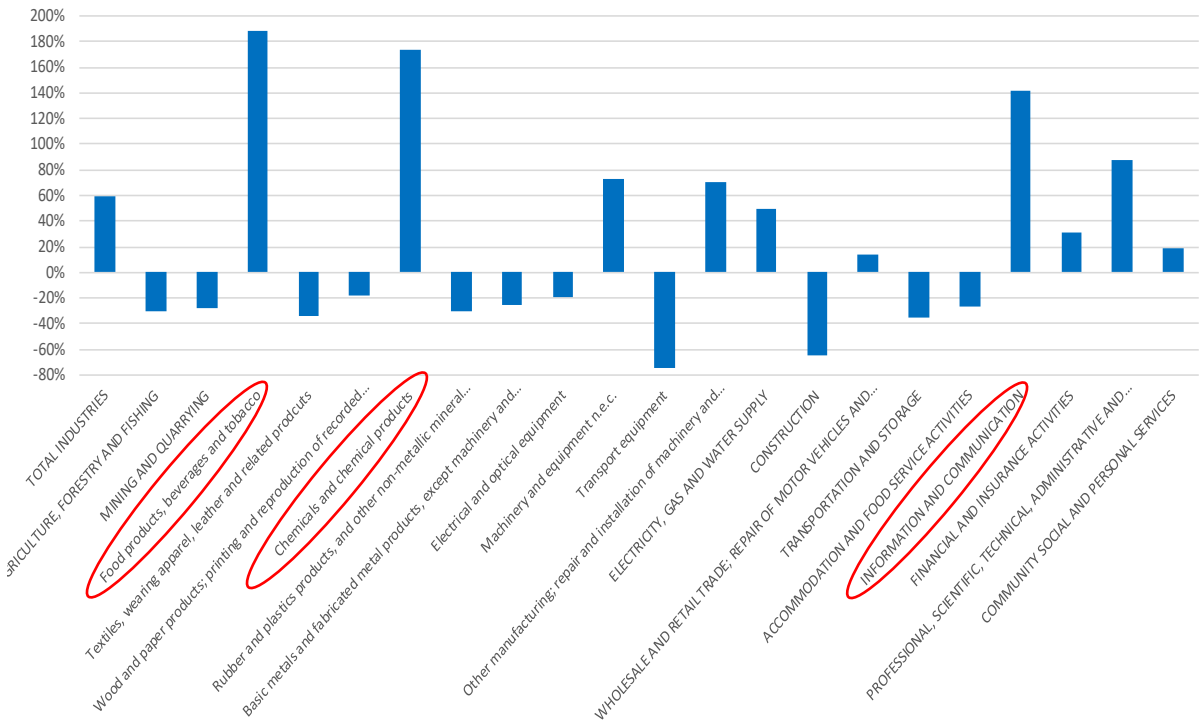
Figure 2. Sectoral Contribution to Labour Productivity Growth: 2000-2017 (average percentage contribution)

Source: CSO

From an international perspective, the latest EU KLEMS data available[6] for 2015 show that Ireland's sectoral productivity gap (i.e. ratio of Irish to Euro Area average productivity) was significantly higher in: Food, Beverage and Tobacco (around 180 per cent); Pharmaceuticals and Chemicals (around 170 per cent); and in Information and Communication (140 per cent).

Irish productivity in 2015 was also above the Euro Area average in Professional, Scientific and Technical activities (around 80 per cent); Machinery and Equipment (around 75 per cent); and Other Manufacturing (around 70 per cent) in 2015. Most other industries, particularly Construction (-60 per cent) and Transport equipment (-70 per cent), saw productivity levels below the Euro Area average (Figure 3).

Figure 3. Sectoral Productivity Gap (Ireland relative to the Euro Area), 2015

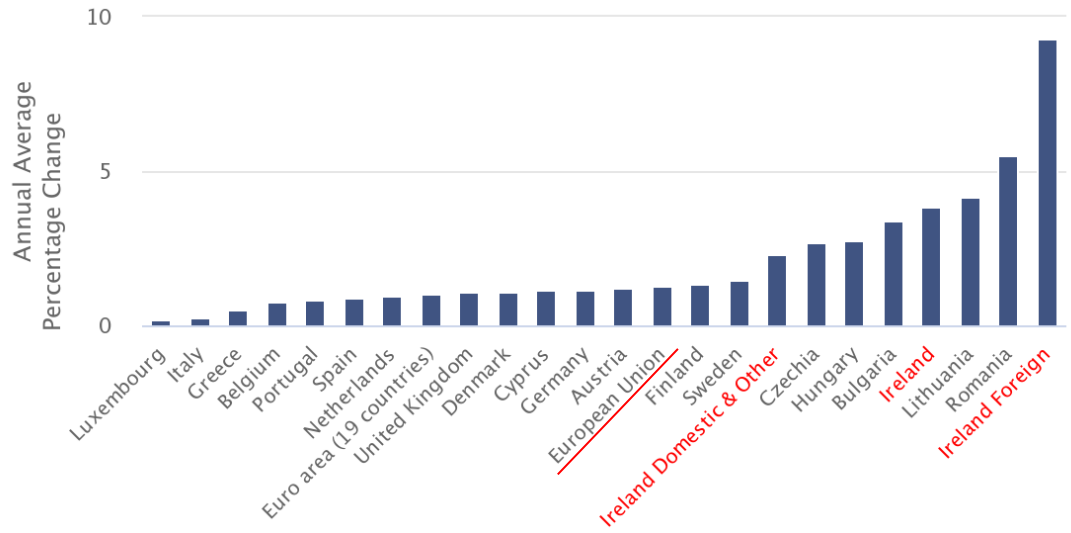


Source: EU KLEMS
Note: Labour productivity for Ireland and the EA is measured as GVA / Total Hours Worked per Person Engaged – 2010 prices

In the case of the enterprise-sector, the CSO data[7] on labour productivity growth distinguish between two ownership sectors: the 'Foreign MNE-dominated' sector, and the 'Domestic and Other' sector[8]. The latter's labour productivity growth was on average 2.3 per cent per year between 2000 and 2017, which is above the EU average of 1.3 per cent (Figure 4).

[6] http://www.euklems.net/
[7] https://www.cso.ie/en/releasesandpublications/ep/p-pii/productivityinireland2017/
[8] According to the CSO, foreign-owned MNE-dominated sectors occur where MNE turnover on average exceeds 85 % of the sector total and includes Chemicals and chemical products; Software and communications sectors; Reproduction of recorded media; Basic pharmaceutical products and pharmaceuticals preparations; Computer, electronic and optical products; Electrical equipment; Medical and dental instruments and supplies. The 'Domestic and Other' category includes all other sectors excluding those listed as part of the Foreign-owned MNE-dominated sectors and includes the Wholesale & retail sector including the sale and repair of motor vehicle; Administrative & support service activities; Construction; Accommodation & food services; and the Manufacture of food, beverage & tobacco.

Figure 4. Labour productivity annual growth rate, 2010-2017
(Foreign vs Domestic & Other sectors compared)



Source: CSO

However, it should be noted that the productivity performance of the Domestic and Other sector is likely to be influenced by a number of traditionally domestic industries (e.g. Food & Beverages) which over time have shown an increasing share of foreign value added or turnover, according to the CSO Structural Business Statistics. Since these foreign-owned enterprises have relatively higher productivity than Irish-owned enterprises in this broad sector, the productivity growth of Irish-owned enterprises in the 'Domestic and Other' sector could be lower and possibly below the EU average.

While the further disaggregation and breakdown of Ireland's productivity statistics produced by the CSO is very welcome, the wide variation in productivity levels within the current aggregates points to the potential benefits of having more disaggregated data, from the perspective of informing policy aimed at enhancing productivity growth in the Domestic and Other sector.

Productivity of Irish SMEs and Large Firms

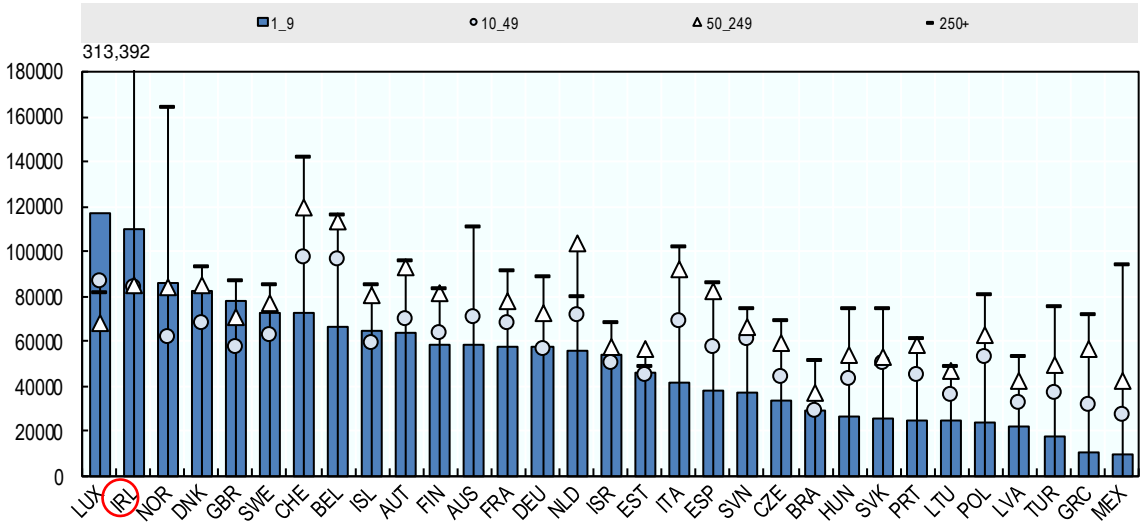
The Council of the European Union's recommendations[9] for Ireland (published on the 2nd July 2019) emphasised the implementation of measures, including those in Future Jobs Ireland 2019, to diversify the economy and improve the productivity of Irish firms and of SMEs in particular.

Increasing the productivity of Irish SMEs is indeed one of the most critical elements to ensure an effective, broad and sustained improvement of Ireland's competitive economic base. However, wide disparities in SME productivity performance appear to exist across (and within) industries and across firms of different size. The latest OECD *Compendium of Productivity Indicators 2019* analyses the role of firm size in productivity performance across OECD countries. In terms of value added per person employed in 2016, Ireland showed the biggest productivity gap between SMEs (with less than 250 employees) and large firms (with more than 250 employees) of any OECD country; this result is driven mainly by the high-performing MNEs operating in Ireland[10] (Figure 5).

[9] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019H0905(07)&from=EN

[10] It should be noted that high-performing MNEs operating in Ireland are among the most productive firms globally and therefore the benchmark in Ireland is relatively high compared to other countries.

Figure 5. Labour productivity in SMEs and large firms, <u>total business economy</u>
(Value added per person employed, USD, current PPPs, 2016)

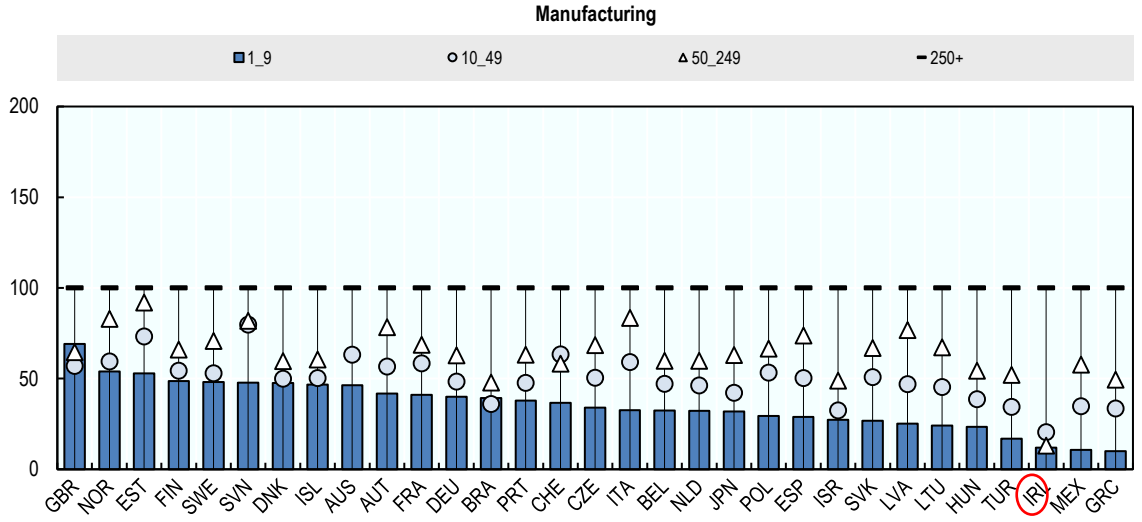


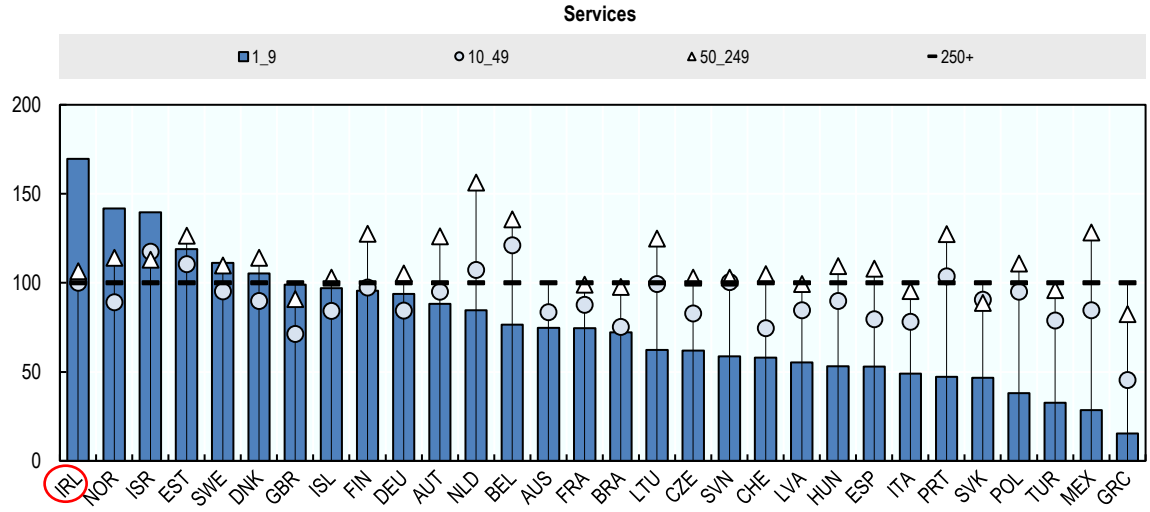
Source: OECD Compendium of Productivity Indicators, 2019

However, Figure 5 shows that the labour productivity of Irish micro enterprises (those SMEs employing between 1 and 9 employees) was the second largest in 2016, after Luxembourg's.

When we look at these metrics separately for manufacturing and business services, we find a markedly different pattern for Ireland, with the relative productivity of micro SMEs in services being the highest and productivity in manufacturing second lowest, only larger than that for Greece and Mexico. (Figure 6).

Figure 6. Labour productivity in SMEs and large firms, <u>manufacturing and business services</u>
(Value added per person employed, index 250+=100, 2016)



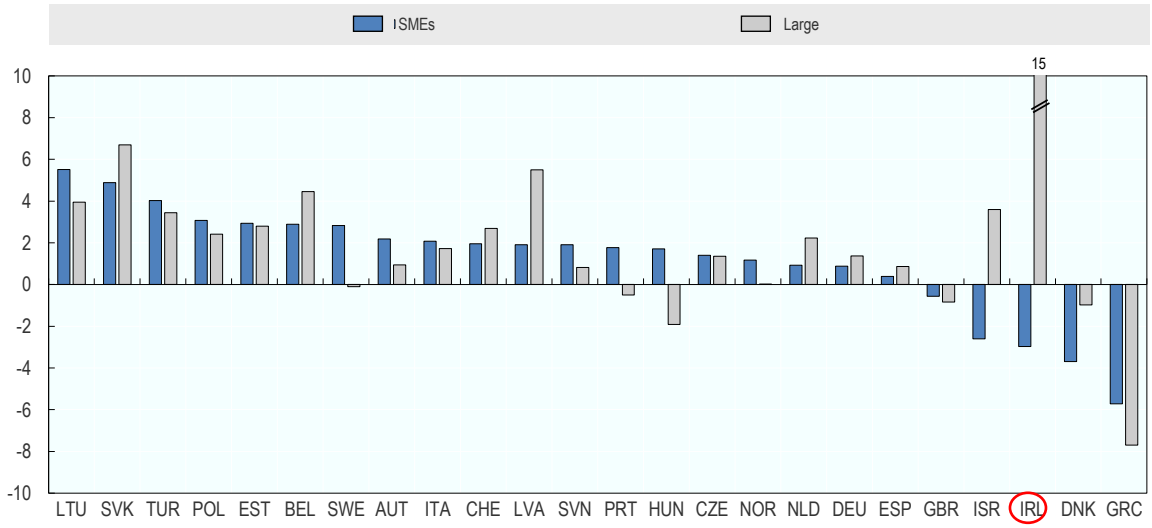


Source: OECD Compendium of Productivity Indicators, 2019

The productivity gap in manufacturing was positive and the third largest among OECD countries in 2016, with Irish SMEs showing only 12 per cent of the productivity levels seen in large firms. Conversely, the productivity gap in services is negative and the largest in the OECD area, with Irish SMEs, and particularly micro enterprises, showing productivity levels 170 per cent higher than that of large firms.

Looking at all sectors performance over time, the OECD data confirm that the labour productivity of Irish SMEs in manufacturing fell by around 3 per cent per year between 2010 and 2016, while large firms' productivity was growing at an annual rate of 15 per cent over the same period; this represents the largest dispersion among OECD countries (Figure 7). Similar trends, though much less contrasting, can also be found in the accommodation and food services sector.

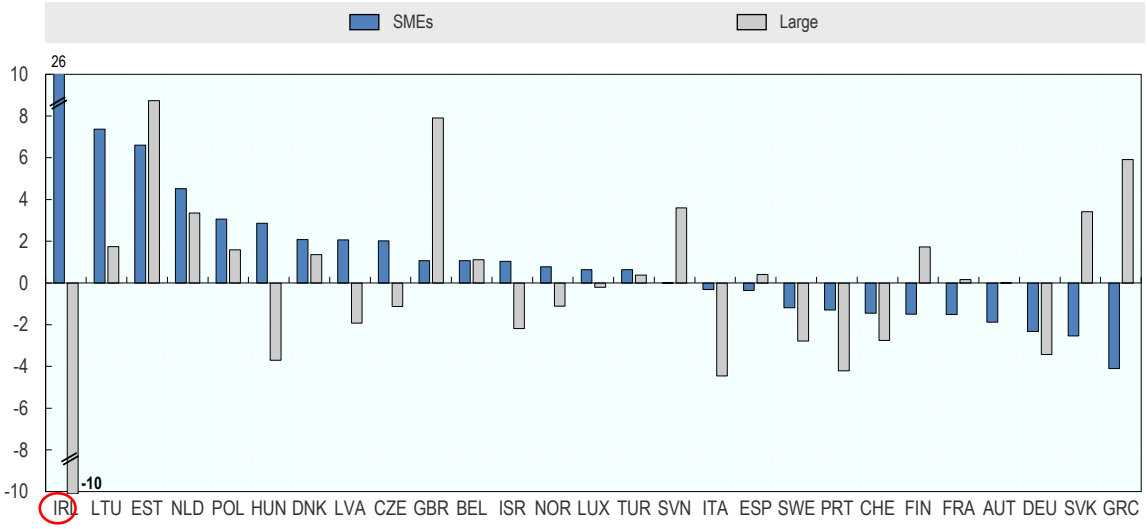
Figure 7. Labour productivity growth in SMEs and large firms, manufacturing, 2010-2016
(Real value added per person employed, percentage change at annual rate)



Source: OECD Compendium of Productivity Indicators, 2019

By contrast, productivity of Irish SMEs in construction has grown at 26 per cent per year, while large firms' productivity saw an annual rate of decline of 10 per cent between 2010[11] and 2016, thus representing the largest disparity among OECD countries (Figure 8). A similar trend, though much smoother, can be observed in the wholesale and retail trade sector.

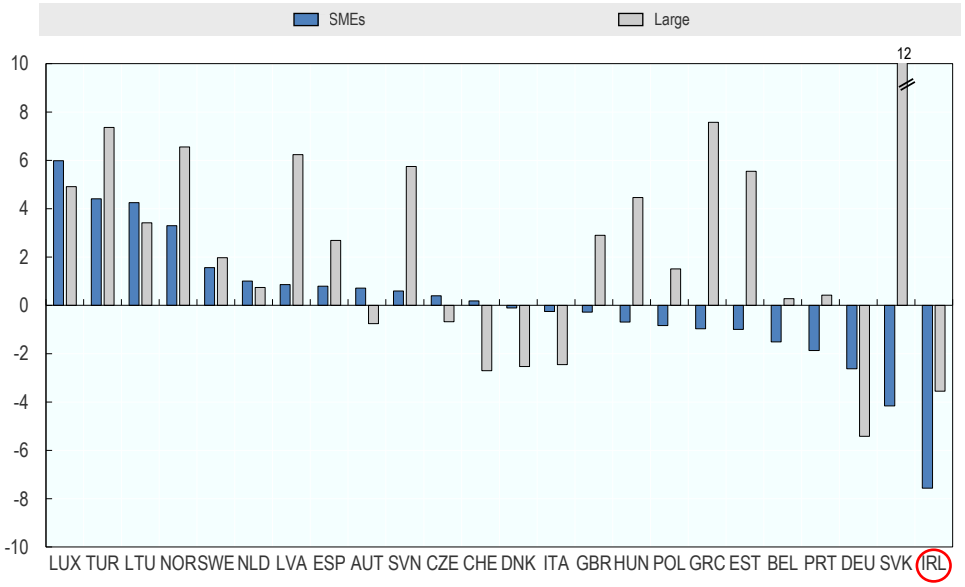
Figure 8. Labour productivity growth in SMEs and large firms, construction, 2010-2016
(Real value added per person employed, percentage change at annual rate)



Source: OECD Compendium of Productivity Indicators, 2019

Labour productivity in transportation and storage (Figure 9), as well as in administrative and support services (Figure 10), has fallen for both Irish SMEs and large firms, showing some of the largest declines among OECD countries.

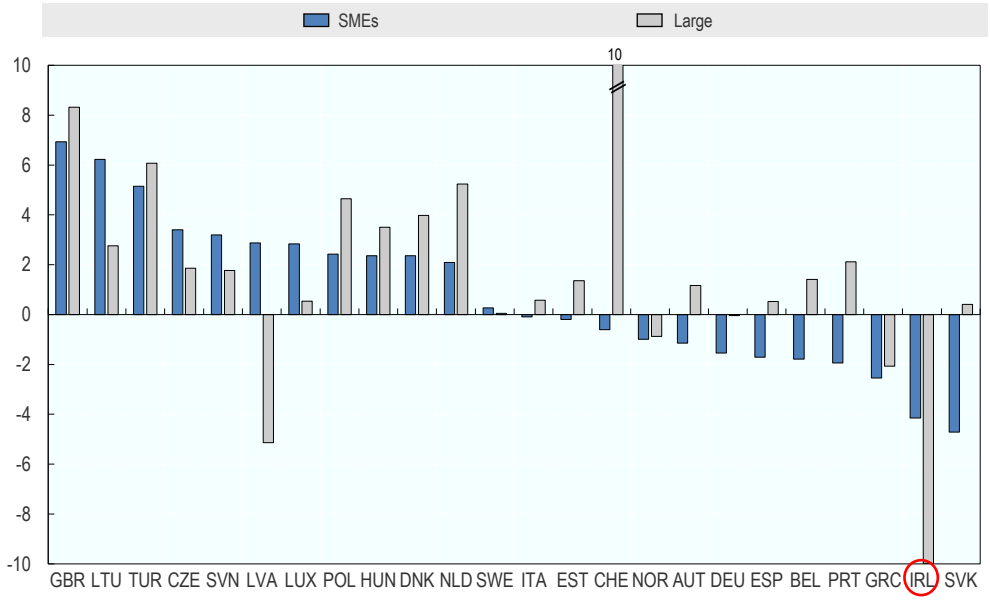
Figure 9. Labour productivity growth in SMEs and large firms, transportation and storage, 2010-2016
(Real value added per person employed, percentage change at annual rate)



Source: OECD Compendium of Productivity Indicators, 2019

[11] Following the 2008-09 crisis, productivity levels of SMEs in 2010 (base year) were very low and hence the growth rate, with respect to 2016 (end year), is large. It should be noted that the OECD breakdown of productivity growth by size is based on the assumption that the price index used to deflate value added is the same for SMEs and large firms.

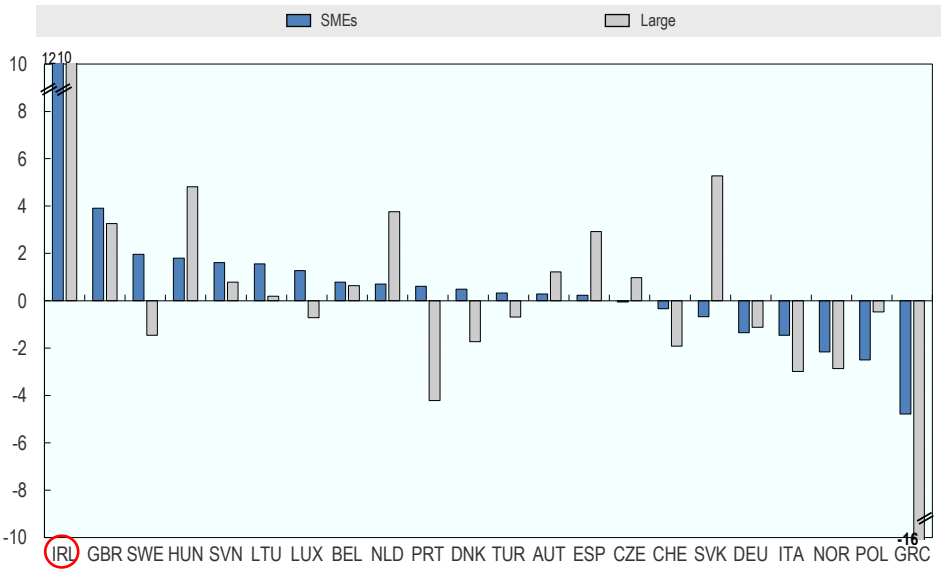
Figure 10. Labour productivity growth in SMEs & large firms, administrative & support services, 2010-16 (Real value added per person employed, percentage change at annual rate)



Source: OECD Compendium of Productivity Indicators, 2019

In contrast, labour productivity growth in the professional, scientific and technical activities sector[12] was the largest compared to other advanced economies at 12 per cent and 10 per cent, per year for Irish SMEs and large firms, respectively, over the 2010-2015 period (Figure 11). According to CSO Business Statistics, professional, scientific and technical activities were mostly carried out by Irish-owned enterprises in the 2008-2017 period.

Figure 11. Productivity growth in SMEs & large firms, professional, scientific & technical activities, (Real value added per person employed, percentage change at annual rate, 2010-16)

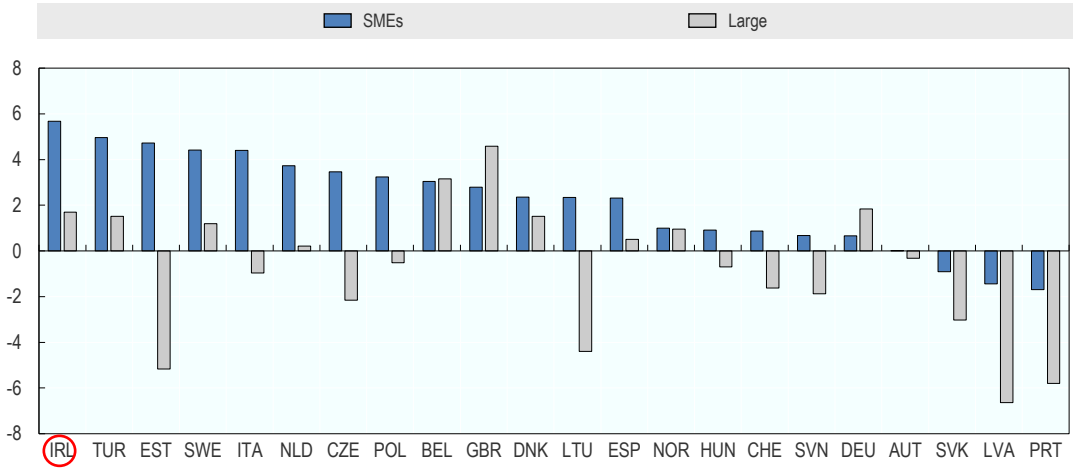


Source: OECD Compendium of Productivity Indicators, 2019

[12] According to Eurostat, the 'activities of head offices and management consultancy' as well as 'legal and accounting services' make a considerable contribution to the output of this sector. Moreover, productivity of the 'activities of head offices' is also quite a volatile series in the case of Ireland with a relatively low productivity in the base year 2010 and a relatively high productivity in the end year 2016, which amplifies the growth rates calculated, according to Eurostat.

To a lesser extent, a similar trend was observed in the ICT services sector (which by contrast is mostly foreign-owned) where Ireland's SMEs recorded the largest productivity growth (at nearly 6 per cent per year) compared to other advanced economies between 2010 and 2016 (Figure 12).

Figure 12. Productivity growth in SMEs and large firms, ICT services, 2010-2016
(Real value added per person employed, percentage change at annual rate)



Source: OECD Compendium of Productivity Indicators, 2019

These OECD productivity indicators corroborate existing evidence about the wide and (increasing) variation in Irish productivity levels across industries and, within them, across enterprise size, compared to other OECD countries. These findings call for further analysis so that appropriate policy instruments can be devised to tackle the specific needs of different groups of enterprises.

In view of the contrasting productivity performances observed in Ireland between large enterprises and SMEs, a key issue is how to increase the productivity levels of the latter. In the next section we look at one possible route to increasing SME productivity, namely through their interactions with MNEs.

MNEs and their potential contribution to raising SMEs productivity levels

Historically, the attraction of MNEs to host economies has been largely based on the direct effects these MNEs generate, i.e., their value added, employment, etc. A further attraction is the indirect effects of such MNEs, i.e., the additional value added, employment, etc. that MNEs can generate through their linkages with domestic firms and especially SMEs. An additional attraction of having MNEs is their potential spillover effects, i.e., the knowledge externalities or unintended benefits that might spill over from more productive MNEs to local firms and result in productivity growth of the latter. We look at each of these in turn.

Direct Impact of MNEs

In terms of direct effects, the contribution of MNEs to the Irish economy is quite clear and well recognised, and the scale of MNE activities has resulted in high levels of concentration in the Irish economy. The latest CSO data indicate that a small number of foreign-owned, MNE-dominated sectors accounted for nearly 40 per cent of GVA in 2018. MNE affiliates are also found to be relatively more important in trading activities, with Ireland's top five exporters (importers) accounting for 26 per cent (16 per cent) of all goods exports (imports) in 2017, according to CSO trade statistics. They

also play an important role in public finances, as the Revenue Commissioners' analysis[13] reveals that the 10 largest firms in Ireland accounted for almost 45 per cent of corporate tax receipts in 2018. Foreign-owned enterprises accounted in 2016 for one fifth (20.3 per cent) of employment in the Irish business economy, according to the CSO Business Statistics.

The large concentration levels of highly productive MNEs also impact on the meaning that can be attached to the use of average productivity measures and what can be said in relation to policy interpretation. Following concerns raised in the NCC *Productivity Statement 2018* about the impact of economic concentration on Irish productivity, the Department of Business, Enterprise and Innovation (DBEI) published a research paper[14] which shows that the productivity performance[15] of a few large firms (top 5) seems to account for a large fraction (about one-third) of aggregate productivity fluctuations. The impact is larger for Ireland than for other advanced economies, due to the higher rates of economic concentration within sectors and lower diversification across sectors[16].

In the Department of An Taoiseach's recently published *National Risk Assessment 2019 – Overview of Strategic Risks*[17], similar concerns are noted about the considerable dependence of Ireland's output and value added on MNEs. The *Assessment* refers to vulnerabilities in terms of how anchored foreign MNEs are to the Irish economy, particularly in a context of international tax reform and rising anti-globalisation and protectionist sentiments.

As discussed in the NCC *Productivity Statement 2018*, Ireland should not switch attention away from the attraction, support and development of MNE operations, but rather should focus on the continued diversification (around existing areas of competitive advantage) of the FDI base of industries and, equally important, on further embedding their activities into the rest of the Irish economy and maximising spillovers particularly to SMEs.

Indirect Impact of MNEs

The indirect impact of MNEs can occur through forward and backward trade linkages. The potential for indirect effects, via backward linkages, depends on many factors. For example, it can be expected to vary by sector, as some sectors are inherently more global in their supply chains. This limits the extent to which local sub-supply can happen, unless it has the scale and quality to be a global supplier. The scale of linkages may also depend on the quality and sophistication of local sub-supply and strength of the information flows between MNEs and potential sub-suppliers.

In terms of backward linkages, the contribution of MNEs to the Irish economy seems relatively modest. For example, recent OECD work[18] shows that in 2016 Ireland recorded the lowest share (8 per cent) of domestic sourcing (from local MNEs and SMEs) by foreign affiliates compared to any

[13] Revenue Commissioner (2019) ' Corporation Tax 2018 Payments and 2017 Returns'. See also "Budget 2020: Addressing Fiscal Vulnerabilities": http://www.budget.gov.ie/Budgets/2020/Documents/Budget/Fiscal%20Vulnerabilities.pdf

[14] Papa, J. (2019) "What is behind aggregate productivity growth in Ireland. A granular approach", DBEI Research Paper, Dublin. [https://dbei.gov.ie/en/Publications/Publication-files/Research-Paper-What-is-behind-aggregate-productivity-growth-in-Ireland.pdf]

[15] This finding is based on analysis of productivity shocks.

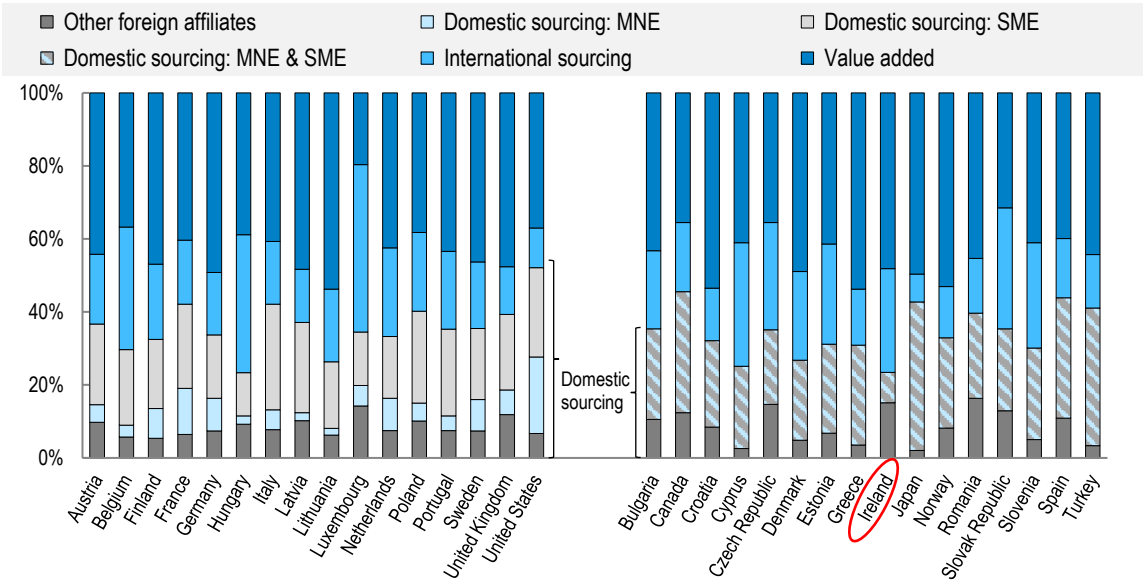
[16] Gabaix, X. (2011) "The granular origins of aggregate fluctuations", Econometrica, Vol. 79, No. 3, pp 733–772.

[17] https://www.gov.ie/en/publication/ac294e-government-publishes-top-strategic-risks-facing-ireland/

[18] Cadestin, C., et al. (2019), "Multinational enterprises in domestic value chains", OECD Science, Technology and Industry Policy Papers, No. 63, OECD Publishing, Paris. [Updated figures for 2016 provided directly by the OECD] The authors highlight that there are caveats in the analysis and the database relies on assumptions and estimates for missing data.

other OECD country[19] (Figure 13). These results are corroborated by the latest release of the Annual Business Survey of Economic Impact[20] (ABSEI), which covers Agency-supported[21] enterprises in Ireland. It indicates a declining trend between 2000 and 2017 in foreign-owned firms sourcing both materials (13 per cent in 2017) and services (5 per cent in 2017) in Ireland, including from Irish SMEs. Moreover, the largest and most productive sectors (i.e. ICT and Pharma-Chemicals) are the ones sourcing the least in Ireland, with shares below the world average. These are some of the sectors where global value chains are most highly developed.

Figure 13. Sourcing structure of foreign affiliates, total economy, 2016



Source: OECD Analytical AMNE database
Note: For some countries (e.g. Ireland) there is no breakdown for domestic sourcing (see right panel)

The OECD study also shows that the backward output multiplier[22] for Ireland in 2016 was the lowest of any other OECD country (Figure 14), which indicates a relatively low level of economic integration between MNEs and the rest of the Irish economy - including SMEs. This reflects the reality that the former are strongly integrated into global value chains.

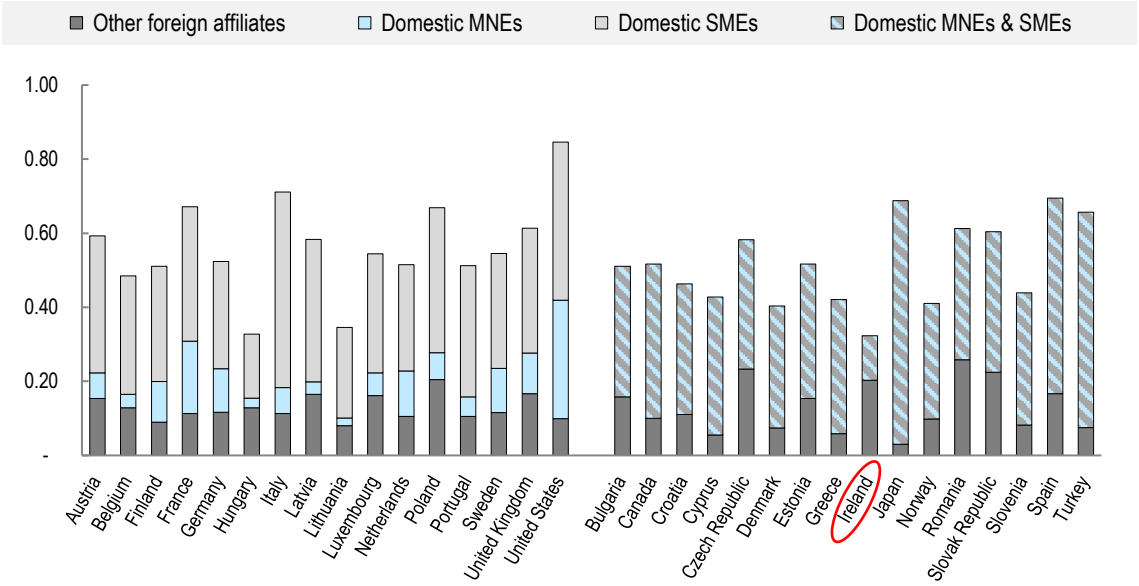
[19] The results are similar in terms of forward linkages as Irish MNEs and SMEs used the second lowest share (15 per cent) of output produced by foreign affiliates in 2016, only behind Hungary (12 per cent).

[20] https://dbei.gov.ie/en/Publications/Annual-Business-Survey-of-Economic-Impact-2017.html

[21] These are enterprises supported by IDA, Enterprise Ireland and Údarás na Gaeltachta

[22] Backward multipliers measure how a change in the final demand for products of MNE affiliates affects (directly and indirectly) the activity of other industries or enterprises in the host economy.For example, an extra euro of sales for foreign affiliates in 2016 generated on average an additional EU 0.32 for the Irish economy, of which EU 0.12 beneffited Domestic MNEs & SMEs (the remaining EU 0.20 beneffited the group of other foreign affiliates in the Irish economy).

Figure 14. Backward output multiplier of foreign affiliates, total economy average, 2016



Source: OECD Analytical AMNE database
Note: Only indirect effects presented; weighted across industries

Productivity Spillovers from MNEs

In terms of productivity spillover effects, and in line with the international evidence[23], empirical studies for Ireland with a primary focus on intra-industry spillovers for manufacturing (Ruane & Ugur 2005) and services (Haller 2014) have shown contrasting results with no conclusive evidence on the impact of MNEs on domestic firms' productivity. The most recent study (Di Ubaldo et al 2018), which empirically tested for productivity spillovers via trade linkages by using OECD MultiProd results (Papa et al 2018) based on CSO data, found minimal and sometimes negative productivity spillovers[24] from MNEs to domestically-owned manufacturing firms. This is likely to be related to the low level of trade linkages between both types of enterprises, which is a necessary, though not a sufficient, condition for this type of productivity spillover to occur. Positive spillover effects were found only when indigenous firms supplying services to MNEs had invested enough R&D to benefit from unintended knowledge transfers. Although a more granular analysis is needed, these results could be related to the positive productivity performance observed in the OECD data for both SMEs and large firms in the professional, scientific and technical activities and ICT services sectors.

Overall, the existing research points to inconclusive and contrasting results on productivity spillovers in Ireland. These are likely to reflect methodological, data coverage and measurement issues (Barrios, Görg and Ströbl 2011), such as the inclusion or exclusion of certain sectors and firms, the level of industry aggregation and samples used, and the potential channels for spillovers tested, i.e. demonstration effects, trade linkages or labour mobility. In relation to the last (and relatively unexplored) spillover channel, further empirical analysis on workers switching jobs between highly-productive MNEs and less-productive local firms (and vice versa) is required to assess the extent to which such knowledge and skills transfers may lead to positive (or negative) productivity spillovers in Ireland.

[23] See Blomström and Kokko (1998), Görg and Strobl (2001), Lipsey and Sjöholm (2005), Havrãnek and Irsova (2011), among others.
[24] Negative productivity spillovers implies that firm level productivity is lower in sectors with higher trade with MNEs.

Conclusion

The measurement and interpretation of productivity performance in Ireland remains challenging from a sectoral and enterprise policy perspective. In view of the highly concentrated nature of the Irish economy and the wide variation in firm productivity performance that appears to exist across and within sectors, a call for caution is needed when deriving policy implications from the Irish aggregate data.

While there is no doubt that aggregate productivity in Ireland is strong (compared to other advanced economies) and that its strength primarily derives from a highly concentrated group of high-productivity MNEs, there is less known about the productivity performance of an increasingly diverse domestic sector, where both high- and low-productivity performing Irish SMEs seem to co-exist. There is also little clarity on how well integrated SMEs are with the most productive sectors of the Irish economy.

Economic output, productivity and employment are traditionally viewed as the most important economic variables for policy making on competitiveness issues, with MNEs and SMEs in Ireland making the largest contribution to output (and productivity) growth and employment generation, respectively. However, in a context characterised by growing uncertainties and risks, with an unresolved Brexit, international tax reforms and anti-globalisation and protectionist sentiments arising, it is important that economic (and productivity) growth do not rely solely on MNEs; the productivity performance of SMEs is also crucial to competitiveness and growth. The current contrast suggests that facilitating a closer economic integration between MNEs and SMEs across and within industries (via trade linkages, labour mobility and innovation cooperation leading to productivity spillovers) should be at the core of any sectoral and enterprise policy. In this respect, the strong focus of *Future Jobs Ireland* on raising productivity levels in SMEs and a number of poorly performing sectors is welcome.

As discussed in the NCC *Productivity Statement 2018*, policies designed to enhance Irish productivity should be comprehensive and tackle the many related elements within firms (e.g. digitalisation, upskilling, innovation and knowledge-based capital), between firms (e.g. economic integration, productivity spillovers) and across industries (e.g. infrastructure, diversification) to ensure a more resilient, widespread and sustained growth of productivity in Ireland. The upcoming NCC *Competitiveness Challenge 2019* Report contains a comprehensive and detailed discussion of some of these productivity-enhancing policies for Ireland.

Recommendation: In recent years, the CSO has published more productivity statistics, which together with analysis by the OECD has increased our understanding of the drivers of productivity in Ireland. The policy focus on productivity, including the recommendations in the recently-published OECD study SMEs and Entrepreneurship Policy[25], point to the need for more analysis based on data disaggretated by size class and at enterprise level (e.g. on firm characteristics such as exporting, finance, innovation, age, human capital). The NCC recommends arrangements be put in place to facilitate such analysis and improve our understanding of Irish productivity, particularly among SMEs. This will facilitate and improve the further development of enterprise policy interventions.

[25] This study was commissioned by DBEI: https://dbei.gov.ie/en/Publications/OECD-SME-and-Entrepreneurship-Policy-in-Ireland.html