Budget 2019

Small Advanced Open Economies – A comparative analysis

ROBERT KEOGH AND CRÍONA BRASSILL
IGEES UNIT
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**Key findings**

- What constitutes a small open economy and its characteristics varies. This paper filtered economies by population size, GDP per capita, and trade openness to identify comparator economies.

- Ireland displayed less dynamic resilience to the recent global economic crisis and banking crisis – with a deeper decline and greater magnitude of recovery relative to comparator economies which had a less volatile experience - as shown in GDP growth, the general government balance, general government gross debt, the unemployment rate, and the employment rate.

- Even amongst small advanced open economies, Luxembourg and Ireland are outliers in terms of their relative shares of exports and FDI stocks in the economy.

- The growth in median net equivalised disposable income in Ireland was comparatively low between 2007 and 2016, though it has increased since 2014.

- The market income inequality and poverty rate before taxes and transfers in Ireland are the highest of the comparator economies, but after redistribution, both are reduced considerably.

- The Irish population is relatively young. By 2070, the old age dependency ratio will remain relatively low, despite considerable ageing of the Irish population. Ireland has one of the highest shares of population (aged 30-34) with tertiary education. Net migration in Ireland was more cyclical during 2006-2017 than in most comparator economies.

- The unemployment rate in Ireland, which soared in the crisis, has recovered, showing a volatility unlike other small advanced open economies, though mirrored by Estonia, Latvia, and Lithuania.

- Yet, the Irish employment rate in 2017 is below the 2007 level and is one of the lowest of the small advanced open economies. The Irish female participation rate is one of the lowest, and unlike many comparator economies it did not increase during 2007-2017. The Irish male participation rate remains below the 2007 level and is also comparatively low.

- Ireland is an outlier in terms of the volatility of the construction sector’s share of employment - high in 2007 and low during 2010 - 2014. A relatively high share of total employment is concentrated in the tourism and agricultural sectors.

- Overall, some broad similarities exist between the performance of Ireland and that of Iceland, Belgium, and Luxembourg across a number of the indicators. There are also some, though fewer, broad similarities with the performance of some Eastern European countries. During this time period, there appears to be few similarities with the performance of New Zealand and most Nordic countries.
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1 Introduction

1.1 Overview

Ireland is a highly open and globalised economy that is deeply engaged in international trade and heavily influenced by global economic developments. Ireland ranks 6th in the world on the 2018 Index of Economic Freedom, and according to the World Bank, Ireland has the 4th highest trade-GDP ratio in the world, behind Luxembourg, Hong Kong, and Singapore.

The return of higher global growth offers a window of opportunity for Ireland, as an export-oriented economy. Yet, Ireland as a small highly open economy is, by definition, more exposed to shocks in the external trading environment than larger, less trade-dependent economies. With growing uncertainty in the global geopolitical and economic environment, such as the resurfacing of protectionist policies, and the ongoing evolution of the international tax environment, there are many external factors for Ireland to monitor.

As the Irish economy continues to grow, government policy needs to continue to strengthen the underlying fundamentals of the economy, to enhance the capacity of the economy to withstand the various adverse shocks that may occur in the future. This is often referred to as economic resilience, which is understood to be the policy-driven ability of the economy to recover from or deal with negative shocks to which it may be inherently exposed. It can also be more broadly defined as the capacity to contain potential vulnerabilities, reduce the probability of crises and enhance the capacity of the broader economy to cope with shocks. By enhancing economic resilience, policy can minimise the risk of and depth of impact from future crises. It is desirable to pursue a sustainable and inclusive growth model that does not jeopardise any improvements in standards of living secured over recent years.

Ultimately, this paper seeks to draw insights from a comparison with other small advanced open economies that face similar challenges. The focus of this paper is on comparing Ireland’s economic performance over the period of the recent crisis and recovery with other small advanced open economies in order to prompt questions and discussion about the economic performance and resilience of the Irish economy.

This paper covers one crisis; a longer period including a number of different types of economic crises would be required to draw insights on the longer-term resilience of the Irish economy.

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2 European Commission website at https://ec.europa.eu/ireland/news/key-eu-policy-areas/economy_en
3 The Heritage Foundation at https://www.heritage.org/index/
7 Rohn, O. et al. (2015), page 3.
1.2 Research questions

The analysis in this paper seeks to contribute to the policy discussion on the following questions:

- What small advanced open economies with a similar outlook and macroeconomic characteristics are appropriate benchmarks for Ireland?
- How does Ireland’s performance on key macroeconomic indicators compare with the selected benchmark economies?

1.3 Structure

Following this introduction, the paper follows the structure below:

- Section 2 will identify the small advanced open economies that are selected as key comparator economies for Ireland.
- Section 3 will benchmark Irish economic performance during the recent crisis and subsequent economic recovery across a range of key macroeconomic indicators relative to the selected small advanced open economies.
- Section 4 will compare the Irish performance across a range of structural policy indicators relative to the selected small advanced open economies.
- Section 5 will distil findings from the analysis.
2 Comparator small advanced open economies

This section identifies the key comparator small advanced open economies for Ireland.

Defining small advanced open economies

An open economy is ‘an economy that allows the unrestricted flow of people, capital, goods and services across its borders’. A small open economy ‘is assumed to be too small to influence the level of world output or the world interest rate with conditions in the rest of the world taken as given’.

There are various ways to define what a small advanced open economy is; different organisations and individuals select different economies according to the metrics used. This section will briefly address some of these differences in approach.

A small economy is one that is small in size. This is typically measured in three ways: according to GDP levels, population or labour force size, or land area. Traditionally, population size has been used as the metric to identify small economies and while there is not consensus on the appropriate level, this paper uses a cut-off of up to 20 million. This ensures that the Netherlands, with a population of over 17 million, is included.

An advanced economy list is compiled by the IMF based on the criteria of: per capita income, export diversification, and the degree of integration into the global financial system. This paper further filters the IMF list of advanced economies with Gross Domestic Product (GDP) per capita of US $30,000 or more.

Economic openness has many measures, the most common include the trade-GDP ratio (sum of exports and imports of goods and services divided by GDP), exports-GDP ratio (exports of goods and services divided by GDP), and Foreign Direct Investment (FDI) openness (according to stocks or flows of FDI). This paper measures openness by the export-GDP ratio, as Ireland is a highly export-oriented economy. All small advanced economies tend to be open, however, it is interesting to note the heterogeneity of the group in the scale of each economy’s export orientation.

The definitions above used in this analysis support the objective of comparing the economic performance of Ireland with economies of a relatively similar size, level of advancement, and openness, and the experiences of outliers, to distil findings and insights about the economic performance and resilience of the Irish economy.

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8 Bishop (2009).
11 Mirroring approach used by Skilling (2018).
12 IMF at https://www.imf.org/external/pubs/ft/weo/faq.htm#q4b
To identify comparator small advanced open economies for Ireland, the following filters were used (refer to Figure 1)\(^\text{13}\):

i. Small population of up to 20 million, according to OECD population statistics.

ii. Advanced according to the IMF list\(^\text{14}\).

iii. GDP per capita of US$30,000 or more.

iv. Trade openness, as measured by the export-GDP and trade-GDP ratio.

**Figure 1: Filtration process**

Table 1 lists the comparator small advanced open economies that emerged from the filtration process, with many also featuring in the literature review undertaken for this research. While additional filters would have resulted in a smaller group, the trade-off would be fewer potentially informative similarities and differences from the analysis. Other small open economies which have a GDP per capita below US$30,000 were also included in the shaded area in Table 1 and in the analysis where possible.

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\(^{13}\) Skilling (2018) employs a similar methodology in identifying key comparator economies for Scotland.

\(^{14}\) International Monetary Fund (2018), *World Economic Outlook, April 2018: Cyclical Upswing*, Structural Change, page 220.
Table 1: Comparator small advanced open economies for Ireland

<table>
<thead>
<tr>
<th>Countries</th>
<th>Population</th>
<th>Advanced</th>
<th>GDP per capita (US$)</th>
<th>Export-GDP ratio (%)</th>
<th>Trade-GDP ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luxembourg</td>
<td>590,667</td>
<td>Yes</td>
<td>104,103</td>
<td>230</td>
<td>407</td>
</tr>
<tr>
<td>Singapore</td>
<td>5,612,300</td>
<td>Yes</td>
<td>57,714</td>
<td>172</td>
<td>310</td>
</tr>
<tr>
<td>Ireland</td>
<td>4,784,383</td>
<td>Yes</td>
<td>69,331</td>
<td>120</td>
<td>221</td>
</tr>
<tr>
<td>Belgium</td>
<td>11,351,727</td>
<td>Yes</td>
<td>43,324</td>
<td>85</td>
<td>165</td>
</tr>
<tr>
<td>Netherlands</td>
<td>17,081,507</td>
<td>Yes</td>
<td>48,223</td>
<td>83</td>
<td>154</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8,419,550</td>
<td>Yes</td>
<td>80,190</td>
<td>65</td>
<td>120</td>
</tr>
<tr>
<td>Denmark</td>
<td>5,748,769</td>
<td>Yes</td>
<td>56,308</td>
<td>55</td>
<td>101</td>
</tr>
<tr>
<td>Austria</td>
<td>8,772,865</td>
<td>Yes</td>
<td>47,291</td>
<td>54</td>
<td>101</td>
</tr>
<tr>
<td>Iceland</td>
<td>338,349</td>
<td>Yes</td>
<td>70,057</td>
<td>47</td>
<td>90</td>
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<tr>
<td>Sweden</td>
<td>9,995,153</td>
<td>Yes</td>
<td>53,442</td>
<td>45</td>
<td>84</td>
</tr>
<tr>
<td>Finland</td>
<td>5,503,297</td>
<td>Yes</td>
<td>45,703</td>
<td>39</td>
<td>73</td>
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<tr>
<td>Norway</td>
<td>5,258,317</td>
<td>Yes</td>
<td>75,505</td>
<td>35</td>
<td>67</td>
</tr>
<tr>
<td>Israel</td>
<td>8,712,400</td>
<td>Yes</td>
<td>40,270</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>New Zealand</td>
<td>4,509,700</td>
<td>Yes</td>
<td>42,941</td>
<td>26</td>
<td>51</td>
</tr>
<tr>
<td>Malta</td>
<td>460,297</td>
<td>Yes</td>
<td>26,946</td>
<td>136</td>
<td>262</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2,065,895</td>
<td>Yes</td>
<td>23,597</td>
<td>82</td>
<td>146</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2,847,904</td>
<td>Yes</td>
<td>16,681</td>
<td>81</td>
<td>148</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>10,578,820</td>
<td>Yes</td>
<td>20,368</td>
<td>80</td>
<td>152</td>
</tr>
<tr>
<td>Estonia</td>
<td>1,315,635</td>
<td>Yes</td>
<td>19,705</td>
<td>78</td>
<td>154</td>
</tr>
<tr>
<td>Latvia</td>
<td>1,950,116</td>
<td>Yes</td>
<td>15,594</td>
<td>60</td>
<td>119</td>
</tr>
</tbody>
</table>

Source: OECD statistics and World Bank; sorted by Export-GDP ratio.

The international benchmarking in section 3 and section 4 includes, subject to data availability, the selected comparator economies (Selected CEs in the graphs) from the blue section of Table 1 and the other comparator economies (Other selected CEs in the graphs) from the grey section of Table 1, in order to prompt questions and discussion about the economic performance and resilience of the Irish economy.
These selected small advanced open economies are by no means a homogenous group\(^\text{15}\). Each has differing context which is important to consider in interpreting the international comparison. The institutional constraints arising from being in a monetary union is of particular relevance, Table 2.

Table 2: Type of Small Advanced Open Economy through institutional lens

<table>
<thead>
<tr>
<th>Type</th>
<th>Fiscal policy</th>
<th>Monetary and exchange rate policy</th>
<th>Labour market structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>National (not in monetary union)</td>
<td>No institutional constraints</td>
<td>Control over monetary and exchange policy</td>
<td>Mobility restrictions to varying degrees</td>
</tr>
<tr>
<td>National (in a monetary union)</td>
<td>Monetary union may impose institutional constraints</td>
<td>No control over monetary and exchange rate policy</td>
<td>Mobility across countries</td>
</tr>
<tr>
<td>Region in an economy</td>
<td>National economy imposes strong institutional constraints</td>
<td>No control over monetary and exchange rate policy</td>
<td>Mobility across regions</td>
</tr>
</tbody>
</table>

Source: Carlin and Soskice (2003), 'Draft chapter – The Open Economy’

\(^{15}\) As noted by Skilling (2018), there is no single economic model pursued in common by small advanced open economies.
3 Key macro-economic indicators of economic performance comparison

Summary

This section provides an analysis of Irish economic performance from before the onset of the recent economic crisis through the recovery vis-à-vis selected comparator economies across a range of key macro-economic indicators.

3.1 Real Gross Domestic Product (GDP) growth

Figure 2 shows the annual rate of real GDP growth between 2007 and 2017 for Ireland vis-à-vis the selected and other comparator economies. The general trend with the onset of the crisis was a declining growth rate between 2007 and 2008, and between 2008 and 2009 (when growth rates in most economies were negative, i.e. the economy was contracting). In 2010, there was a rebound to mostly positive growth rates, followed by a fall in real GDP growth for the subsequent two years. Since 2012/3, generally growth has been positive in most of the selected comparator economies, with growth in 2017 of between 1.1 percent and 3.6 percent. Growth in the other comparator economies in 2017 was higher with 4.9 percent in Estonia and 4.5 percent in Latvia.

Ireland’s growth rate was lowest in 2009, at -5.0 percent. This was amongst the largest contractions in GDP of all the selected comparator economies, although Iceland and Finland’s economies contracted by considerably larger amounts. Since 2012, Ireland’s growth rate has increased considerably, and for the last four years Ireland has been one of the two fastest growing economies of all the selected comparator economies. In 2017, the Irish economy grew by 7.2 percent. Recent growth figures are, however, distorted by the economic activity of multinational corporations in Ireland.

Not all the small advanced open economies displayed the same exposure to the global financial crisis. Israel was the only economy of the selected comparator economies that experienced no negative growth between 2007 and 2017. Moreover, New Zealand and Singapore experienced steadier growth over the period, with only minor contractions in 2008/9.

Note that some economies had policy levers at their disposal that others did not; e.g. the monetary policy tools available to Israel are different than the tools available to Eurozone economies.

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16 In response to this, the Central Statistics Office (CSO) have developed modified gross national income (GNI*) for the Irish economy. However, this is only available in nominal terms currently.
Overall, Ireland was highly exposed to the global financial crisis which resulted in large economic costs in the short-term; but in the longer term Ireland was able to recover from the shock which is reflected in the strong economic growth since the beginning of the recovery relative to the selected comparator economies.

*Figure 2: Real GDP growth, 2007-2017*

Source: IMF, World Economic Outlook 2018 and CSO. Ireland’s real GDP growth is sourced from CSO to reflect the most recent updates.
3.2 GDP per capita

Figure 3 shows GDP per capita between 2007 and 2017 for Ireland and the selected and other comparator economies.

Ireland experienced a decline in GDP per capita during the recent crisis (-19.9 percent during 2008-2012), but since the beginning of the recovery in 2012, has seen steady growth in GDP per capita (+41.4 percent). However, the large increase in GDP in Ireland in recent years has been partly driven by large multinational corporations relocating their economic activities to Ireland\(^\text{17}\), though there has also been strong underlying economic growth. Iceland’s experience was similar to Ireland with a decline in GDP per capita at the onset of the crisis (-40.6 percent during 2007-2009) and a subsequent increase (+72.4 percent during 2009-2017). Singapore and New Zealand increased GDP per capita by 47.1 and 32.1 percent respectively during 2007-2017, but the path was steadier with less of an initial decline compared to Ireland and Iceland.

Overall, Ireland’s GDP per capita fell in the early years of the crisis, but subsequently experienced strong growth since the beginning of the recovery relative to comparator economies\(^\text{18}\).

*Figure 3: GDP per capita, 2007-2017, current prices*


\(^\text{17}\) Department of Finance (2018a), page 4.

\(^\text{18}\) Albeit these growth figures do not accurately represent the real economy due to distortions in the national accounts caused by multinational economic activity in Ireland.
3.3 General Government Balance

Figure 4 shows the general government balance of Ireland vis-à-vis the selected and other comparator economies for the period 2007-2017. Many of the small advanced open economies ran fiscal deficits between 2009 and 2012. Since 2012, these economies have been reducing their deficits, so that in 2017 about half of the selected comparator economies ran a fiscal surplus\(^\text{19}\).

Ireland is a clear outlier. During 2007-2017, Ireland had budget deficits, which ranged from -32.1 percent of GDP in 2010 to -0.4 percent of GDP in 2017, with year-on-year improvements in the deficit since 2010.

Yet many of the small advanced open economies had fiscal surpluses in 2017\(^\text{20}\). Iceland’s experience was similar to Ireland’s, with large deficits between 2008 and 2013, although Iceland had fiscal surpluses in both 2016 and 2017. Norway and Singapore are also outliers with both mostly registering strong fiscal surpluses throughout the period 2007-2017.

Figure 4: General government balance, 2007-2017

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19 It should be noted that our group of comparator economies is broader than those in the Summer Economic Statement which only included economies close to full employment – and all were running fiscal surpluses.

20 IFAC (2018) and Government of Ireland (2018) have suggested it would be prudent to consider this at the current stage of the economic cycle.
3.4 General government debt

Figure 5 shows the evolution of general gross government debt as a percentage of GDP for Ireland compared to the selected and other comparator economies between 2007 and 2017. Many economies experienced an increase in general government debt with the onset of the global financial crisis and a decrease in recent years resulting in 2017 levels being above 2007 for almost every comparator economy. Ireland had one of the lowest public debt ratios in 2007, increasing to the highest public debt ratio in 2012 (166.1 percent of GNI*) amongst the selected comparator economies. This increase was largely due to the fall in taxation revenue after the onset of the crisis and state support provided to the retail banking sector. Subsequently improvements have resulted in a public debt ratio of 111.1 percent of modified GNI* in 2017. Nevertheless, it is the highest public debt ratio of all the selected and other comparator economies, a concern from the perspective of the economic resilience of Ireland and its ability to weather future shocks.

In 2017, Luxembourg, New Zealand, Norway, and Sweden had the lowest debt ratios of the selected comparator economies (23.0 percent, 26.4 percent, 36.7 percent, and 40.9 percent respectively); while Belgium and Singapore had public debt ratios of 103.2 percent and 110.9 percent respectively. Iceland’s debt ratio trend was similar to Ireland with an increase of 67.4 percentage points during 2007-2011 and a fall of 53.8 points by 2017. Less volatile movements were experienced by most of the other selected comparator economies during the period, with Switzerland and Sweden experiencing the least variation in the debt ratio over the period.

Figure 5: General Government Gross Debt (% of GDP), 2007-2017

Source: IMF, CSO provided modified GNI data and Eurostat provided debt figures.

21 Department of Finance (2018b), page 7.
3.5 Household debt

Figure 6 shows the evolution of household debt in Ireland and the selected and other comparator economies between 2007 and 2016.

Ireland experienced the largest decline (-63.6 points) followed by Denmark (-38.9 points) in household debt of the selected comparator economies between 2007 and 2016. Thus Ireland has performed strongly in reducing its level of household debt, to the 7th highest in 2016 from the 3rd highest in 2007 among the selected comparator economies. Austria, Belgium, and New Zealand displayed low household debt in 2016 (91.6 percent, 116.4 percent, and 121.6 percent of net disposable income respectively), and relatively steady household debt over the period 2007-2017.

Overall, the reduction of household debt in Ireland is a positive development which should increase the resilience of households if maintained at lower levels.

Figure 6: Household debt, 2007-2016

Source: OECD, National Accounts at a Glance. Data for Singapore and Malta was not available in this dataset.
3.6 Unemployment rate

Figure 7 shows the evolution of the unemployment rate in Ireland vis-à-vis comparator economies between 2007 and 2017. In many of the economies, the unemployment rate increased to some degree after the crisis struck. But Ireland and the other comparator economies had the largest increases in unemployment.

The crisis had a strong, persistent negative impact on unemployment in Ireland. In 2012, Ireland’s unemployment rate reached a peak of 16 percent. Other small advanced open economies fared better than Ireland, with more stability in the unemployment rate during 2007-2017. There were only minor changes to unemployment in Singapore and Switzerland during 2008-2012. Estonia, Latvia, and Lithuania had unemployment patterns similar to Ireland and have all experienced steady recoveries since the peak of the crisis, now having relatively low levels of unemployment in 2017.

Overall, this illustrates the impact of the recent crisis on Ireland’s unemployment rate and its recovery in the medium term.

Figure 7: Unemployment rate, 2007-2017

Source: IMF, World Economic Outlook 2018.
3.7 Employment rate

Figure 8 shows the evolution of the employment rate in Ireland and comparator economies between 2007 and 2017. In general, there was a moderate decline in the employment rate for a number of years from 2008.

In 2007 Ireland had a mid-range employment rate compared to the comparator economies. By 2012, the employment rate had declined to 59.9 percent of working age population, which was the lowest of all comparator economies. Since then, despite an increase of 7.8 percentage points, Ireland’s employment rate remains comparatively low.

Latvia experienced an employment rate decline similar to Ireland, declining by almost 10 percentage points between 2008 and 2010, though it has since recovered. Iceland had the highest employment rate in 2017 of all the comparator economies, at 86.1 percent, though it declined by 7 points between 2007 and 2010 before recovering. Switzerland and New Zealand also have relatively high employment rates, at 79.8 percent and 76.9 percent respectively in 2017.

Figure 8: Employment rate, 2007-2017

Source: OECD Short-Term Labour Market Statistics. Data for Singapore and Malta was not available in this dataset.
3.8 Productivity

Figure 9 shows the evolution of growth in GDP per hour worked – an indicator of labour productivity – for Ireland and comparator economies between 2007 and 2017.

The Irish growth in GDP per hour worked is comparably strong with greater volatility than the selected comparator economies, but the distortions in GDP due to multinational activity affect this indicator. In 2017 Ireland experienced the highest growth in GDP per hour worked of the selected comparator economies; while Latvia and Lithuania experienced higher growth.

A recent productivity paper\textsuperscript{22} showed that Ireland has one of the highest levels of productivity, as measured by output per hour, amongst advanced economies. It stated that Ireland has not been immune from the global productivity slowdown. Ireland’s productivity performance is built upon a narrow base of mainly foreign owned sectors, and indeed, in some of these sectors, a small group of firms. This is in keeping with the highly concentrated nature of Ireland’s economy.

\textit{Figure 9: Growth in GDP per hour worked, 2007-2017}

Source: OECD, Growth in GDP per capita, productivity, and ULC. Data for Singapore and Malta was not available in this dataset.

Recent further analysis highlights the considerable sectoral productivity difference in Ireland between the domestic and other sector (2.5 percent) and the foreign-dominated sector (10.9 percent) as measured by the percentage change in gross value added per hour 2000-2016\textsuperscript{23}.

\textsuperscript{22} Department of Finance (2018d).
3.9 Median net equivalised disposable income

Figure 10 shows the median net equivalised disposable income\(^\text{24}\) in Ireland vis-à-vis comparator economies between 2007 and 2016\(^\text{25}\). Median net equivalised disposable income increased to varying extents over the period for all of the comparator economies shown, despite the global financial crisis.

In Ireland, the median net equivalised disposable income declined by 8.8 percent between 2008 and 2014, and increased by 10.7 percent between 2014 and 2016. In 2016, the Irish median net equivalised disposable income was €18,330 in purchasing power standard (PPS) terms, which is 0.9 percent higher than 2008 levels.

Norway, Switzerland, Belgium, and Sweden were the selected comparator economies that experienced the largest growth in median net equivalised disposable income between 2007 and 2016, rising by over 30 percent in each of these economies. Norway (€28,875), Luxembourg (€27,973), and Switzerland (€27,602) had the highest median net equivalised disposable income of the comparator economies in 2016. Also, Austria and Denmark experienced year-on-year growth in median net equivalised disposable income, with overall growth of 29.8 percent and 26.5 percent respectively between 2007 and 2016.

![Figure 10: Median net equivalised disposable income, 2007-2016](image)

Source: EU-SILC. Data for Israel, New Zealand, and Singapore was not available in this dataset.

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\(^{24}\) Equivalised disposable income is the total income of a household, after tax and deductions, that is available for spending or saving, divided by the number of household members converted into equalised adults, which is weighted according to the age of household members. Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Equivalised_disposable_income

\(^{25}\) The most recent available data for most countries is 2016.
3.10 Income Inequality

Gini coefficient

Figure 11 shows the Gini coefficient for both market incomes (before taxes and transfers) and disposable incomes (after taxes and transfers) in 2015 for Ireland and the comparator economies.

In terms of market income inequality, Switzerland and Iceland had the lowest income inequality with a Gini coefficient of 0.39 each. Ireland had the highest market income inequality of all comparator economies, with a Gini coefficient of 0.55.

All of the comparator economies improve income inequality through taxes and transfers. After these transfers, Ireland has a mid-range Gini coefficient of 0.30. The Gini coefficients for disposable income of the selected small advanced open economies range from 0.25 (Iceland) to 0.37 (Lithuania). Switzerland has the same disposable income Gini coefficient as Ireland.

Ireland has a large gap between the market and disposable income Gini coefficients which shows the extent of the redistribution undertaken by the Irish social transfers and tax system. Of all the economies in this analysis, the gap between the market and disposable income Gini coefficient is largest in Ireland and Finland.

Figure 11: Gini coefficient, 2015

Source: OECD Income Distribution and Poverty. For Iceland and New Zealand, 2014 data is used.
3.11 Poverty rate

Figure 12 illustrates the poverty rate in 2015 for Ireland and comparator economies.

Ireland’s poverty rate before taxes and transfers is 41.4 percent, which is the highest of the comparator economies ahead of Luxembourg, Finland, Belgium and Lithuania.

The poverty rate after taxes and transfers ranges from 11.8 percent (Czech Republic) to 25.8 percent (Israel).

Some of the comparator economies have a large gap between the poverty rate before taxes and transfers and the rate after taxes and transfers. The largest gap is in Finland (23.9 points) and the smallest gap is in Israel (2.9 points).

Ireland’s redistributive system succeeds in reducing the poverty rate considerably. The Irish poverty rate after taxes and transfers is 18.6 percent, which is close to the middle of the range. Only Finland has a larger difference between the poverty rate before and after taxes and transfers.

Figure 12: Poverty rate, 2015

Source: OECD Income Distribution and Poverty.
4 Key structural policy indicator comparison

People

4.1 Old-age dependency ratio

Figure 13 shows the projected old-age dependency ratio for Ireland vis-à-vis comparator economies between 2016 and 2070. In all of these economies, the old-age dependency ratio is forecast to increase considerably over the longer term.

Ireland currently has a low old-age dependency ratio compared with the selected comparator economies. In 2016, Ireland had the 2nd lowest old-age dependency ratio (20.9) of the comparator economies for which data was available; i.e. there were almost 5 people of working age for everyone aged 65 and over. Luxembourg had the lowest old-age dependency ratio in 2016 (20.6).

In the future by 2050, Ireland is forecast to have an old-age dependency ratio of 45.7 (over 2 people of working age for everyone aged 65 years and over), whilst many of the selected comparator economies are forecast to have even lower ratios. By 2070, Ireland’s ratio is forecast to be 41.2 (2.4 people of working age for every person aged 65 and over), which would be the lowest old-age dependency ratio of these economies, followed by Sweden, at 43.2.

*Figure 13: Old-age dependency ratio, 2016-2070*

Source: 2018 Ageing Report, as used in Department of Finance (2018c). The Ageing Report focused primarily on EU countries, thus comparable data was not available for Singapore, New Zealand, Iceland, and Israel. UN data indicates that New Zealand and Iceland are forecast to have old age dependency ratios similar to Ireland.
4.2 Tertiary education

Figure 14 shows the share of population with tertiary education aged 30-34 for Ireland and comparator economies between 2007 and 2017. The general trend is an increasing share of population with a tertiary education in this age cohort over the period across the selected comparator economies.

Ireland has one of the highest shares of population with tertiary education aged 30-34 of the selected economies at 53.5 percent in 2017. This proportion has increased from 44.3 percent in 2007. Only Iceland and Lithuania had higher shares of population with tertiary education in 2017, at 53.7 percent and 58 percent respectively.

Figure 14: Share of population with tertiary education aged 30-34 years, 2007-2017

Source: Eurostat. Data for Singapore, Israel and New Zealand was not available in this dataset.
4.3 Net migration rate

Figure 15 shows the net migration rate of Ireland and comparator economies between 2006 and 2017; i.e. the number of immigrants less emigrants. In general, despite the crisis, net migration was positive in the selected comparator economies during this period.

Ireland’s net migration rate, however, fluctuated considerably over the period, displaying a cyclical trend. This cyclicality is more evident for Ireland than for most of the comparator economies.

Iceland’s experience was similar, albeit with a steeper decline and recovery than Ireland. Luxembourg, on the other hand, experienced strong net inward migration throughout the period.

Figure 15: Net migration rate, 2006-2017

Source: Eurostat. Data for Singapore, New Zealand, and Israel was not available in this dataset. But UN data indicates that these economies do not display a similar trend to Ireland.
Labour market

4.4 Participation rate

4.4.1 Female participation rate

Figure 16 shows the female participation rate in the labour force for Ireland and comparator economies between 2007 and 2017. In general, the female participation rate in many of the comparator economies increased gradually between 2007 and 2017.

Ireland’s female participation rate was the same in 2017 as in 2007, at 66.4 percent. Only Luxembourg, Belgium, and Malta had female participation rates lower than Ireland in 2017. Iceland had the highest female participation rate at 85.7 percent in 2017 and Sweden had the second highest at 80.6 percent. The economies that experienced the largest growth in the female participation rate in this time period were Malta (+18.2 points), Lithuania (+9.7 points), Latvia (+6.5 points), and Estonia (+6.2 points). Of the selected comparator economies, Luxembourg experienced the largest growth in the female participation rate, of 7.3 points.

Figure 16: Female participation rate, 2007-2017

Source: OECD, LFS by sex and age. Data for Singapore was not available in this dataset.

### 4.4.2 Male participation rate

Figure 17 shows the male labour participation rate for Ireland and its comparator economies between 2007 and 2016. In most of the comparator economies, the male labour participation rate declined over the period.

Ireland experienced the largest decrease in the male participation rate, at 5.9 percentage points. This decline primarily occurred between 2008 and 2012 and has not yet recovered. Of the selected comparator economies, Denmark experienced the second largest decline in male participation over the period (-3.1 percentage points), though it has been on an upward trend since 2013. In 2016, Ireland and Denmark had the same male participation rate (67.8 percent). In the Netherlands and Norway male participation in the labour force also declined by 2.6 percentage points over the period. Of the other comparator economies, Slovenia experienced a decline of 5.1 percentage points over the period.

Iceland had the highest male participation rate over the entire period (87.4 percent in 2016). While participation had declined by 4.4 percentage points during 2007-2012, subsequently by 2016 it had recovered by 4.3 percentage points.

*Figure 17: Male participation rate, 2007-2016*

Source: OECD, LFS by sex and age. Data for Singapore was not available in this dataset.
4.5 Early childcare and education

Figure 18 below shows the percentage of 0-2 year olds enrolled in formal Early Childhood Care and Education (ECEC) services in Ireland and selected comparator economies in 2014\(^\text{27}\).

The percentage of children enrolled in formal ECEC services ranged from 19.2 percent in Austria to 65.2 percent in Denmark for the selected comparator economies. In Ireland, 35.0 percent of children below two years of age were in attendance at an ECEC service in 2014. This is just above half the level in Denmark. Denmark and Iceland have the highest percentage of children of 0 – 2 years of age enrolled in a formal ECEC service (65.2 percent and 59.7 percent respectively).

Figure 18: Children (aged 0-2 years) participating in formal ECEC services, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of 0-2 Year Olds in ECEC Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>19.2%</td>
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<tr>
<td>Denmark</td>
<td>65.2%</td>
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<tr>
<td>Ireland</td>
<td>35.0%</td>
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</table>

Source: OECD, Children Well-being

Figure 19 shows the percentage of children aged 3 to 5 years enrolled in pre-primary education or primary school. The percentages range from 48.1 percent in Switzerland to 97.9 percent in Belgium, for the selected comparator economies. In Ireland, 79.3 percent of children aged 3 to 5 were enrolled in either pre-primary education or primary school in 2014, which is lower than most selected comparator economies.

Figure 19: Children (aged 3-5 years) participating in pre-primary education or primary school, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of 3-5 Year Olds in Pre-Primary Education or Primary School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>48.1%</td>
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<tr>
<td>Belgium</td>
<td>97.9%</td>
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<tr>
<td>Ireland</td>
<td>79.3%</td>
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</table>

Source: OECD, Children Well-being

4.6 Sectoral composition of employment


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\(^{27}\) As 2014 is the most recent data available from this dataset, Ireland’s performance on these indicators may have improved. Further analysis on Irish childcare schemes is available in Lenihan, Kane & O’Callaghan (2018).
Ireland is a clear outlier in sectoral composition of employment in the construction sector (Figure 23). In 2007, construction accounted for 11.3 percent of total employment in Ireland, which is the highest share of the selected comparator economies. Ireland also experienced the largest change in the construction sector’s share of total employment, falling 7.3 percentage points between 2007 and 2013.

Ireland has a relatively high share of employment in the tourism sector compared to some of the selected comparator economies. In 2015 the tourism sector accounted for 10.4 percent of total employment in Ireland. Iceland and Malta had tourism sectors with larger shares than this, at 12.8 percent and 14.7 percent of total employment respectively. On the other hand, the tourism sector accounted for 4.3 percent of total employment in Denmark and 4.1 percent in Switzerland. Ireland also had a relatively high share of employment in agriculture (around 5 percent) compared to many of the comparator economies.

Source: OECD labour market statistics, authors’ own calculations. Data for Singapore and Malta is not available in this dataset. Tourism (Figure 25) as a service is also included in (Figure 24). Tourism OECD data is only available from 2011. Figure 20 excludes construction.

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28 Due to source data constraints, the data in respect to tourism is limited in terms of the countries covered and period covered.
Infrastructure

4.7 Real house prices

Figure 26 shows real house prices in Ireland and each of the comparator economies between 2007 and 2016. Each line shows the relative change in each economy’s house prices over the period.

Real house prices fell by 51.3 percent in Ireland between 2007 and 2013. This was the largest decline in real house prices of the selected comparator economies during this period, with Estonia, Latvia and Lithuania also experiencing declines of over 40 percent between 2008 and 2013.

Real house prices in Ireland have risen by 35.9 percent between 2013 and 2016, the highest real house price growth of the selected comparator economies, followed by New Zealand and Sweden. Most of the selected comparator economies experienced real house price growth since 2012/3, with the exception of Finland.

Figure 26: Real house price growth, 2007-2016

Source: OECD: Analytical house prices indicators. Data for Singapore and Malta are not available in this dataset.
Other structural features

4.8 Foreign Direct Investment (FDI) stocks

Figure 27 shows inward and outward FDI stocks as a percentage of GDP for Ireland and comparator economies for 2016. Ireland, the Netherlands, and Luxembourg are outliers, indicating that the economic models of these economies differ from many other small advanced open economies. Hence, FDI is more important for the Irish economy than for most other small advanced open economies.\(^{29}\)

In 2016, Ireland’s inward FDI stocks were worth 276.5 percent of GDP and outward stocks were 276.2 percent of GDP. Only Luxembourg reported higher FDI stocks, with inward FDI stocks valued at 355.9 percent of GDP and outward FDI stocks valued at 386.5 percent of GDP. In contrast, Denmark and Finland had much lower FDI stocks.

Figure 27: FDI stocks (% of GDP), 2016

Source: OECD, FDI main aggregates

\(^{29}\) Irish FDI stocks would appear even larger in terms of GNI*, than in terms of GDP.
4.9 Institutions

There has been an increased focus in Ireland on institutional policy reforms in the post crisis era to highlight, to mitigate, to monitor and to minimise the impact of future crises. The strengthening of institutions and their processes is important as corporate memory inevitably fades in the longer term.

An international comparison of national risk management in a number of countries - with some characteristics not dissimilar to those of Ireland – provided insights. Recent institutional reforms in Ireland have addressed a number of gaps. For example, the establishment of the independent Irish Fiscal Advisory Council as part of a wider agenda of reform of Ireland’s budgetary architecture; the National Risk Assessment exercise to further raise risk consciousness; and the establishment of the Parliamentary Budgetary Office to address the OECD review finding that ‘the level of budget engagement of the House of the Oireachtas is the lowest observed in any OECD country’. The report also noted that several countries (UK, New Zealand, Finland, and the Netherlands) have moved towards more comprehensive government fiscal presentations, including a balance sheet approach capturing movements in assets and liabilities (including contingent liabilities and accrued pension liabilities).

Continual strengthening of institutional risk management can enhance economic resilience by enabling policy makers to advise on potential mitigation measures.

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30 PublicPolicy.ie (2016).
5 Findings

5.1 Comparator small advanced open economies for Irish benchmarking

What constitutes a small open economy varies. Depending on the criteria chosen – i.e. how one defines size or openness – the resulting group of comparator economies can differ. This paper filtered small advanced open economies according to population size, GDP per capita, and export-GDP ratio to distil a broad list of small advanced open economies as comparator economies for Ireland.

5.2 Greater magnitude of impact and volatility from the recent crisis

The Irish economy displayed a greater magnitude of impact and volatility from the recent economic crisis than comparator economies, as shown in the GDP growth, the general government balance, general government gross debt, the unemployment rate, and the employment rate.

5.3 Redistribution is successful at addressing the comparatively large market income inequality

The redistributive social welfare and tax system in Ireland corrects, to a larger degree than in most selected comparator economies, the extent of the market income inequality and the poverty rate. The market income inequality and poverty rate (before taxes and transfers) in Ireland are the highest of the comparator economies, but after redistribution, both are reduced considerably.

5.4 Growth in median net equivalised disposable income comparatively low

Median net equivalised disposable income in Ireland decreased by 8.8 percent between 2008 and 2014, though it increased by 10.7 percent between 2014 and 2016. Norway, Switzerland, Belgium, and Sweden experienced the largest growth in median net equivalised disposable income of over 30 percent between 2007 and 2016, among the selected comparator economies.

5.5 Strong human capital

The Irish population is relatively young. By 2070, the old age dependency ratio will remain relatively low, despite considerable ageing of the Irish population. Ireland currently has approximately five people of working age for every person aged 65 years or more; there is forecast to be just over 2 in 2050, before increasing to 2.4 people of working age in 2070. Ireland has one of the highest shares of people with a tertiary education aged 30-34. Also, net migration has been more cyclical in Ireland during the period than in most selected comparator economies.
5.6 Sectoral employment

The Irish construction sector’s share of employment was volatile during the period – disproportionately high in 2007 and the lowest during 2010-2014, relative to the selected comparator economies. This volatility is also reflected in the real house prices in Ireland, with a fall of 51.3 percent during 2007-2013 and a rise of 35.9 percent by 2016. The tourism and agricultural sectors in Ireland have a relatively high share of employment.

5.7 Irish labour force has a low employment rate and low participation rates

The employment rate in Ireland had declined to 59.9 percent during 2007-2012, which was the lowest of the comparator economies. Since then, the employment rate has risen by 7.8 percentage points, but it is still lower than most comparator economies.

The female participation rate in Ireland is one of the lowest at 66.4 percent in 2017, and it has not increased during 2007-2017 as occurred in many of the comparator economies. Furthermore, Ireland experienced the largest decrease in the male participation rate of all selected comparator economies, at 5.9 percentage points, which occurred mostly during 2008-2012 and has not yet recovered.

5.8 FDI stocks are relatively large for Ireland

Ireland and Luxembourg are outliers in terms of the relative size of FDI stocks in the economy, indicating the importance of foreign direct investment.

5.9 Childcare

The proportion of Irish children enrolled in early educational services was low relative to comparator economies in 2014. Children below two years of age in Ireland attending a formal ECEC service was 35.0 percent, just above half the level in Denmark. Children aged 3 to 5 years in Ireland enrolled in either pre-primary education or primary school, was 79.3 percent in 2014, which is lower than most selected comparator economies.
Appendix 1  Broad similarities of Ireland and other comparator economies’ performance

Table 3: This table illustrates the authors' interpretation of the broad similarities of other small advanced open economies performance relative to Ireland by indicator considering where relevant trends over time and the relative position in the most recent data in the paper (where comparable data is available in the dataset).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Norway</th>
<th>Denmark</th>
<th>Sweden</th>
<th>Finland</th>
<th>Iceland</th>
<th>Latvia</th>
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Source: Authors’ interpretation of the broad similarities of the indicators in the paper.
Bibliography


Quality assurance process

To ensure accuracy and methodological rigour, the authors engaged in the following quality assurance process.

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<td>□ Peer review (IGEES network, seminars, conferences etc.)</td>
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| Other (relevant details) |