QUARTERLY ECONOMIC COMMENTARY

WINTER 2017

KIERAN MCQUINN, CONOR O'TOOLE, PHILIP ECONOMIDES AND TERESA MONTEIRO

EVIDENCE FOR POLICY

ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE
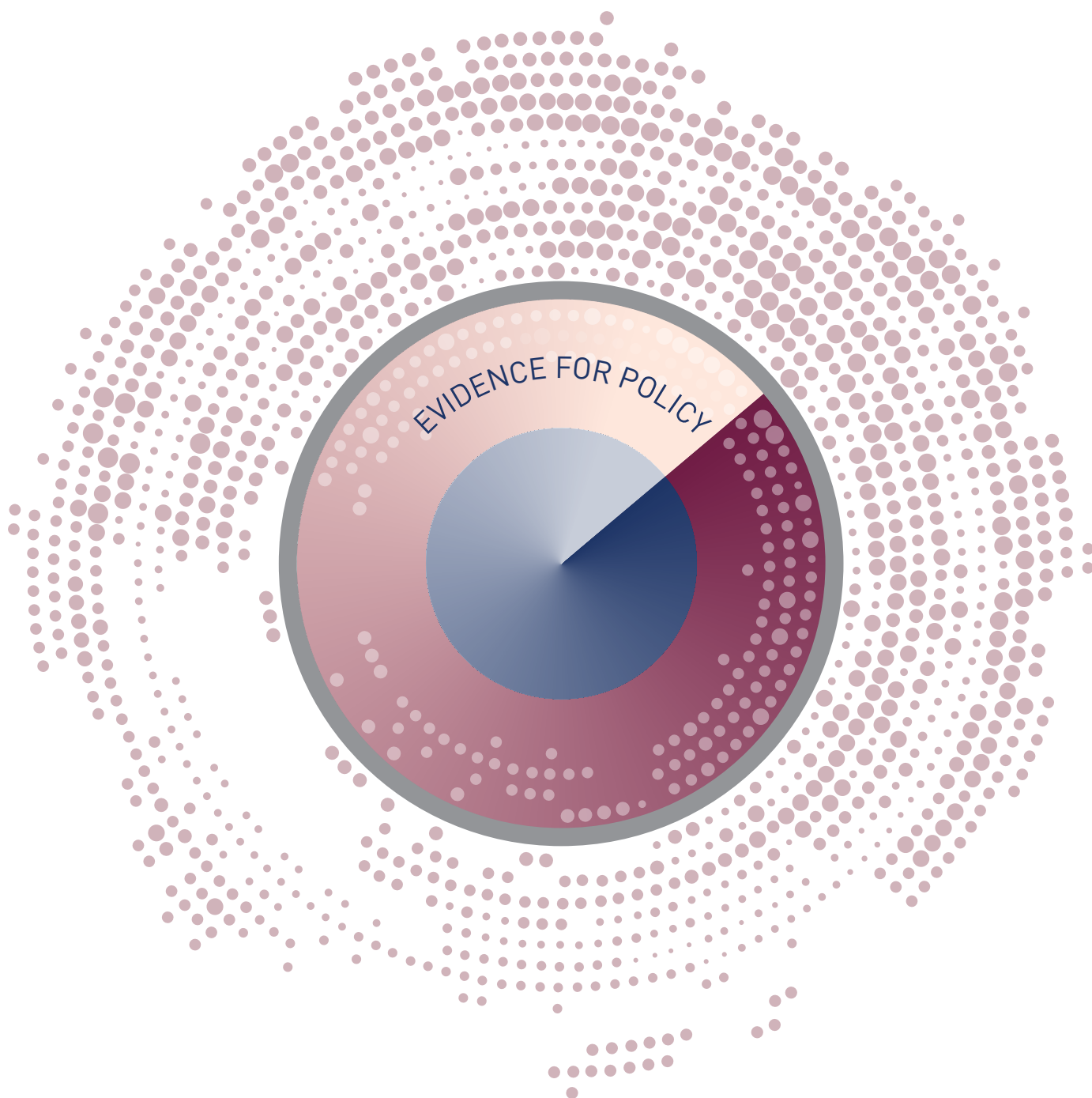
QUARTERLY ECONOMIC COMMENTARY

Kieran McQuinn
Conor O'Toole
Philip Economides
Teresa Monteiro

Winter 2017

The forecasts in this *Commentary* are based on data available by 27 November 2017

Draft completed on 7 December 2017

A subscription to the *Quarterly Economic Commentary* costs €327 per year, including VAT and postage.

ABOUT THE ESRI

The Economic and Social Research Institute is an independent research institute working towards a vision of 'Informed policy for a better Ireland'. The ESRI seeks to support sustainable economic growth and social progress in Ireland by providing a robust knowledge base capable of providing effective solutions to public policy challenges.

The Institute was founded in 1960 by a group of senior civil servants, led by Dr T.K. Whitaker, who identified the need for independent and in-depth research to support the policymaking process in Ireland. Since then, the Institute has remained committed to independent research and its work is free of any expressed ideology or political position. The Institute publishes all research reaching the appropriate academic standard, irrespective of its findings or who funds the research.

The ESRI brings together leading experts from a variety of disciplines who work together to break new ground across a number of research initiatives. The expertise of its researchers is recognised in public life and researchers are represented on the boards and advisory committees of several national and international organisations.

ESRI researchers uphold the highest academic standards. The quality of the Institute's research output is guaranteed by a rigorous peer review process. Research is published only when it meets the required standards and practices. Research quality has also been assessed as part of two peer reviews of the Institute, in 2010 and 2016.

ESRI research findings are disseminated widely in books, journal articles and reports. Reports published by the ESRI are available to download, free of charge, from its website. ESRI staff members communicate research findings at regular conferences and seminars, which provide a platform for representatives from government, civil society and academia to discuss key findings from recently published studies and ongoing research.

The ESRI is a company limited by guarantee, answerable to its members and governed by a Council, comprising a minimum of 11 members and a maximum of 14 members, who represent a cross-section of ESRI members: academia, civil service, state agencies, businesses and civil society.

THE AUTHORS

The *Commentary* is edited by Kieran McQuinn and Conor O'Toole. Kieran McQuinn is Research Professor and Conor O'Toole is a Senior Research Officer at the Economic and Social Research Institute (ESRI). Philip Economides and Teresa Monteiro are Research Assistants at the ESRI.

Special Articles are published in the *QEC* in order to foster high-quality debate on various aspects of the Irish economy and Irish economic policy. They are subject to refereeing prior to publication.

TABLE OF CONTENTS

CHAPTERS

SPECIAL ARTICLES

SUMMARY TABLE

	2014	2015	2016	2017	2018
Output (Real Annual Growth %)					
Private Consumer Expenditure	2.0	4.5	3.3	2.8	2.9
Public Net Current Expenditure	4.8	1.8	5.3	3.5	3.6
Investment	18.1	27.9	61.2	15.9	11.9
Exports	14.4	38.4	4.6	3.1	4.4
Imports	14.9	26.0	16.4	4.7	6.8
Gross Domestic Product (GDP)	8.3	25.6	5.1	5.0	4.2
Gross National Product (GNP)	9.0	16.4	9.6	5.4	4.2
Prices (Annual Growth %)					
Consumer Price Index (CPI)	0.2	-0.3	0.0	0.6	1.4
Growth in Average Hourly Earnings	1.6	2.2	2.5	2.8	3.0
Labour Market					
Employment Levels (ILO basis ('000))	1,914	1,964	2,020	2,072	2,118
Unemployment Levels (ILO basis ('000))	243	204	172	136	121
Unemployment Rate (as % of Labour Force)	11.3	9.4	7.9	6.2	5.4
Public Finance					
General Government Balance (€bn)	-7.2	-5.0	-1.8	-1.0	0.6
General Government Balance (% of GDP)	-3.7	-1.9	-0.7	-0.3	0.2
General Government Debt, % of GDP	105.2	78.7	75.4	66.2	62.5
External Trade					
Balance of Payments Current Account (€bn)	3.2	31.6	9.2	11.5	5.2
Current Account (% of GNP)	1.9	15.4	4.1	4.6	2.0

Note: Detailed forecast tables are contained in an Appendix to this *Commentary*.

NATIONAL ACCOUNTS 2016

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2015	2016	Change in 2016		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	92.7	96.6	4.2	1.0	3.3
Public Net Current Expenditure	27.0	28.4	5.2	-0.1	5.3
Gross Fixed Capital Formation	53.2	87.7	64.9	2.3	61.2
Exports of Goods and Services	326.6	335.0	2.6	-1.9	4.6
Physical Changes in Stocks	2.4	2.4			
Final Demand	501.8	550.1	9.6	-0.7	10.4
less:					
Imports of Goods and Services	239.9	274.4	14.4	-1.7	16.4
Statistical Discrepancy	0.1	-0.1			
GDP at Market Prices	262.0	275.6	5.2	0.2	5.0
Net Factor Payments	-56.0	-48.8			
GNP at Market Prices	206.0	226.7	10.1	0.4	9.6

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2015	2016	Change in 2016	
	€ bn	€ bn	€ bn	%
Agriculture	3.2	3.2	0.1	1.7
Non-Agriculture: Wages, etc.	76.1	80.3	4.1	5.4
Other	102.3	107.4	5.1	5.0
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	-0.1	0.1		
Net Domestic Product	181.9	191.4	9.5	5.2
Net Factor Payments	-56.0	-48.8	7.2	-12.9
National Income	125.8	142.6	16.7	13.3
Depreciation	61.6	64.5	2.9	4.7
GNP at Factor Cost	187.4	207.0	19.6	10.5
Taxes less Subsidies	18.6	19.7	1.1	6.1
GNP at Market Prices	206.0	226.7	20.8	10.1

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2015	2016	Change in 2016
	€ bn	€ bn	€ bn
X – M	86.7	60.6	-26.1
F	-51.9	-47.6	4.3
Net Transfers	-3.1	-3.8	-0.7
Balance on Current Account	31.6	9.2	-22.5
as % of GNP	15.4	4.1	-9.9

NATIONAL ACCOUNTS 2017

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2016	2017	Change in 2017		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	96.6	100.3	3.8	1.0	2.8
Public Net Current Expenditure	28.4	28.8	1.6	-1.8	3.5
Gross Fixed Capital Formation	87.7	104.8	19.6	3.1	15.9
Exports of Goods and Services	335.0	364.5	8.8	5.5	3.1
Physical Changes in Stocks	2.4	2.0			
Final Demand	550.1	600.4	9.2	4.1	4.8
less:					
Imports of Goods and Services	274.4	297.7	8.5	3.6	4.7
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	275.6	302.6	9.8	4.6	5.0
Net Factor Payments	-48.8	-52.0			
GNP at Market Prices	226.7	250.7	10.6	4.9	5.4

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2016	2017	Change in 2017	
	€ bn	€ bn	€ bn	%
Agriculture	3.2	3.3	0.1	2.0
Non-Agriculture: Wages, etc.	80.3	84.9	4.6	5.8
Other	107.4	124.1	16.7	15.5
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	0.1	0.1	0.0	0.0
Net Domestic Product	191.4	212.8	21.4	11.2
Net Factor Payments	-48.8	-52.0	-3.1	6.4
National Income	142.6	160.8	18.2	12.8
Depreciation	64.5	69.3	4.8	7.4
GNP at Factor Cost	207.0	230.1	23.0	11.1
Taxes less Subsidies	19.7	20.6	0.9	4.7
GNP at Market Prices	226.7	250.7	23.9	10.6

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2016	2017	Change in 2017
	€ bn	€ bn	€ bn
X – M	60.6	66.2	5.6
F	-47.6	-51.0	-3.3
Net Transfers	-3.8	-3.8	0.0
Balance on Current Account	9.2	11.5	2.3
as % of GNP	4.1	4.6	0.9

NATIONAL ACCOUNTS 2018

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2017	2018	Change in 2018		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	100.3	104.3	3.9	1.0	2.9
Public Net Current Expenditure	28.8	30.1	4.4	0.7	3.6
Gross Fixed Capital Formation	104.8	120.7	15.1	2.9	11.9
Exports of Goods and Services	364.5	391.9	7.5	3.0	4.4
Physical Changes in Stocks	2.0	3.0			
Final Demand	**600.4**	**649.9**	**8.2**	**2.6**	**5.5**
less:					
Imports of Goods and Services	297.7	329.0	10.5	3.5	6.8
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	**302.6**	**320.8**	**6.0**	**1.7**	**4.2**
Net Factor Payments	-52.0	-54.2			
GNP at Market Prices	**250.7**	**266.6**	**6.4**	**2.1**	**4.2**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2017	2018	Change in 2018	
	€ bn	€ bn	€ bn	%
Agriculture	3.3	3.4	0.1	2.5
Non-Agriculture: Wages, etc.	84.9	89.5	4.7	5.5
Other	124.1	134.6	10.5	8.5
Adjustments: Stock Appreciation	0.4	0.4		
Statistical Discrepancy	0.1	0.0	-0.1	
Net Domestic Product	**212.8**	**227.9**	**15.1**	**7.1**
Net Factor Payments	-52.0	-54.2	-2.2	4.3
National Income	**160.8**	**173.7**	**12.9**	**8.0**
Depreciation	69.3	71.6	2.3	3.5
GNP at Factor Cost	**230.1**	**245.3**	**15.2**	**6.6**
Taxes less Subsidies	20.6	21.3	0.7	3.3
GNP at Market Prices	**250.7**	**266.6**	**15.9**	**6.4**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2017	2018	Change in 2018
	€ bn	€ bn	€ bn
X – M	66.2	62.2	-4.0
F	-51.0	-53.2	-2.2
Net Transfers	-3.8	-3.8	0.0
Balance on Current Account	**11.5**	**5.2**	**-6.2**
as % of GNP	4.6	2.0	-2.3

The Irish Economy – Forecast Overview

The Irish economy looks set to experience another year of strong recovery in 2017. The performance of key indicators – taxation revenues and labour market variables – underpins our assessment that the domestic economy will experience output growth of approximately 5 per cent for the current year. We expect the economy to also grow strongly in 2018, at a rate of 4.2 per cent.

To put this performance in context, the European Union, which is deemed to be currently experiencing a growth recovery, is expected to grow by less than 1.9 per cent for the same period. However, it is worth pointing out that much of the Irish growth is due to domestic factors, with investment and consumption contributing strongly. Both Irish exports and imports look set to register significantly more modest levels of activity in 2017. While this may be down to certain well acknowledged difficulties associated with the National Accounts, it is worth noting that a sustainable growth path for a small open economy such as Ireland's requires both domestic and external sources of growth over the longer term.

One growing risk for the domestic outlook is the performance of the UK economy. The recent revision downwards of the UK forecast by the Office for Budget Responsibility (OBR) illustrates the precarious nature of the UK economy especially given the uncertainty of the Brexit outcome. While Ireland's trade has diversified in recent times, the performance of our closest neighbour is still important in generating external sources of growth for the domestic economy.

The overall size of the recent budgetary package, which was framed against a relatively modest amount of fiscal space, was a prudent outcome. In a Special Article to the *Commentary*, Callan et al. (2017) indicate that overall, the impact of the budget policy was to reduce incomes somewhat *below* the levels which would have obtained if tax and welfare parameters had been indexed in line with forecast wage inflation.

While the Irish banking sector continues to recover from the post-2008 financial sector downturn, the *Commentary* highlights a number of key areas where difficulties remain with financing conditions. In particular, differences are still apparent between comparable European and domestic mortgage and consumer interest rates. This may be a contributing factor to the declining investment rates observed in certain key indigenous sectors of the domestic economy. Low

investment rates could also be driven by the ongoing uncertainties related to Brexit.

The pace of growth in 2017 and the expected performance of the economy in 2018 mean that crucial policy challenges are likely to arise in the coming years if the present strong recovery is set to mature into sustainable performance over the medium term. In that regard two other Special Articles to the *Commentary* raise general issues of sustainability. McQuinn (2017), in examining the residential property market, argues that, given the strong expected increases in house prices in the economy, the relevant authorities should desist from implementing policies which further stimulate housing demand. This applies both in the context of fiscal policy increasing affordability levels in the economy and macroprudential policy potentially enabling increased rates of credit provision. In another article, Redmond and Whelan (2017) examine the Irish labour market from a micro-level perspective. They identify the potential to better use the skills of existing employees as the economy continues to improve and the labour market tightens. However, Redmond and Whelan (2017) also show that it is unlikely that there are enough people amongst those currently unemployed to meet future Irish labour demand. Therefore, if capacity constraints are not to become binding in the Irish market, immigration will be increasingly important.

The International Economy

Though still subdued compared to pre-crisis levels, world real GDP growth forecasts remain positive through the latter half of the year. This growth is well distributed, with the OECD reporting balanced trends between advanced and developing economies.[1] According to consensus forecasts, estimates of growth for 2017 indicate that real GDP will reach an annual rate of 3.6 per cent, reflecting the fastest pace of global growth in two years and a rate just below the average global growth rate of 3.8 between 1985 and 2007, as estimated by the IMF.

Amongst developed economies, it appears that the recovery is becoming more ingrained in the Eurozone with declining unemployment rates and improving domestic demand all contributing to an improved outlook. In unison with these promising developments, the ECB has recently announced plans to taper the quantitative easing programme, cutting monthly levels of asset purchases in half to €30 billion, starting next year. Given the ECB's pledge to keep borrowing costs unchanged until well after the end of these asset purchases, it is likely the policy rate will remain at its current rate until early 2019. McQuinn and Whelan (2017), in an updated analysis of earlier work, highlight the cyclical nature of the EU recovery. They contend that underlying vulnerabilities persist across Europe and, accordingly, project productivity growth in the Euro Area of below 1 per cent per year over the next decade and weaker in later decades. The results of McQuinn and Whelan (2017) are summarised in the following box.

BOX 1   EUROPE'S LONG-TERM GROWTH PROSPECTS: AN UPDATED ASSESSMENT

The recent adjustment to the asset purchase programme by the ECB reflects the general growing confidence that the European economy has been steadily improving over the last number of years. Growth rates for both the EU and Euro Area, which had been negative as recently as 2012 and 2013 respectively, have over the past three years averaged 1.7 per cent per annum. However in a number of updates of their previous analysis, McQuinn and Whelan (2016; 2017) find little evidence to support the view that Europe is on a new growth trajectory. Rather, they find that the recent recovery is more of a cyclical development reflecting a decline in the relatively high unemployment rates, which had persisted since the international financial downturn, while long-term downward trends in productivity have not reversed.

In their initial study, McQuinn and Whelan (2008) focused on trends in European growth

---

[1]   OECD, Interim Economic Outlook release of 20th September 2017: www.oecd.org/eco/outlook/economic-outlook.

rates up to mid-2006. While the period of growth in Europe prior to the global crisis of 2008 is sometimes referred to as 'the boom', McQuinn and Whelan (2008) noted that long-run trends in both productivity and per capita hours worked were deteriorating to the point where potential output growth in the Euro Area was at a historical low point and, apparently, on a negative trend. In particular, after a long period of catching up with US levels of labour productivity, Euro Area productivity growth had, from the mid-1990s onwards, fallen significantly behind.

McQuinn and Whelan (2016, 2017) update their calculations from their 2008 paper and provide projections for growth in the Euro Area out to 2060 based on a recovery scenario over the rest of this decade and long-term demographic trends. They also describe the potential impact of structural reforms relative to this baseline scenario. In this box, we summarise the main elements of their updated analysis.

With a long-term projection of TFP growth of 0.2 per cent, a gradual decline in the work-age population and a static average workweek, McQuinn and Whelan (2017) project a 'baseline' average real GDP growth rate in the Euro Area of 0.6 per cent over the next decade even if the unemployment rate and investment share of GDP return to their pre-crisis levels by 2020.

The findings are sobering for those expecting economic growth to deal with the Euro Area's debt problems in the coming decades. Among the results McQuinn and Whelan (2016; 2017) report are the following:

- Total factor productivity (TFP) growth in the twelve-country Euro Area group has declined in each decade since the 1970s. Over the years 2000-2016, a period that includes multiple slow-downs and expansions, TFP growth has averaged only 0.2 per cent per year.

- The slump in investment due to weak growth is now having significant negative supply-side effects. We estimate that capital stock growth, which averaged 1.9 per cent per year over the past two decades, is now falling below 1 per cent per year. Using an elasticity of output with respect to capital of one-third, this factor alone is currently reducing the supply-side growth potential of the Euro Area economy by about 0.5 percentage points per year.

- While Europe's demographic ageing pattern is sometimes presented as a longer-term issue that will cause problems relating to pension systems in future decades, the ageing process is actually affecting Europe's growth potential right now. The work-age population of the Euro Area has peaked and Eurostat projections anticipate that the decline in this age group will accelerate in the coming decades. Even assuming a return to pre-crisis average unemployment rates and ruling out future declines in the average workweek of employees, McQuinn and Whelan (2016; 2017) project that, if current patterns of labour market participation persist, total hours worked will decline significantly from the start of the next decade.

With a long-term projection of TFP growth of 0.2 per cent, a gradual decline in the work-age population and a static average workweek, McQuinn and Whelan (2017) project a

'baseline' average real GDP growth rate in the Euro Area of 0.6 per cent over the next decade even if the unemployment rate and investment share of GDP return to their pre-crisis levels by 2020.

Output is measured using the following Cobb-Douglas production function

$$Y_t = A_t K_t^{\alpha} L_t^{1-\alpha} \ (1)$$

where Y_t is real GDP, K_t is capital input, L_t is labour input (defined in this paper as total hours worked), and A_t is total factor productivity. Output growth can then be written as

$$\frac{\dot{Y}_t}{Y_t} = \frac{\dot{A}_t}{A_t} + \alpha \frac{\dot{K}_t}{K_t} + (1 - \alpha) \frac{\dot{L}_t}{L_t} \ (2)$$

Table A presents results for the Euro Area and the US of the growth accounting exercise which allocates output growth according to the three components in Equation (2). With data on output, capital, and labour growth to hand and a value for α, this equation can be used to calculate TFP growth.

TABLE A   DECOMPOSITION OF EURO AREA AND US OUTPUT GROWTH RATES (%)

Period	Euro Area				United States			
	Y	A	K	L	Y	A	K	L
1970-1976	3.6	2.7	1.5	-0.6	3.1	0.9	1.2	1
1977-1986	2.1	1.6	0.8	-0.4	3.1	0.7	1.2	1.2
1987-1996	2.3	1.5	0.8	0	2.9	0.9	1.1	0.9
2007-2016	0.3	0.1	0.5	-0.2	1.3	0.4	0.7	0.2
2000-2016	1	0.2	0.6	0.2	1.8	0.5	1	0.3
2010-2016	0.9	0.4	0.3	0.2	2	0.4	0.6	1
2014-2016	1.9	0.6	0.3	1	2.1	0.3	0.7	1.1
2014-2016 (excl Irl)	1.6	0.3	0.3	1	2.1	0.3	0.7	1.1

Sources: McQuinn and Whelan (2017).

- While there have been regular cyclical fluctuations, GDP growth in the Euro Area appears to have been on a downward trend since the 1970s. During the 1970s, GDP growth averaged 3.7 per cent per year. During the 1980s this fell to 2.2 per cent. In the 1990s, the average growth rate was 2.1 per cent and the period from 2000 onwards has seen an average growth rate of only 1.0 per cent.

- The growth rate of total hours worked in the Euro Area has shown no clear trend over the period since 1970. Over the period 2000-2016, the growth rate of total hours worked in the Euro Area has been effectively flat.

- McQuinn and Whelan (2016; 2017) estimate capital stock growth in the Euro Area was over 4 per cent per year in the early 1970s but then fluctuated between 2 and 3

per cent between the late 1970s and 2008.[2] Recent years, however, have seen a significant decline in the investment share of GDP and they estimate that the Euro Area capital stock is now growing at an annual rate below 1 per cent.

- The rate of TFP growth has also declined gradually over time. Table A provides estimates for each of the ten-year intervals preceding 2007. TFP growth was running at 2.7 per cent in the first half of the 1970s, fell to 1.6 per cent over 1977-1986, to 1.5 per cent over 1987-1996 and to 0.7 per cent over 1997-2006. The period from 2007-2016 has seen TFP increase only at an average rate of 0.1 per cent per year.

- The recent return to growth in the Euro Area does not signal an improved TFP performance. While the average rate of TFP growth over the 2014 to 2016 period increased to 0.6 per cent, half of this increase is accounted for by the huge increase in Irish GDP in 2015, which reflects issues related to multinational corporation activity that had effectively nothing to do with the real economy of the Euro Area. Excluding Ireland, TFP growth accounted for only 0.3 per cent of the 1.6 per cent average growth rate of this period. The largest contributor to growth, accounting for 1.0 per cent, was increased labour input, mainly reflecting the decline in the unemployment rate.

References:

McQuinn K. and K. Whelan (2017). 'Europe's long-term growth prospects: With and without structural reforms', chapter in *Structural Reforms and European Integration*, editors P. de Grauwe, N. Campos and Y. Ji.

McQuinn K. and K. Whelan (2016). 'The Prospects for Future Economic Growth in the Euro Area, Intereconomics', *Review of European Economic Policy*, Volume 51, November/December, Number 6, pp.305-311.

McQuinn K. and K. Whelan (2008). 'Prospects for growth in the Euro Area', *CESifo Economic Studies*, Vol. 54(4), pp.642-680.

This box was prepared by Kieran McQuinn and Karl Whelan (UCD).

Key US economic indicators such as employment growth, consumer sentiment and trade expansion all point to robust economic growth in 2017. Elsewhere, the decision by the Bank of Japan to keep monetary policy steady during a period where its peers in North America and Europe have begun winding down stimulus measures suggests the economy there continues to underperform. As long as Japan's recovery remains moderate, monetary policy will likely remain stable until the country's 2019/2020 goal of 2 per cent inflation is met. The recent fiscal stimulus by the Japanese authorities will contribute to modest growth in 2017, but a labour market approaching capacity threatens to slow down the recovery.

---

[2] The observations from 1980 onwards are perhaps more reliable given the initial stock for 1970 is an estimate.

Despite ongoing concerns as to the sustainability of its underlying economic performance, the Chinese economy registered strong year-on-year growth of 6.8 per cent for the third quarter of 2017. Current trends would suggest it is likely the economy will meet the government's GDP target of 6.5 per cent growth for the year. Recent attempts by the Chinese authorities to tackle pollution do indicate a certain intention to address structural issues in the Chinese economy though there are still key concerns regarding the sustainability of state-owned enterprises and the extent of credit provision in the economy. More generally, other developing countries have continued benefiting from improved global demand and greater stability in financial markets. Key risks to developing economies include the persistent volatility in commodity prices as well as the possibility of capital flight risk stemming from the increasingly healthy macroeconomic conditions central banks are observing in developed nations. Commodity price volatility introduces elements of underinvestment and currency swings in the developing world which result in weaker growth rates and a slower more fractured integration into global markets.[3] As core economies continue to increase their policy rates and taper off from quantitative easing however, there is a significant possibility this could result in a significant reduction in capital flows towards emerging economies (Agosin and Huaita, 2011; Forbes and Warnock, 2012).[4]

Figure 1 shows the forecasts for GDP growth by some of the major institutions in the respective economies. The outlook overall continues to remain positive over the next two years, with the majority of experts adding upward revisions to forecasts for the Euro Area. The wide bands around the UK forecast for 2017 and 2018 have extended slightly however, indicating increased uncertainty regarding the future prospects of the UK economy.

---

[3] Jacks, D., K. O'Rourke and J. Williamson (2011). 'Commodity Price Volatility and World Market Integration since 1700', *The Review of Economics and Statistics*, August 2011, Vol. 93(3), pp. 800-813.

[4] Agosin, M. and F. Huaita (2011). 'Capital flows to emerging economies: Minsky in the tropics', *Cambridge Journal of Economics*, Vol. 35, pp. 663-683.
   Forbes, K. and F. Warnock (2012). 'Capital flow waves: Surges, stops, flight, and retrenchment', *Journal of International Economics*, Vol. 88, pp. 235-251.

FIGURE 1   REAL GDP GROWTH (% CHANGE, YEAR-ON-YEAR)
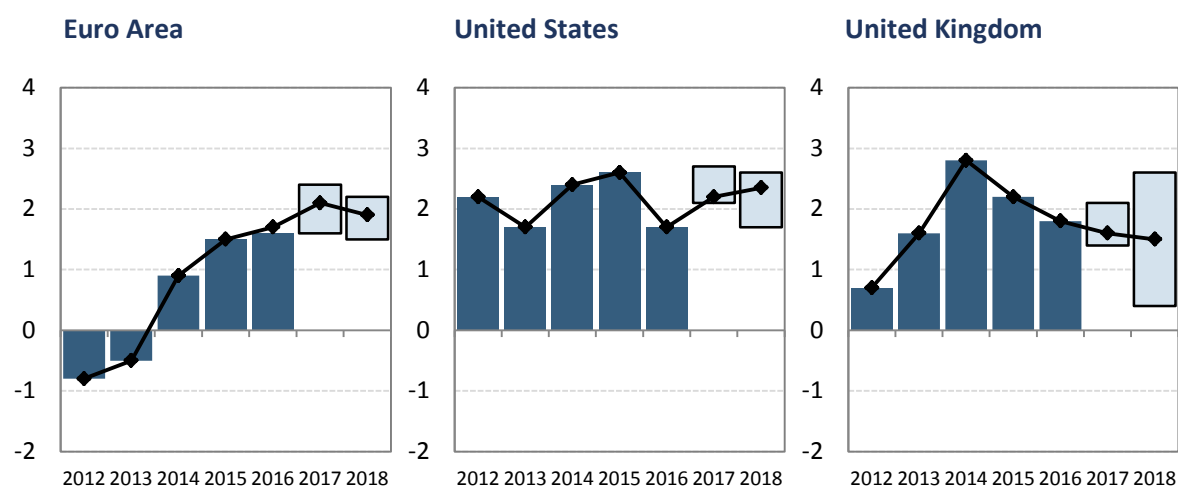
*Sources*:   FocusEconomics, IMF, OECD, HM Treasury and Federal Reserve.

Given the ongoing uncertainty facing the future prospects of the United Kingdom's economy, we focus on the UK economy in the International section.

THE UK ECONOMY – APPROACHING BREXIT

The recent revised estimates of growth for the UK released by the Office for Budget Responsibility (OBR)[5] clearly demonstrate that the UK economy is slowing down. Figure 2 summarises the OBR growth outlook for both GDP and productivity per hour and compares the forecast with the previous estimate. Arguably the most important forecast is the expected continued stagnation of UK productivity rates. Previously, the OBR had assumed that productivity rates would return to pre financial crisis rates. However, in this forecast, that assumption is no longer made.

---

[5]   Forecasts were released as part of the UK Budget. See http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-november-2017 for more details.
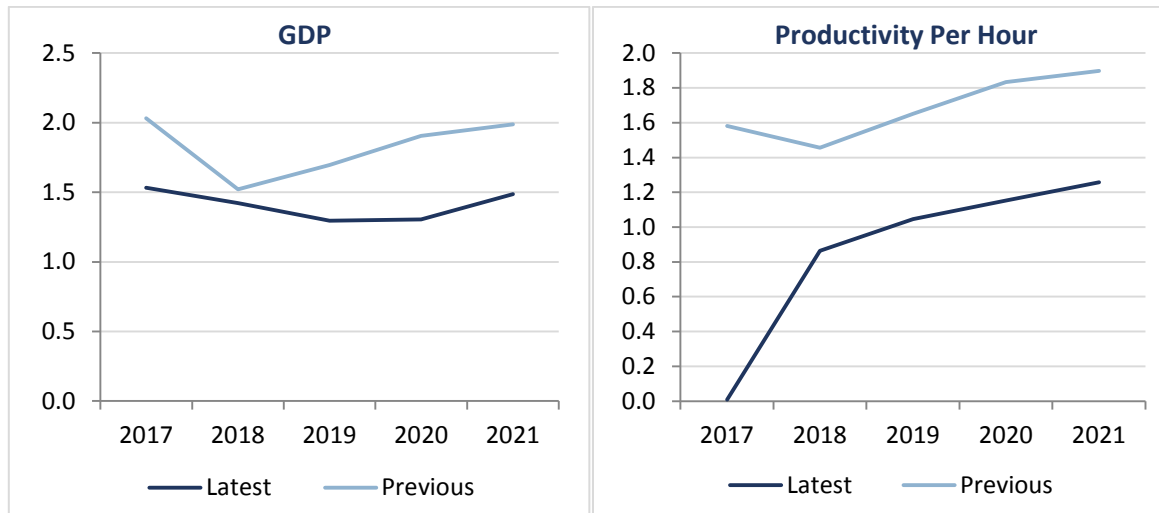
Source: Office for Budget Responsibility.

While many argue this is a symptom of the uncertainty surrounding the recent Brexit referendum, it must be kept in mind that this slowdown had emerged in the UK economy since early 2015. Comparing the recent performance of the UK economy to comparator countries yields insights into developments since the Brexit referendum. The UK is now experiencing one of the weakest growth rates amongst its G7 counterparts with a quarter-on-quarter growth rate of 0.4 per cent for Q3 2017. In comparison, the EU28 average growth is 0.6 per cent. Recent year-on-year quarterly results show the UK as one of the poorest performers in the advanced world during what can otherwise be regarded as a global upswing in growth.

Figure 3 below demonstrates this trend, wherein the net difference between UK, European and US growth rates has only become negative quite recently.

FIGURE 3   **UK QUARTERLY GROWTH DIFFERENCES (PERCENTAGE POINT DIFFERENCE, YEAR-ON-YEAR)**
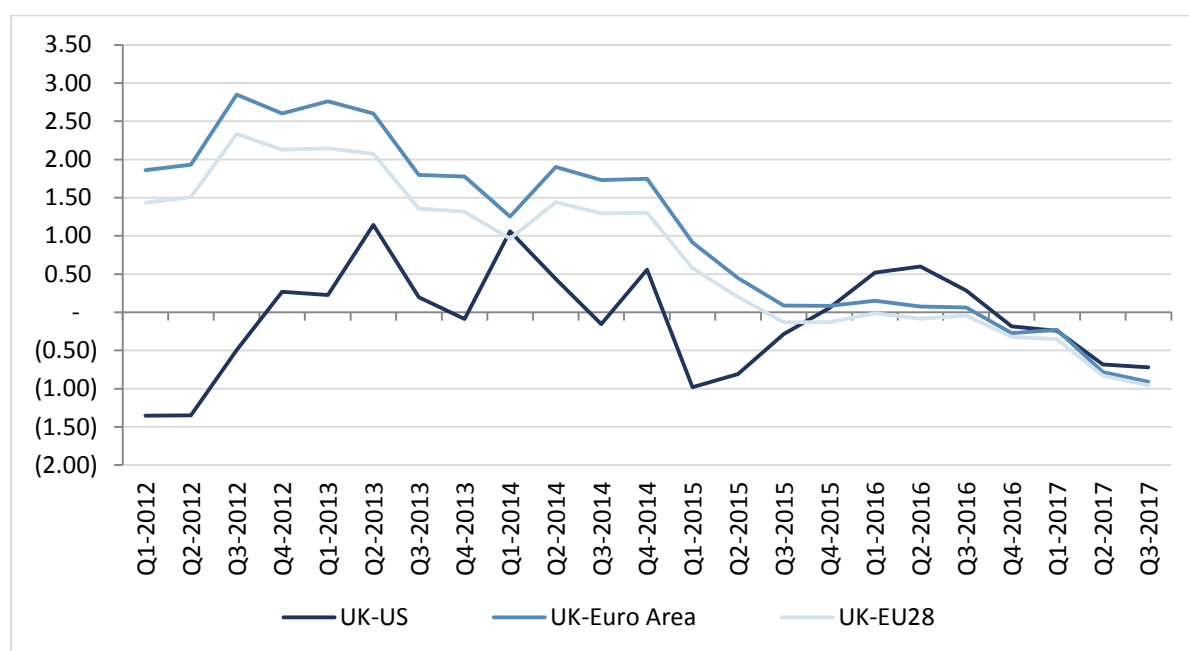
Source: OECD.stat, Quarterly National Accounts.

Within the UK economy there is conflicting evidence across sectors as to the current performance. For example, on a quarterly basis, the construction sector contracted by 0.9 per cent for Q3 2017 whereas a strong counteracting force is the continued growth in the services sector of 0.4 per cent. This reinforces the continued growth in the services sector within the UK economy. With a weight of 79.3 per cent in Q3 2017, the services industry accounts for the largest share of gross domestic product. In the uncertain post Brexit climate, this trend may prove to be a key vulnerability, given the relatively mobile nature of services compared to the manufacturing or construction sectors. This is particularly true for financial services which accounts for 41.5 per cent of total services in the UK as of August 2017.[6]

Given the heightened uncertainty due to Brexit, it is informative to assess trends in the international investment position of the UK economy. In particular, major changes in the investment position have resulted in a substantial re-allocation of investment of UK equity to the rest of the world. Most notably, in 2016 there was a £489.8 billion downward revision in the net investment position, which represents 20 per cent of the UK economy.

---

[6]   Office of National Statistics, UK index of services: August 2017.

FIGURE 4   REVISIONS TO UK NET INTERNATIONAL INVESTMENT POSITION, 2006 TO 2016 (£ BILLION)
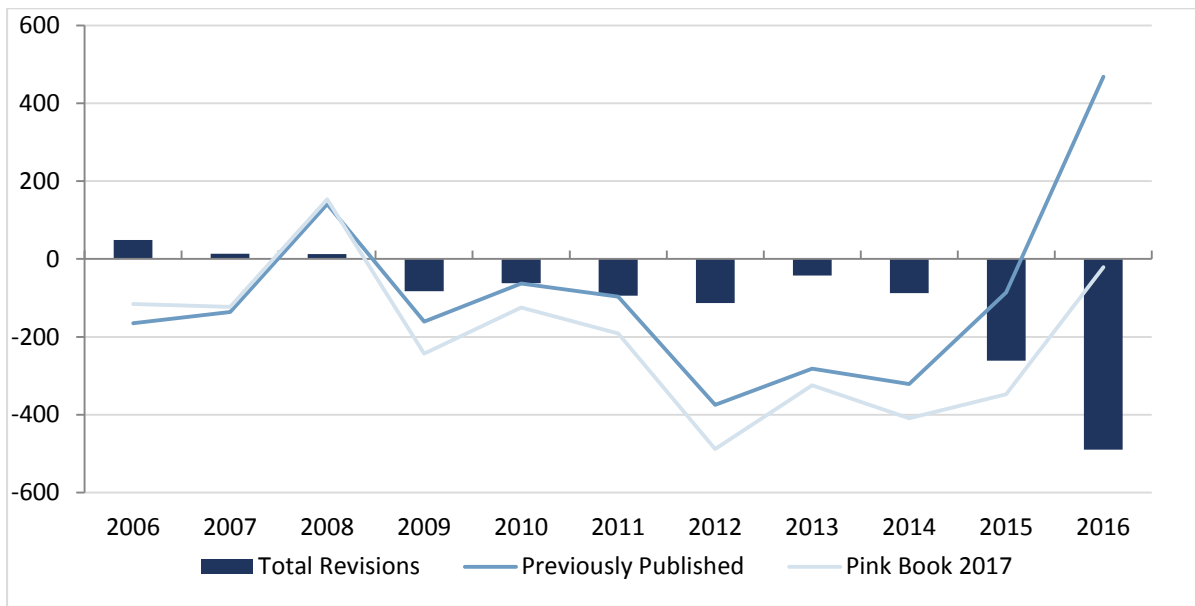
Source: Office of National Statistics (ONS) and www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/articles/
nationalaccountsarticles/impactofmethodchangestothenationalaccountsandsectoraccountsquarter11997toquarter22017.
Note: Impact of method changes to the National Accounts and sector accounts: Quarter 1, 1997 to Quarter 2, 2017.

This indicates a significant increased diversification away from UK corporate bonds and towards overseas holdings. Referring to Figure 5, in 2016 a historically large net disinvestment of £53 billion was recorded. To keep this in perspective, the investment gains made in 2014 and 2015 combined only account for 75 per cent of this value. Significant levels of investment have been pouring into overseas government securities, the largest flows seen since the dataset began in 1986. This has occurred in tandem with seven consecutive quarters of disinvestment away from UK corporate securities. This suggests significant concerns amongst investors vis-à-vis the future performance of the UK economy.

FIGURE 5   NET INVESTMENT BY UK FINANCIAL INSTITUTIONS (£ BILLION)
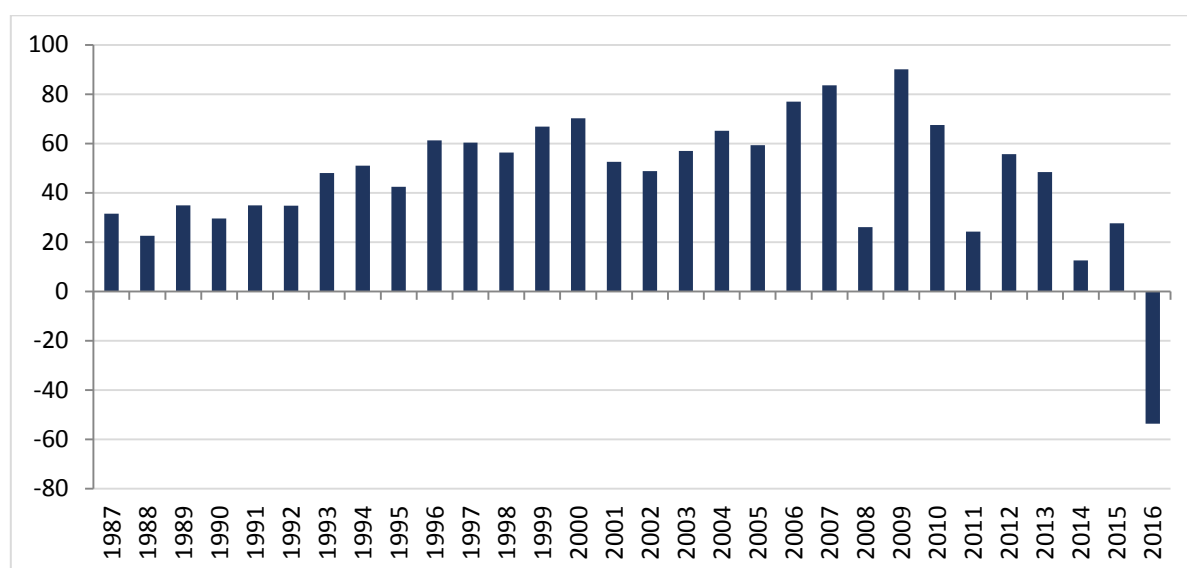
Source: Office of National Statistics (ONS).

In summary, the performance of the UK economy is expected to weaken in 2017 as high inflation and uncertainty due to Brexit negotiations are set to adversely impact consumers' expenditure. In November, in a move not seen in a decade, the Bank of England (BoE) increased the policy rate to 0.5 per cent in an attempt to curb high inflation. However, the move may compound the UK's weak growth outlook. Wren-Lewis,[7] for example, suggests these increases will contribute towards expectations of low growth in the future as certain firms will continue to underinvest compared to firms elsewhere. This will restrict increases in investment in the UK economy and place further downward pressure on UK productivity rates.

IMPLICATIONS FOR IRISH EXPORTS, IMPORTS AND THE BALANCE OF PAYMENTS

In Figure 6 the year-on-year growth rate of quarterly total Irish exports and imports is displayed. A key characteristic of Ireland's export performance in 2016 was the difference between services and goods exports. Services exports increased by over 10 per cent in 2016 and show signs of even greater growth in 2017 with increases averaging 14.9 per cent through Q2 2017. Goods and services import growth rates have been steadily decreasing however, with services contracting by 3.5 per cent and goods imports falling by 4.5 per cent. The significant reduction in goods exports in 2016, compared with 2015, was mainly attributable to the reduced levels of contract manufacturing. FitzGerald (2015)

---

[7]   https://mainlymacro.blogspot.ie/2017/11/the-brexit-interest-rate-increases-and.html.

attributes contract manufacturing amongst other factors as one of the key problems in terms of interpreting the Irish National Accounts.[8]

FIGURE 6   ANNUAL GROWTH RATE (%) IN TOTAL IRISH EXPORTS AND IMPORTS
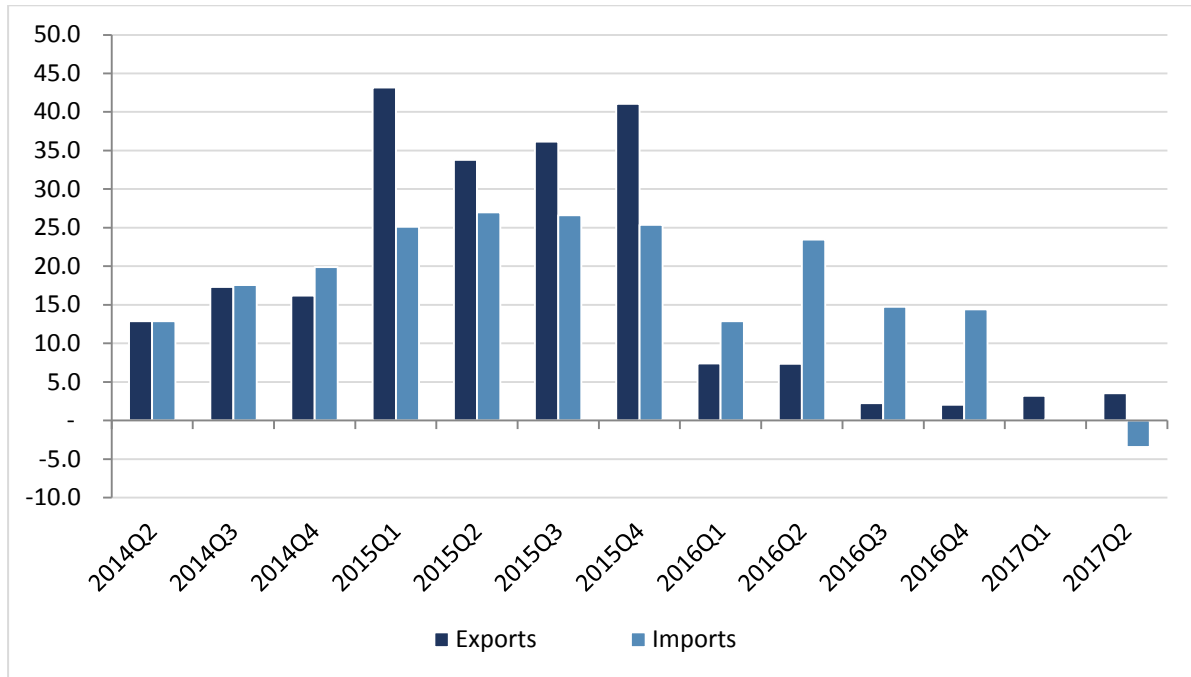
Source: Central Statistics Office.

Given the difficulties in understanding recent movements in the Irish terms of trade, in the next box we summarise some of the conceptual issues related to national accounting treatment of trade flows.

BOX 2   OWNERSHIP-BASED ADJUSTMENTS TO CROSS-BORDER TRADE IN IRELAND

Conventionally trade is seen as the exchange of goods and services across the borders of different nations. More recently however, the production of goods can depend upon a globalised network of supply chains with key components sourced from a variety of different countries. Much of the production process for specific goods owned by Irish firms can take place outside of the country and in some cases foreign activities can encompass the entirety of the goods' production cycle. Even though Irish-resident firms maintain ownership of the goods, they may lease out the production process to an entity in a different country. The sale of such goods between two entities in foreign countries is still considered an export of goods if ownership is retained by the Irish firm, even if the entire production process took place outside the Irish jurisdiction. This, along with other

---

[8]   FitzGerald, J. (2015). 'Problems Interpreting National Accounts in a Globalised Economy – Ireland', ESRI: Special Article.

types of ownership trade, can cause differences in total trade balances compared with what international trade would imply. Below are the key components of trade on an ownership basis which contribute to the differences between international and total trade values.

Contract Manufacturing: This process involves contracting a foreign manufacturer who will handle the processing of intermediate goods which are intended to be sold thereafter. These production arrangements include (a) goods sent abroad for further processing, (b) goods received from abroad for processing in Ireland and (c) goods purchased and processed abroad. Often referred to as 'factoryless production', contract manufacturing maintains ownership of the processed goods by Irish-resident firms (or companies abroad when Irish resident companies are contracted for processing goods), with the sale of the final product being recorded as an Irish export (or Irish import) when the change of ownership occurs at the end of the production cycle.

Merchanting of Goods: This aspect of ownership-based adjustments to trade incorporates the total value of goods resold internationally without ever interacting with the Irish border. Values are calculated on a net basis wherein the purchase and resale values are taken into account and a net exports value is combined together.

Other Conceptual Adjustments: These are other adjustment processes used to adjust Balance of Payment values and include estimates for the purchases of aviation fuel, illegal cross-border trade, as well as various adjustments to merchandise values and repair contracts.

The 'c.i.f. to f.o.b.' adjustment: Importing goods will require transportation and insurance costs. These costs linked to getting goods across the border are factored out, resulting in the free on-board value. For further detail on these items, see CSO (2016).

Reference:
Central Statistics Office, *Explaining Goods Exports and Imports 2012-2016.*

The drop in Irish net exports between 2015 and 2016 saw net levels of contract manufacturing alone fall by €9.1 billion, whereas total international net exports only rose by €3.2 billion. Though contract manufacturing does not involve any cross-border activity, it plays an enormous role in determining Irish trade values. Historically, contract manufacturing has represented close to 1 per cent of total net exports of goods. This value climbed to 20 per cent in 2014 before increasing further to over 50 per cent of the total value of goods exports in 2015 and 2016. Of the other adjustment components listed in the box above, these account for about 5 per cent of the total value of goods exports. Figure 7 below distinguishes quarterly totals of Irish exports and imports between the different types of trade discussed. While total goods exports are trending downwards across recent quarters, it can be seen that international goods exports are in fact increasing.

FIGURE 7   GOODS EXPORTS AND IMPORTS BY TYPE (€MILLION)
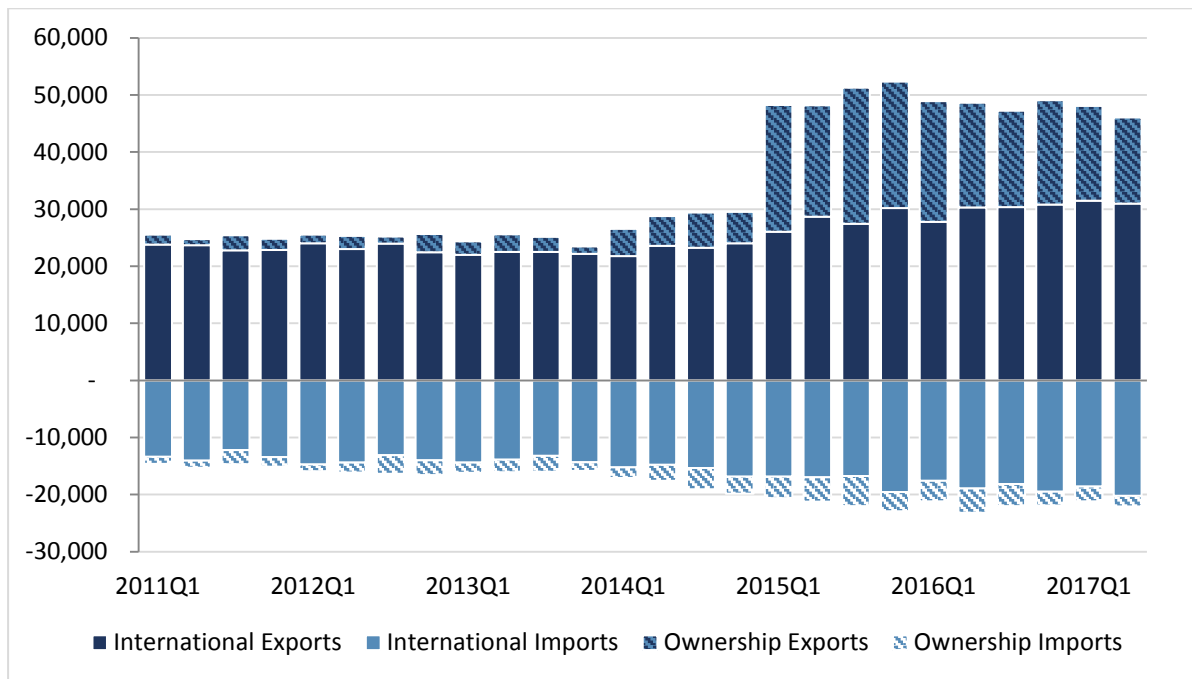
Source: Central Statistics Office.

Focusing on the components of international trade, exports of food and live animals increased by 13 per cent year-on-year for the period January to September. Medical and pharmaceutical product exports rose by 18 per cent in the same period, netting an increase of €4.6 billion. Organic chemicals, however, saw the largest drop in levels by €3.5 billion (-25 per cent). Medical and pharmaceutical product imports grew 36 per cent, increasing by €2.5 billion on a year-to-year basis in 2017. Road vehicle and other transport equipment imports saw the largest combined decrease of €2.9 billion (10 and 28 per cent respectively) between the same periods.

In terms of net trade, these levels too differ as a result of adjustments previously discussed. The differences, however, are far more dramatic. Figure 8 displays net surpluses for both categories. It is clear Ireland's cross-border trade balance has been falling steadily since 2014. As of 2016, cross-border net exports are worth €583 million whereas adjusted net exports are valued at €61,138 million.

FIGURE 8   CROSS-BORDER AND ADJUSTED NET EXPORTS OF GOODS AND SERVICES (€MILLION)
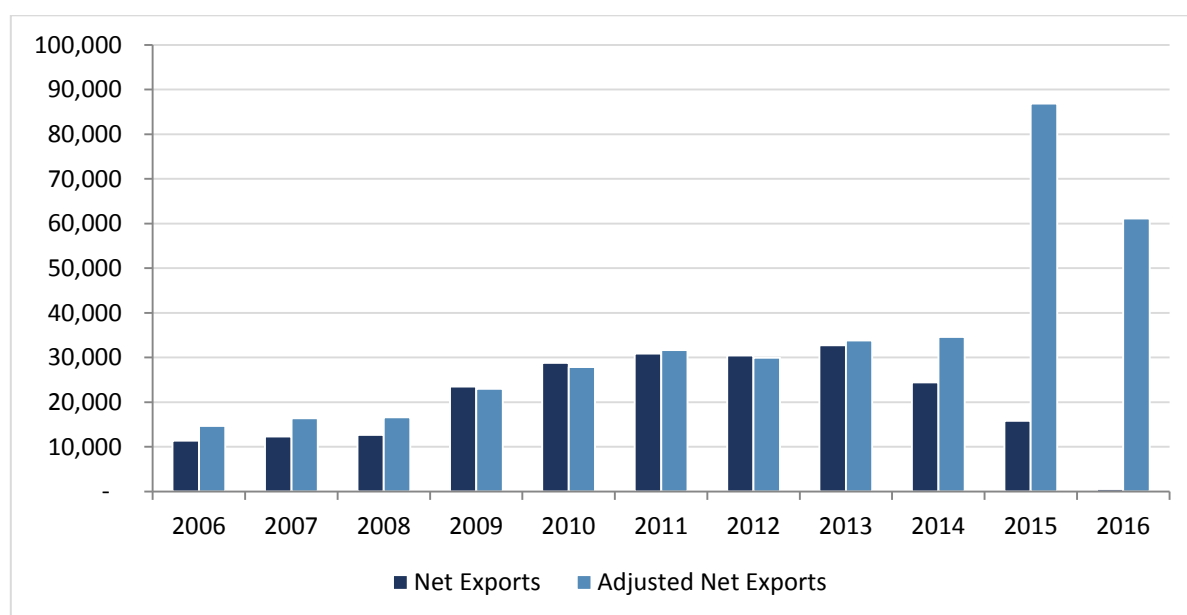
Source: Central Statistics Office.

The CSO has recently produced cross-border trade values specifically between the UK and Ireland.[9] Between merchandise and services, Irish-UK cross-border trade netted surpluses to the Irish economy of €8,896 million and €9,567 million for 2015 and 2016 respectively. This underscores the vulnerability of the domestic economy to a hard Brexit type outcome.
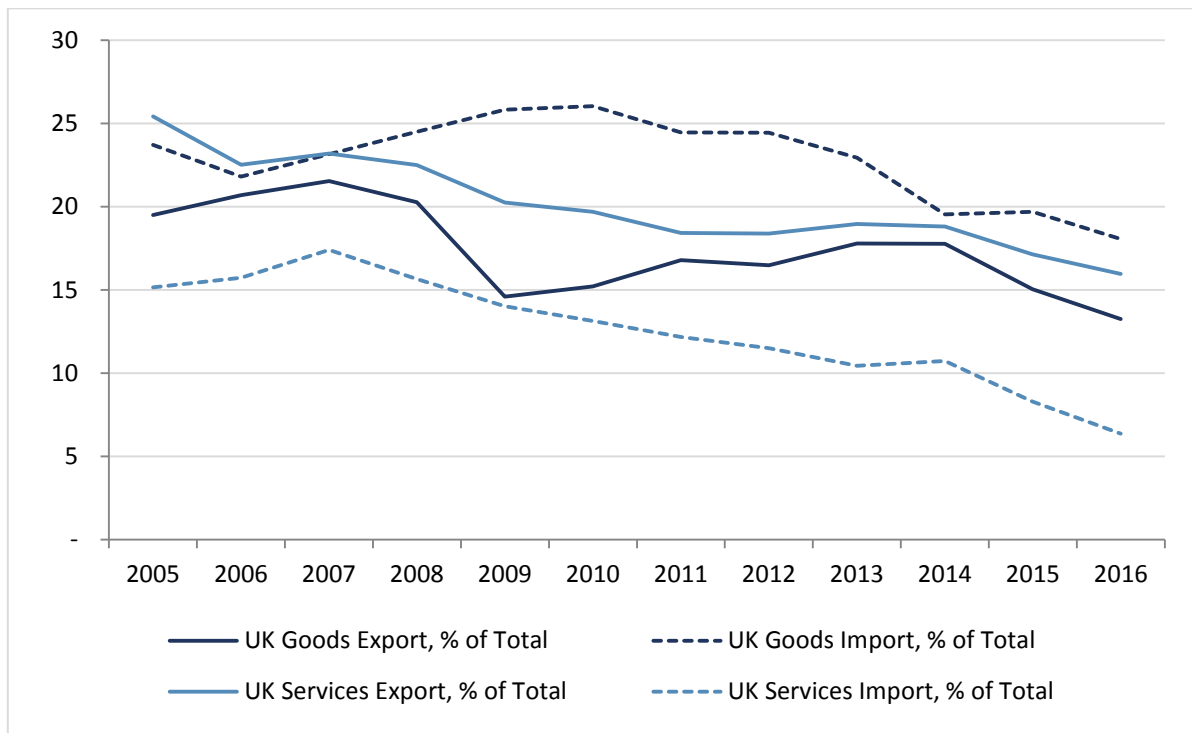
Another point of interest in terms of the vulnerability of the domestic economy to a hard Brexit is how the trade of domestically-owned Irish firms is diversified. Between domestic and foreign-owned Irish firms, the split is exactly 50:50 in terms of total trade to the UK. As Lawless et al. (2017)[10] highlight, between 2011 and 2015, 41.5 per cent of Irish non-food exports and 49 per cent of Irish food exports were destined for the UK. Given that 14 per cent of total exports are destined for the UK, this suggests foreign-owned firms operating in Ireland are more richly diversified in terms of export destinations, leaving domestically-owned firms particularly exposed to UK specific risk. The study also identifies Irish domestically-owned firms as being far less likely to survive as exporters in general. Focusing on the cross-border trade of goods, Lawless and Studnicka (2017)[11] show that a WTO arrangement would result in UK cross-border trade flows shrinking by 9 to 17 per cent in value, with the food sector likely to be most affected.

---

[9]   Central Statistics Office, Balance of International Payments Quarter 2, 2017.
[10]   Lawless, M., I. Siedschlag and Z. Studnicka (2017). 'Expanding and diversifying the manufactured exports of Irish-owned enterprises', *Evidence for Policy*, ESRI, Department of Jobs, Enterprise & Innovation and Enterprise Ireland.
[11]   Lawless, M. and Z. Studnika (2017). 'Potential impacts of WTO tariffs on cross-border trade', InterTradeIreland, available online at: www.intertradeireland.com.

FIGURE 9   **ANNUAL UK SHARE OF TOTAL EXPORTS AND IMPORTS (%)**

Legend:
- UK Goods Export, % of Total
- UK Goods Import, % of Total
- UK Services Export, % of Total
- UK Services Import, % of Total

Source: Central Statistics Office.

Whilst shares of total trade are falling with respect to the UK, changes in these exports and imports for the period January to September remain relatively stable as shown in Table 1 compared to the same period in 2016. Exports and imports of Chemicals and related products saw the largest changes, of 36 and 30 per cent respectively. Machinery saw a slight fall of 6 per cent in exports to the UK. There was also a significant increase in trade with the US, while there was relatively little growth overall in trade with the rest of the EU for the same period.

TABLE 1   JANUARY-SEPTEMBER ANNUAL CHANGE (%) IN GOODS EXPORTS AND IMPORTS FOR THE UK, THE US AND THE REST OF EU FOR MAJOR COMMODITIES

	Exports	Imports
Total – UK	11	8
Food and live animals	8	5
Chemicals and related products	36	30
Machinery and transport equipment	-6	0
Miscellaneous manufactured articles	3	-2
Total – Rest of EU	1	-2
Food and live animals	19	9
Chemicals and related products	0	14
Machinery and transport equipment	-2	-12
Miscellaneous manufactured articles	-11	-2
Total – US	4	6
Food and live animals	36	-11
Chemicals and related products	10	85
Machinery and transport equipment	-29	-24
Miscellaneous manufactured articles	15	-3

Source: Central Statistics Office.

Based on the latest trends and the reduced expectations of strong growth in the US and UK, we have revised export growth expectations down to 3.1 per cent in 2017, followed by 4.4 per cent in 2018 (Figure 10). We also revise downwards our import forecasts; however, given the expected increase in private consumption, we still expect imports to grow by 4.7 per cent this year and 6.8 per cent in 2018. Overall, the net contribution to GDP from trade is expected to be moderately negative both in 2017 and 2018. Given the highly influential role that developments in contract manufacturing and aircraft leasing can have on the terms of trade, these forecasts do come with an elevated level of uncertainty.

FIGURE 10   IMPORT AND EXPORT GROWTH (2017 - 2018 FORECASTS)
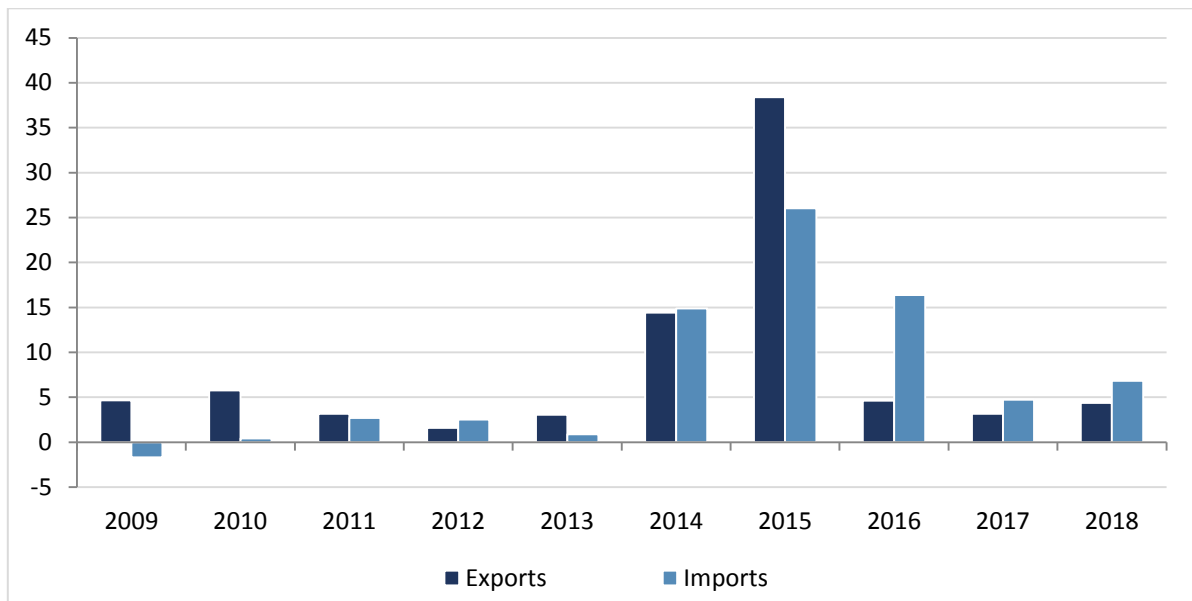
Source: QEC calculations.

As of Q2 2017, the current account balance was a €872 million deficit, half the value for the same period last year. This improvement is attributed to a year-on-year increase in the net exports of services. The outflow of primary income, however, is now at a particularly high level after a sudden rise in the outflow of portfolio income on equity by 30 per cent over a single quarter. This is likely due to improving financial conditions for investment funds resulting in greater profit repatriation from Ireland. Figure 11 depicts the current account by its various categories of income flows.

FIGURE 11   CURRENT ACCOUNT BALANCE, QUARTERLY (€MILLION): 2011 - 2017
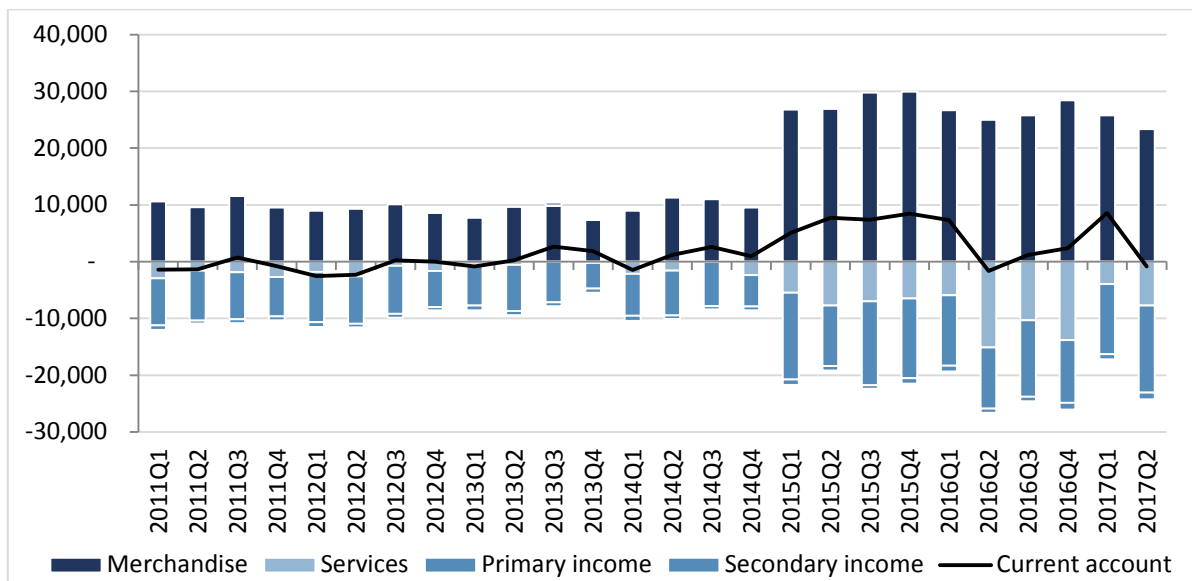
Source: Central Statistics Office.

The Domestic Economy

OUTPUT

The Domestic section of the *Commentary* is organised as follows; we initially review the outlook for output growth before discussing developments in the Irish monetary and financial sectors. Prices and earnings in the economy are then discussed, followed by a review of demand-side factors such as consumption and housing market issues. On the supply side, we then examine developments in investment and the labour market before concluding with an analysis of the public finances.

The latter part of the year has seen strong growth in taxation revenues across nearly all items. This, allied to the continuing robust performance of the Irish labour market where the unemployment rate is now expected to be less than 6 per cent by the end of the year, results in our overall estimate of output growth of 5 per cent in 2017.

While this is broadly unchanged since the last *Commentary*, the expected composition of growth has altered somewhat. As explained in the International section we have revised downwards our outlook for both exports and imports somewhat. However, the overall impact on domestic growth via the terms of trade is relatively unchanged. Domestic factors, consumption and investment, are expected to be the main sources of growth in both 2017 and 2018. For 2018, we are forecasting a marginally stronger increase in output of 4.2 per cent than envisaged in the previous *Commentary*.

In Figure 12 we compare the actual Irish output performance for 2016, along with the *Commentary* forecasts for 2017 and 2018 with other European economies. Irish output growth is currently over 2.5 times that of both the Euro Area and the European Union and is expected to continue to outperform most other European countries over the next 18 months.

FIGURE 12   ACTUAL (2016) AND FORECAST (2017, 2018) GDP GROWTH RATES FOR SELECT EUROPEAN ECONOMIES
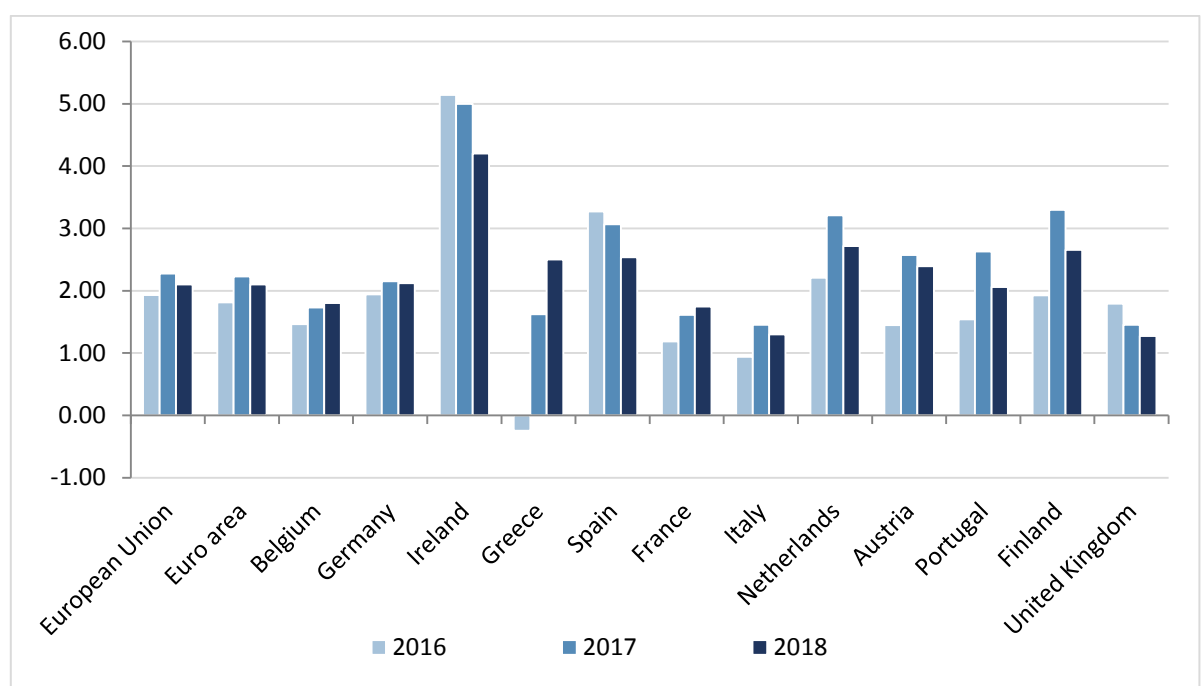
Sources: *QEC* calculations for Ireland, AMECO estimates for all other countries.

MONETARY AND FINANCIAL CONDITIONS

In line with the broader trends in the Eurozone, macro-financial conditions in Ireland have continued to improve in the most recent quarters. The extensive monetary policy stimulus undertaken by the ECB, in particular through the non-standard asset purchase programmes, have compressed sovereign, financial institution and large corporate borrowing costs. Negative yields on overnight interest rates (Figure 13) have provided a stabilising factor for market stresses and, despite the rise in geopolitical uncertainties surrounding the policies of the US administration, Eurozone elections, and the ongoing Brexit discussions, financial markets appear to be experiencing a relative calm (ECB, 2017).[12]

---

[12]   European Central Bank (2017), 'Financial Stability Review', (1), May 2017, Frankfurt.

FIGURE 13   EURO OVERNIGHT INDEX AVERAGE (%)
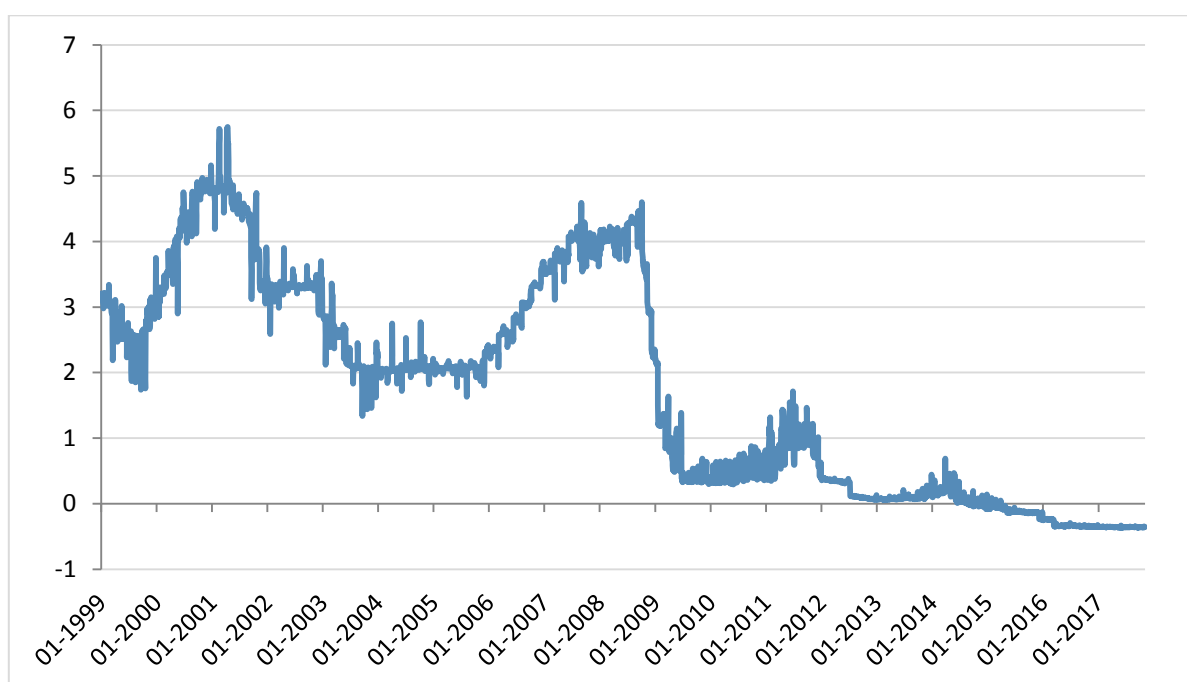
Source: European Central Bank, Statistical Data Warehouse

However, while the European economy has begun to show signs of a cyclical recovery thus providing a boost to the macro-financial backdrop, the degree to which accommodative monetary policy is reducing market tensions may lead to risks arising if the ECB pull back towards a more normalised monetary policy stance. At their most recent governing council, the ECB held benchmark rates at historic low levels but reduced the scope of asset purchases. The implications of these developments for Ireland are discussed in detail in Box 3.

One of the implications of the expansionary monetary policy has been a compression of sovereign bond yields. The Public Sector Asset Purchase Programme has been purchasing government securities on the secondary market since March 2015, putting downward pressure on yields. Ireland has been a major beneficiary with a net cumulative €23 billion worth of bonds purchased to date (net of redemptions). Coupling the monetary policy stance with the economic recovery and the successful completion of the official financing support programme, the cost of debt for the Irish sovereign has declined to historic lows, and remains only a number of percentage points above the benchmark German rate (Figure 14).

FIGURE 14   TEN-YEAR GOVERNMENT BOND YIELD (%)
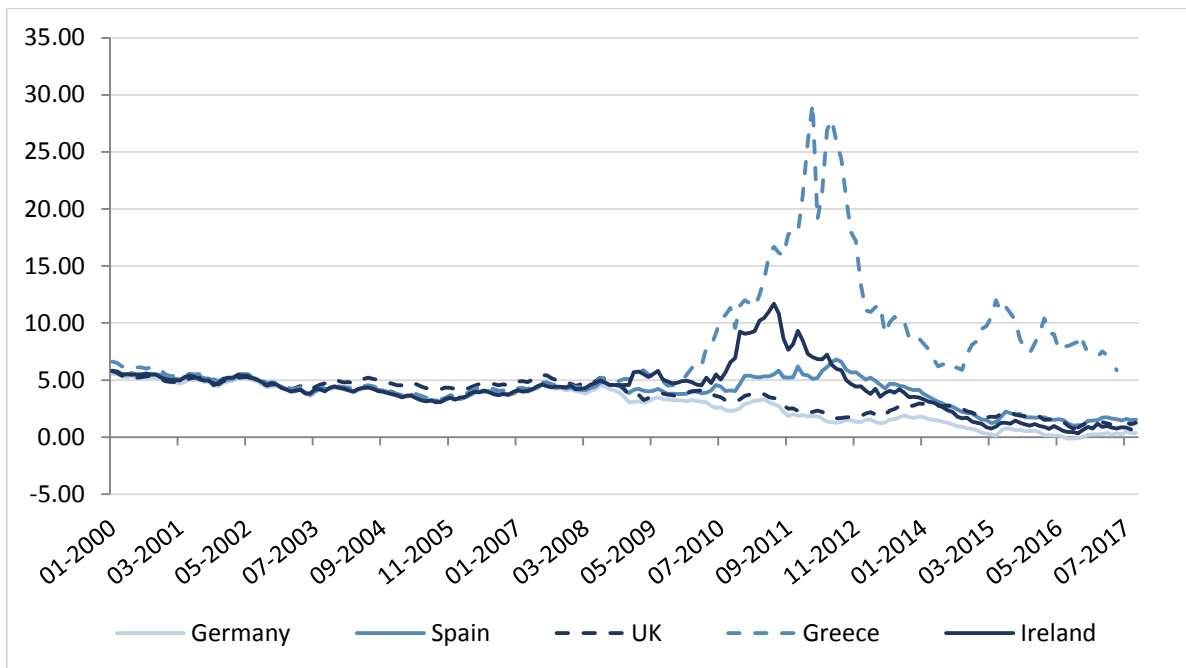
Source: St. Louis Fed database.

Trends in lending

While the overall financing environment has become more benign in recent months, what matters for Irish economic growth is how these developments translate in new flows of lending and the cost of borrowing for Irish households and firms. Figure 15 presents the growth rates of credit to households from Irish resident credit institutions. The data are split by loans for house purchase and other personal loans (auto finance, credit cards, student loans etc.). Overall, the change in credit for house purchase continues to decline, down -0.6 per cent year-on-year to Q2 2017. However, a distinguishing feature of 2016 and the first quarter of 2017 has been a reduction in the pace of deleveraging or credit contraction; the rate of decline has moderated from -2.2 per cent in Q2 2017, pointing towards a further stabilisation of the sector.

In Q2 2017, we observe an increase in the growth rate of lending for non-housing related household loans, which are now up 6.2 per cent on a year-on-year basis. As these loans are mainly for consumption purposes and auto financing, the broader recovery in household spending is undoubtedly leading to an increase in demand for this type of financing.

FIGURE 15   YEAR-ON-YEAR GROWTH RATE OF CREDIT TO HOUSEHOLDS (%)
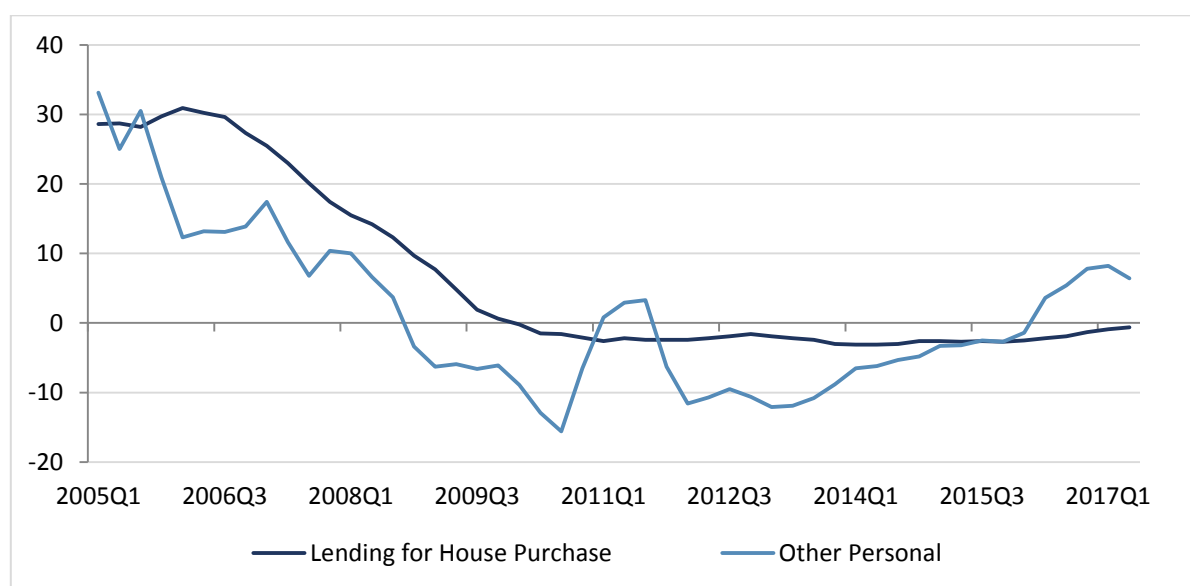
Sources: Central Bank of Ireland, Credit, Money and Banking Statistics.
Notes: Data are taken from Central Bank of Ireland data release A.18, growth rates series codes 777 and 1,252.

Turning to the provision of credit to non-financial corporations, the overall stock of credit is continuing to decline, down by -11 per cent in Q2 2017 year-on-year. As noted in the previous *Commentary*, this represents an acceleration in the pace of deleveraging which runs counter to the findings for households. However, there is an important compositional factor to consider with this series. Credit to firms outside the financial and property related sectors, which can be thought of as finance for the real economy, in fact grew by 1.9 per cent in Q2 2017 which represents an acceleration relative to 0.6 per cent growth in Q1 2017. In terms of financing growth for Irish businesses following the crisis, it is noteworthy to see credit flows beginning to pick up. The overall fall in private sector enterprise credit continues to be driven by deleveraging amongst financial sector and property related firms.

FIGURE 16   YEAR-ON-YEAR GROWTH RATE OF CREDIT TO PRIVATE SECTOR ENTERPRISES (%)
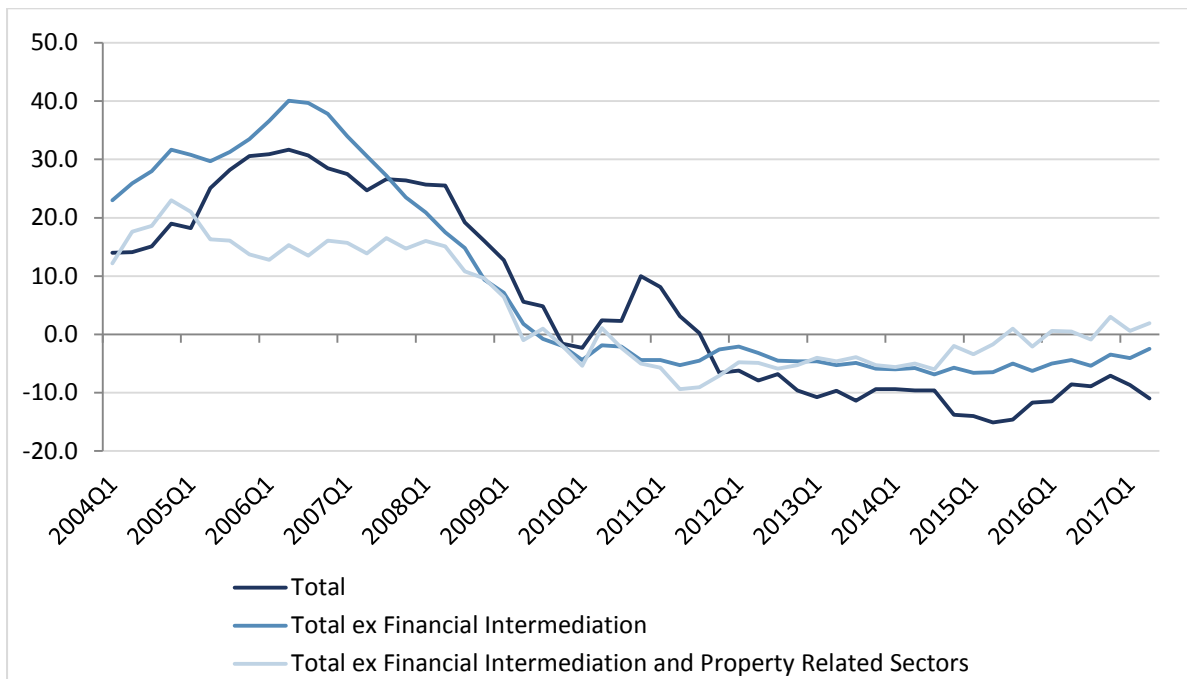
Sources: Central Bank of Ireland, Credit, Money and Banking Statistics.
Notes: Data are taken from Central Bank of Ireland data release A.14, growth rates series codes 17, 17.1 and 17.2.

While monitoring the stock of lending is important from the perspective of risk, understanding new lending flows is critical for growth as these funds directly cover new investments and spending. In terms of new mortgage lending, the significant increase in house prices in the past number of months has begun to coincide with greater rates of mortgage lending. In Q3 2017, the volume of new mortgage drawdowns increased by 16 per cent year-on-year and the value of mortgages increased by 29 per cent year-on-year. The relatively higher growth rate in the value relative to the volume of loans represents the fact that borrowers are drawing down larger and larger loans given rising house prices. The average loan size for mortgages was €221,748 in Q3 2017 which is 87 per cent of the peak value in Q1 2008. Indeed, the value of new drawdowns exceeded €2 billion for the third quarter of 2017, for the first time since 2009, which is an indication of heightened credit market activity. McQuinn (2017) finds that Irish house price growth in the recovery has occurred without a significant increase in credit expansion. With the credit market beginning to grow rapidly, strict monitoring of these developments is required to ensure a house price-credit spiral does not materialise.

FIGURE 17   YEAR-ON-YEAR GROWTH RATE OF NEW MORTGAGE DRAWDOWNS (%)
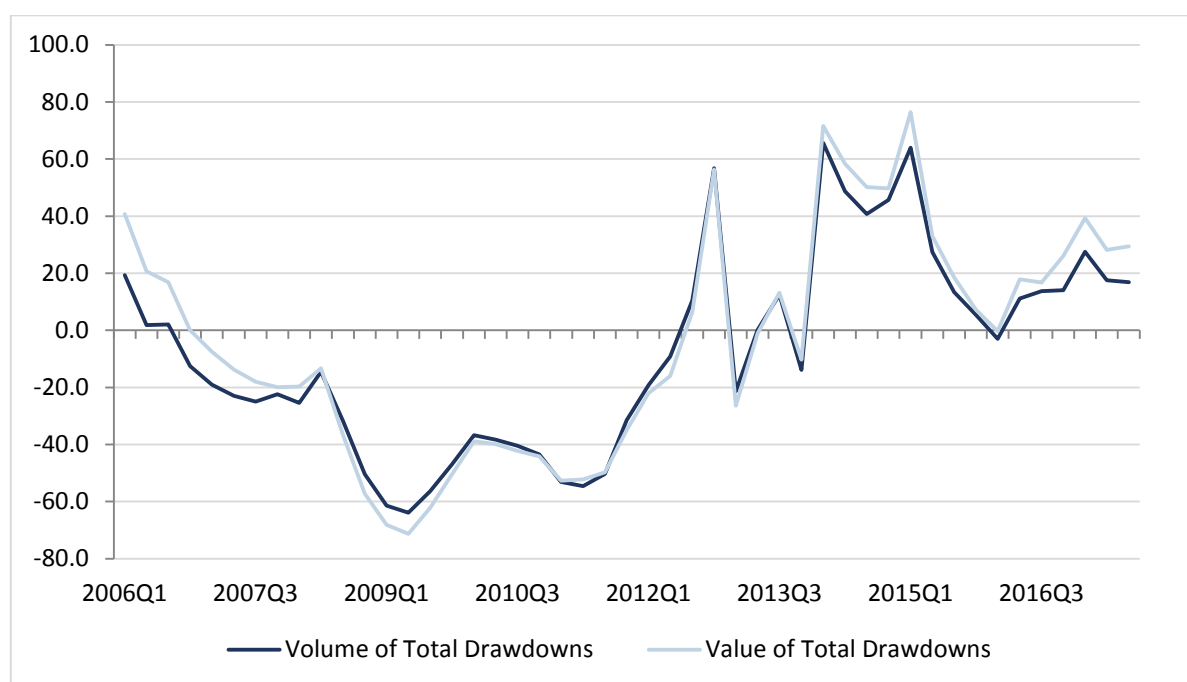
Sources: Banking and Payments Federation Ireland.

The increase in mortgage lending, and greater loan sizes, must be assessed in terms of the potential financial stability risk. Given the low base from which mortgage credit is growing, and the current credit conditions under which lending is taking place, we continue to hold the view of the previous *Commentary* that the credit risk of new lending is low and as such does not at present pose a threat to banking sector stability.

The most recent mortgage market overview provided by Kinghan et al. (2017)[13] covers lending for the first six months of this year, the first period in which banks have been operating under the changes to the macroprudential regulations announced in November 2016. It is also a period in which the Government Help-to-Buy scheme was fully operational. A number of insights from this research are important to highlight. First, the banks appear to be fully exploiting the allowances to exceed the mortgage caps – 18 per cent of the value of loans were allowed to breach the LTI limit (max 20 per cent) and 20 per cent of second time borrowers were allowed an LTV over 80 per cent which is also at the regulatory maximum. While the average LTI and LTV ratios for FTBs and SSBs remain well below the macroprudential restrictions, there does appear to be some drift towards higher leverage across all borrowers. For example Figure 3 of Kinghan et al. (2017), shows that nearly 40 per cent of first time buyers are drawing down loans at 90 per cent LTV which is an increase on the previous year. An excessive

---

[13]   Kinghan, C., P. Lyons and Y. McCarthy (2017). 'Macroprudential Measures and Irish Mortgage Lending: Insights from H1 2017', Central Bank of Ireland, Economic Letter No. 13.

concentration of high LTV loans can leave borrowers exposed to the risk of moving into negative equity following any reduction in property prices. However, the recent Household Credit Market Report shows very few loans are being extended with a repayment burden above 25 per cent of gross monthly income. This evidence would appear to indicate conservative credit risk assessment.

On the current evidence, credit risks would appear to be moderate given the credit conditions of new lending. While the drift towards a higher share of FTBs at 90 per cent LTV is noteworthy, the income restriction at 3.5 times gross income is lower than international peers thus providing good protection against borrowers over-extending themselves in an affordability context. Therefore, there would appear to be little evidence to suggest a policy tightening is required over and above the changes just announced by the Central Bank.

Another aspect of new lending that provides a guide to the health of the domestic economy is lending to small business. More recently, loans to Irish small- and medium-sized enterprises (SMEs) have grown steadily in 2016 (Figure 18). This continues the trend in overall SME lending which began to increase in 2015 from mid-2014 lows. Gross new lending was €1,230 billion in Q2 2017, up from €1,173 million one year earlier. Of note is the sectoral allocation of new financing which has begun to re-orientate towards the construction and domestically non-traded sectors more recently. Increased credit extension to these sectors is consistent with the broadening of the recovery in the domestic economy.

FIGURE 18   QUARTERLY NEW LENDING TO IRISH SMES BY SECTOR (FOUR-QUARTER ROLLING AVERAGE)
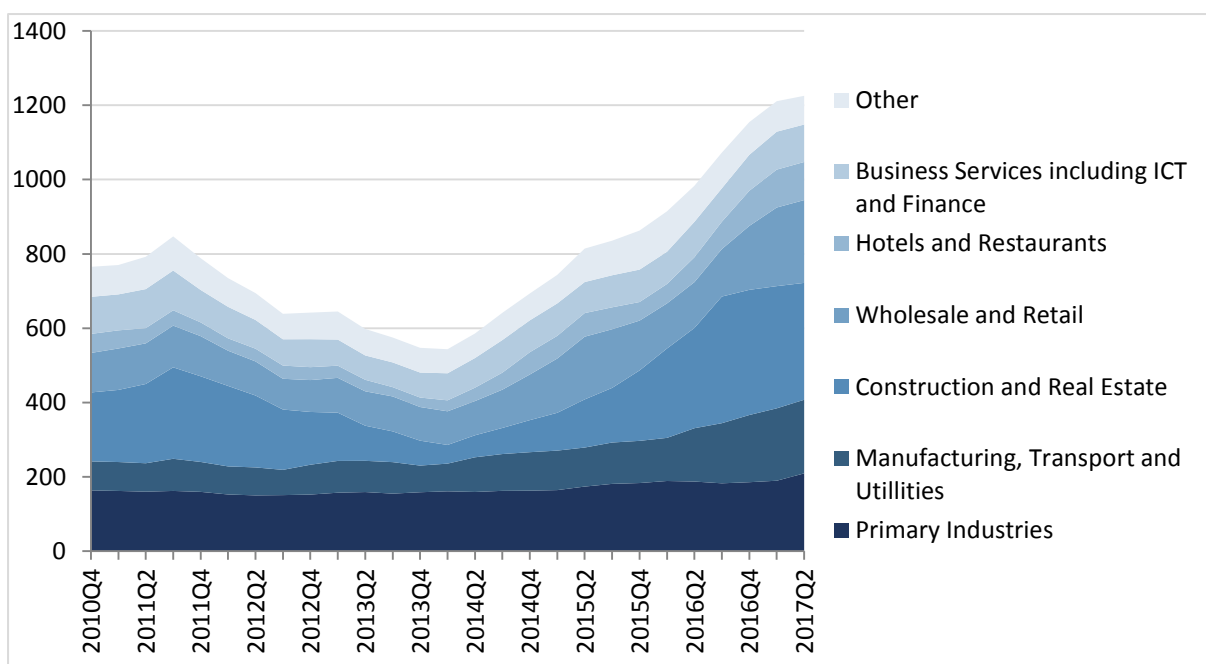

Sources: Banking and Payments Federation Ireland.

Interest rates and the cost of finance

The cost of finance in Ireland for both corporate and household credit has been high by European standards. The standard variable rate on new mortgage loans in Ireland stood at 3.41 per cent as of Q3 2017; this is down slightly year-on-year from 3.47 in Q3 2016 but a moderate increase over the first two quarters of 2017. However, comparing Irish new house purchase loans relative to other Eurozone economies, it can be seen that new lending rates are the highest of the comparison group (Figure 19). As of August 2017, interest rates on new house purchase in Ireland were nearly 1.2 per cent higher than the median of the other countries presented. This gap has widened since mid-2014 when Irish interest rates began to decouple from the ECB policy rate.

**FIGURE 19 INTEREST RATES ON NEW HOUSE PURCHASE LOANS TO HOUSEHOLDS – EUROPEAN COMPARISON**
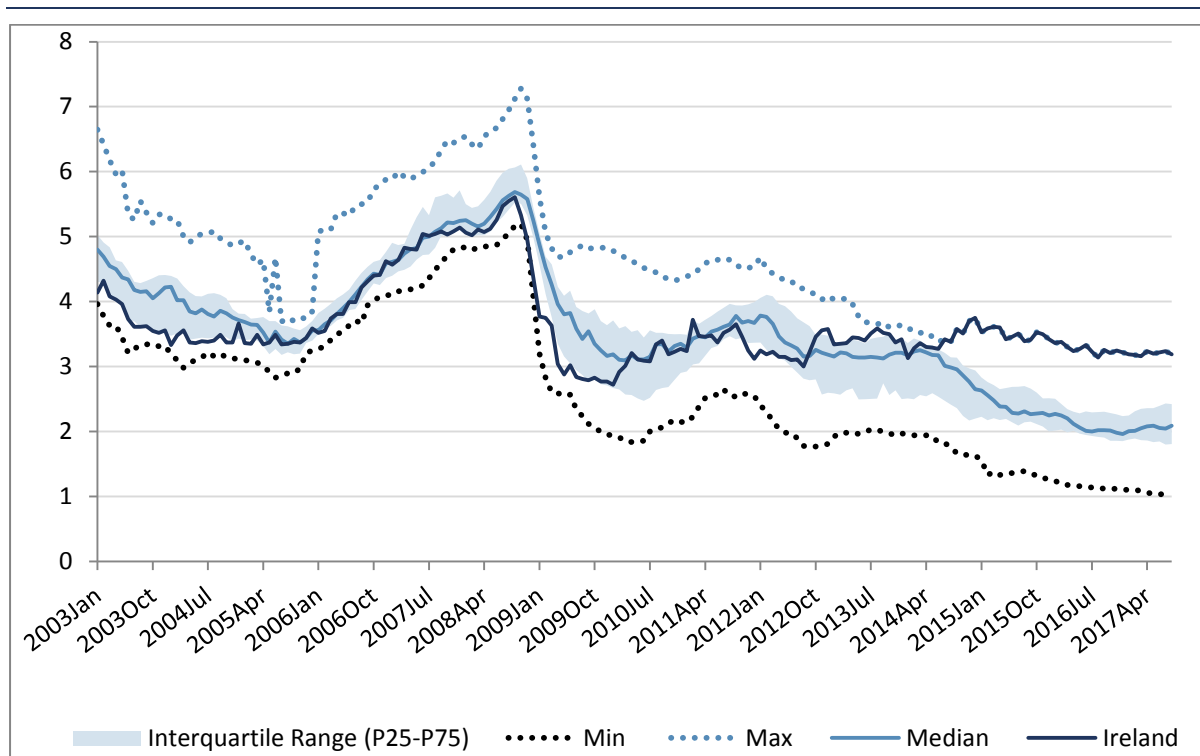
Source: ECB MFI data.
Notes: Countries included are: AT, BE, EE, ES, FI, FR, IE, IT, LT, NL, PT, SI. These countries are selected due to data availability. Data differ between this chart presented and the text as the ECB comparison data include restructured mortgages whereas the new business standard variable rate is only for new drawdowns.

A similar picture emerges in relation to corporate interest rates. Figure 20 presents the interest rates on new business loans for non-financial corporations in Ireland relative to the average for the Eurozone. Two series are presented: 1) covering all loans and 2) capturing loans of < €250,000, which is used as a proxy for loans for SMEs. In August 2017, the average rate on new loans for all Irish corporates was 2.54 per cent and the Eurozone average was 1.74 per cent. For small Irish corporate loans, the interest rate in June 2017 was 5.2 per cent

compared to the Eurozone average of 2.52 per cent. Interest rates are down year-on-year for small corporates but remain considerably higher than for their European peers.

FIGURE 20   INTEREST RATES ON LOANS TO NON-FINANCIAL CORPORATIONS – EUROPEAN COMPARISON
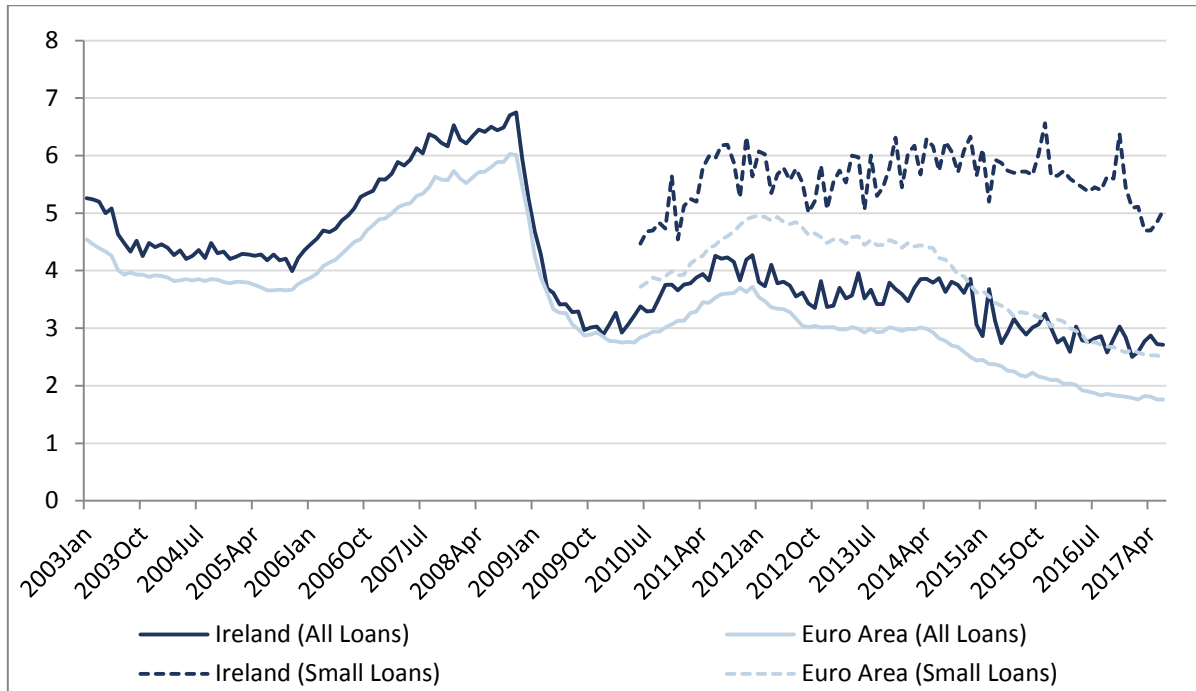
Sources: ECB MFI data. Small loans refer to loans less than €250,000.

The very evident dislocation in the transmission of policy rates to lending rates in Ireland which has occurred since 2014 poses challenges for the effectiveness of monetary policy. Box 3 below discusses the implications for Ireland of the current ECB policy stance and what risks might accompany a normalisation of policy rates.

BOX 3   TOWARDS A NORMALISATION OF MONETARY POLICY? UNDERSTANDING THE ECB POLICY STANCE AND ITS IMPLICATIONS FOR IRELAND

Overview

In line with moves by the US Federal Reserve, Bank of England and Bank of Japan, the European Central Bank began lowering policy rates in response to the dramatic deterioration in financial and economic conditions following the collapse of Lehman Brothers in 2008. The ECB aggressively reduced policy rates between July 2008 and May 2009 by 325 basis points to just over 1 per cent (MRO).[14] Figure A below plots the evolution of the three main ECB policy rates (MRO, deposit facility and MLF) from 2003

---

[14]   Stark (2009) 'Monetary policy, before, during and after the financial crisis', Speech at Tubingen University.

to present. The explicit objective of the European Central Bank in terms of monetary policy operations is to ensure price stability as measured by a Eurozone inflation rate of close to, but below, 2 per cent over the medium term. However, the ongoing sovereign debt and banking crises, coupled with the backdrop of muted inflation, led to a major expansion in both the toolkit and the monetary policy stance of the ECB. Further rate reductions followed through to March 2016 when the deposit rate was set to -0.4 per cent, the MRO to 0, and the MLF to 0.25 per cent.[15]

FIGURE A   EVOLUTION OF ECB POLICY RATES (%)
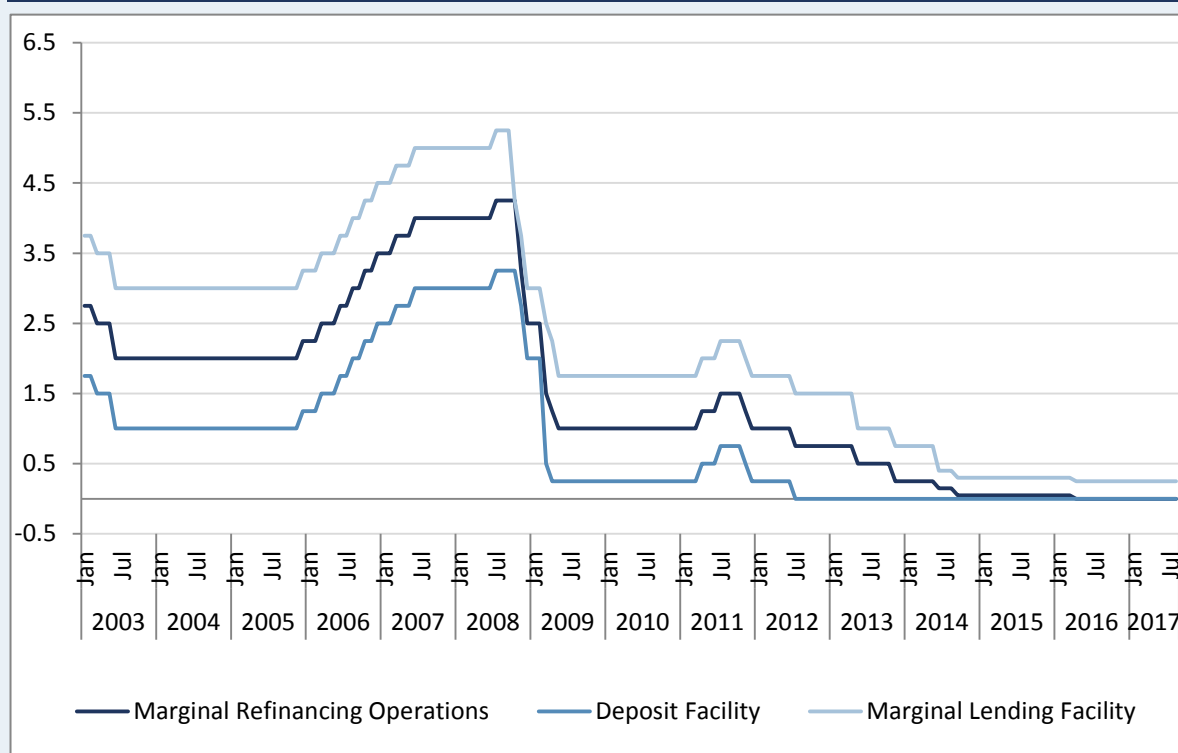
Source: European Central Bank.

Faced with the dual challenge of operating monetary policy at the zero lower bound as well as the unprecedented financial and economic crisis in the Eurozone, the ECB introduced a range of unconventional monetary policy instruments to address the risks to persistent low inflation. The most extensive of these was the series of Asset Purchase Programmes which act to purchase public and private securities in the secondary market. Four main programmes are operational: a corporate sector purchase programme; a public sector purchase programme; an asset backed securities purchase programme; and a series of covered bond purchase programmes. Across the programmes, between April 2016 to March 2017, the monthly net purchases amounted to €80 billion up from €60 billion over the period March 2015 to March

---

[15]   The ECB maintains three key interest rates. First, the interest rate on the *main refinancing operations (MRO)*, provides the bulk of liquidity to the banking system. Second, the rate on the *deposit facility* for banks to make overnight deposits with the Eurosystem and finally the rate on the *marginal lending facility*, which offers overnight credit to banks from the Eurosystem.

2016. While a full overview of these programmes and their effectiveness is outside the scope of this box, the measures can certainly be said to have stabilised financial markets as well as providing a reduction in borrowing costs for banks and sovereigns across the Eurozone.[16]

Recent Monetary Policy Developments

At the recent Governing Council meeting in October, the ECB voted to maintain key policy interest rates at historic levels and their forward guidance indicated rates would remain at the current level for the foreseeable future, more specifically past the duration of the current asset purchase programme.[17] However, in a first move towards weaning the European economy off the extensive monetary stimulus, in relation to the APP, the ECB indicated a reduction in the level of net asset purchases from the current €60 billion per month to €30 billion per month out to end September 2018. The adjustment to the asset purchase programme reflects the ECB's growing confidence in the gradual convergence of inflation rates towards the stated objective. This confidence is fuelled by the ongoing recovery as well as the increase in observed measures of underlying inflation. However, the ECB noted that domestic price pressures continued to be muted and the economic outlook as well as the path of inflation continue to require extensive monetary support. They also indicated a willingness to re-invigorate the APP and increase the size of the intervention if the outlook deteriorates or if financial conditions become inconsistent with a sustained adjustment in the inflation path.

FIGURE B   EUROZONE INFLATION (%)
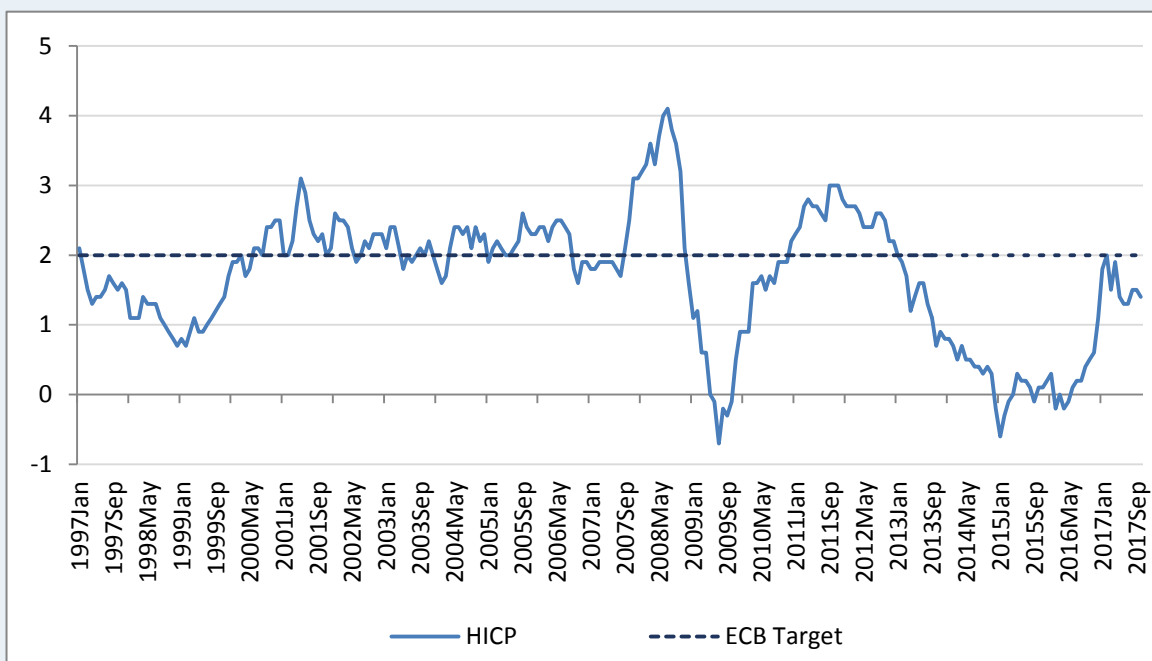
Sources: ECB Statistical Data Warehouse.

---

[16]   European Central Bank (2015) 'The Governing Council's Expanded Asset Purchase Programme', Box 1, *Monthly Bulletin*, Issue 1.
[17]   European Central Bank (2017), Press Release to Accompany Governing Council Briefing, 27/10/2017.

Given the 2017 moves by the US Federal Reserve to raise base policy rates and provide forward guidance for future rate rises, the focus must be on when the ECB will begin the process of further normalisation.

Exploring the consequences for Ireland

While it is not necessarily on the immediate horizon, it is noteworthy to explore what the consequences of any re-normalisation of monetary policy operations would be for Ireland. The effects of a reduction in non-standard instruments as well as increases in policy interest rates, by decreasing the volume of liquidity and increasing the cost of finance, are twofold: 1) they have an impact on sovereign and financial institution funding and lending and 2) they have an impact on real economic activity through households and firms.

In terms of the funding activity, the Irish State has been a beneficiary of the ECB asset purchase programme as this has reduced yields on government debt allowing a reduction in the cost of servicing the state liabilities. The low funding cost environment also provides financial institutions with the opportunity to lower their cost of financing – in particular on low yielding deposits – and increase their lending margins. If monetary policy was to become less accommodative and funding costs were to rise, this would inevitably increase the cost of financing to the State as well as increasing the cost of funds for financial institutions which have a negative influence on the public finances, as well as potentially act as a limiting factor on lending. From a fiscal policy perspective, this would limit the fiscal space available in future budgets. However it must be noted that the overall economy and the public finances are in a much better position currently so any reversal in rates may not lead to a significant increase in sovereign borrowing costs.

In regard to the real activity of households and enterprises, if any increase in the policy rate were to be passed through to households or firms this would ultimately act to reduce their consumption of goods and services as well as moderating the investment activity of firms. This would occur primarily though the cost of new loans but it would also increase the debt service burden of Irish households' and firms' existing liabilities. As both of these groups are highly indebted from the Irish crisis, any increase in the cost of credit could lead to higher levels of loan defaults. In particular for households with large debt overhangs from the crisis, any increase in rates could seriously affect their ability to service debts and in turn lower their consumption.

Recent research by Fasanios et al. (2017) shows that a 1 to 2 per cent interest rate rise in interest rates for Irish households reduces the disposable income after debt repayments of a typical borrower by between 2 and 4 per cent, with larger impacts for younger borrowers. Furthermore, Byrne et al. (2017) find a strong and highly statistically significant impact of interest rates on mortgage default in Ireland, with a 1 per cent reduction in instalment associated with a 5.8 per cent decrease in the likelihood of default over the following year. They show that Irish tracker mortgage borrowers (whose interest rate is a fixed margin over the ECB rate) have benefited from the pass-through of the reductions in the policy rate and this has provided an affordability boost to these borrowers which protected against default relative to other variable rate holders. As these borrowers are highly indebted, any significant rate reversal would inevitably put pressure on their ability to service loans. Given the

contribution of consumption to Irish growth currently, any such reduction in loan affordability may act as a drag on household spending.

Assessing the extent to which rate rises would be passed through is complicated in Ireland due to the current structure of the banking market. The interest rates on most mortgage, consumer and corporate loans in Ireland are variable in nature, thereby allowing financial institutions to pass through rate changes directly to households. The Central Bank's most recent Household Credit Market Report shows that approximately 86 per cent of mortgages are on a variable interest rate (either standard variable or tracker). While historically Irish banks would pass on policy rate changes (both positive and negative) to customers, since the beginning of 2009, this transmission channel has broken down and lending rates have remained stubbornly high in the face of ECB rate reductions. Figure C below clearly shows how the policy rate pass-through to loans across all types of borrower (consumer, mortgage and corporate) has broken down in recent years.

FIGURE C   ECB POLICY RATE PASS-THROUGH TO IRISH LENDING RATES (%)
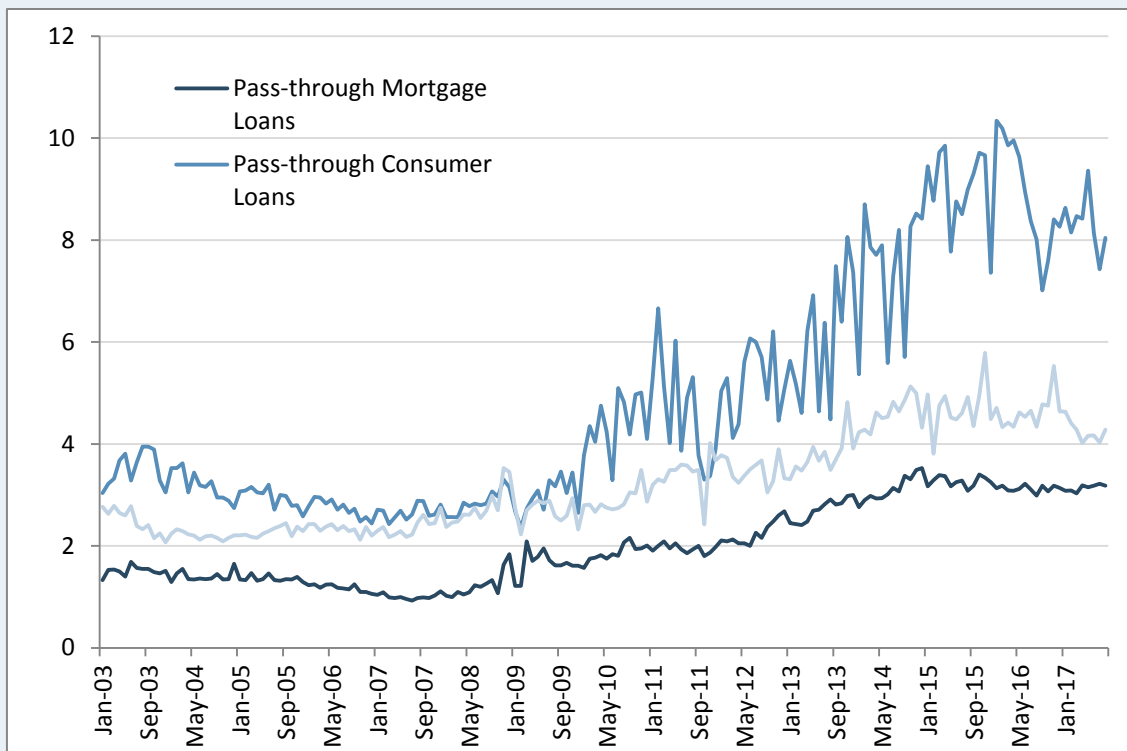
Sources: ECB and Central Bank of Ireland.

While a number of factors are undoubtedly contributing to the high lending rates in Ireland such as high credit risk, cost of funding and regulatory changes, and the high share of loss making tracker loans on the banks' books, the reduction in the degree of competition in the market is undoubtedly playing a role (Goggin et al., 2011). McQuinn and Morley (2015) find that the main reason for the breakdown in pass-through between the policy rate and the standard variable rate in Ireland is weak competition in the Irish financial sector.

Concluding remarks

The breakdown in the pass-through relationship between policy rates and market rates makes it difficult to predict the extent to which future policy rate increases will be passed through to new lending rates as well as to rates on existing loans. Financial institutions may, for example, elect not to pass on the full amount of policy rate increases if they are seeking to grow market share or are limited by political economy considerations. However, given the highly indebted nature of Irish households and firms, the already high interest rates by European standards, and the subdued competitive pressures in the Irish banking market, it is likely ECB policy rate normalisation would have a more negative effect on the Irish economy than would be the case for other European economies if a historical 1:1 pass-through is applied to already high lending rates. A continued policy focus on reducing sovereign and private sector indebtedness, as well as policies to increase competition in banking, can act to moderate the impact of any policy rate rises.
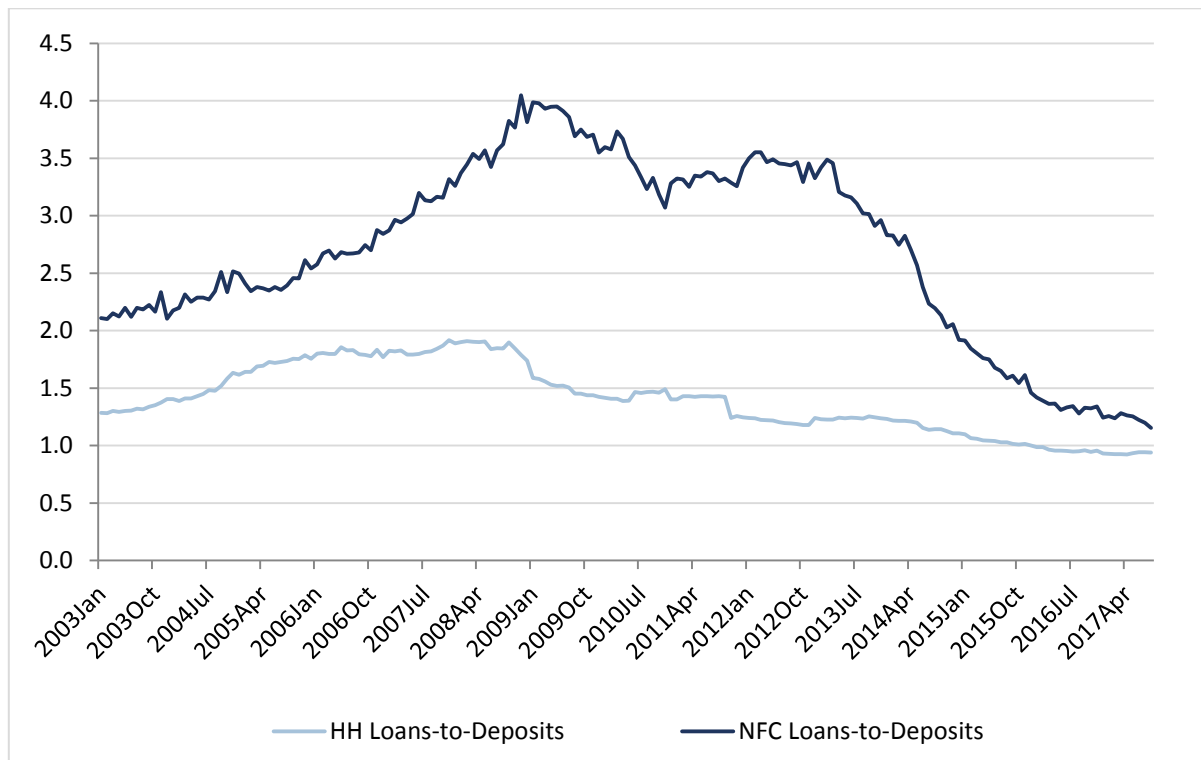
References

Byrne, D., R. Kelly and C. O'Toole (2017). 'How does monetary policy pass through affect mortgage default? Evidence from the Irish mortgage market', Research Technical Papers, 04/RT/17, Central Bank of Ireland.

Fasianos, A., R. Lydon and T. McIndoe-Calder (2017). 'The Balancing Act: Household Indebtedness Over the Lifecycle', Quarterly Bulletin Articles, April, Central Bank of Ireland.

Goggin, J., S. Holton, J. Kelly, R. Lydon and K. McQuinn (2012). 'The financial crisis and the pricing of interest rates in the Irish mortgage market: 2003-2011', No 01/RT/12, Research Technical Papers, Central Bank of Ireland.

McQuinn, K. and C. Morley (2015). 'Standard Variable Rate (SVR) Pass-Through in the Irish Mortgage Market: An Updated Assessment', ESRI *Research Note*.

This box was prepared by Conor O'Toole.

Household and firm deposits

In August 2017, household and non-financial corporate deposits stood at €100.2 billion and €41.2 billion respectively, up from €96.3 billion and €39.4 billion year-on-year. Loan-to-deposit ratios, presented in Figure 21, continued to be less than 1 for households indicating they are net funders of the Irish banking sector. Corporate deposits remain lower than loans indicating they are net borrowers from the Irish banking sector.

FIGURE 21   LOAN-TO-DEPOSIT RATIOS FOR IRISH HOUSEHOLDS AND FIRMS

Loan performance

The improvement in the Irish labour market, a reduction in the share of borrowers in negative equity and ongoing policy efforts towards loan modification has led to a marked fall in the share of primary dwelling houses (PDH) mortgage loans in arrears. As of Q2 2017, the share of loans in arrears stood at 7.1 per cent, down marginally on the previous quarter and down from 7.8 per cent year-on-year. This constitutes a total of 10.6 per cent of the balance of outstanding PDH mortgages. The default rate on buy-to-let (BTL) loans has also reduced but remains high. The improving economy should over time help arrears to fall to more normal levels. However, due to the high share of delinquent accounts in long-term arrears, continued policy action by the banking sector to deal with these legacies is required.

FIGURE 22   IRISH HOUSEHOLD MORTGAGE ACCOUNTS IN ARREARS BY TYPE OF LOAN (%)
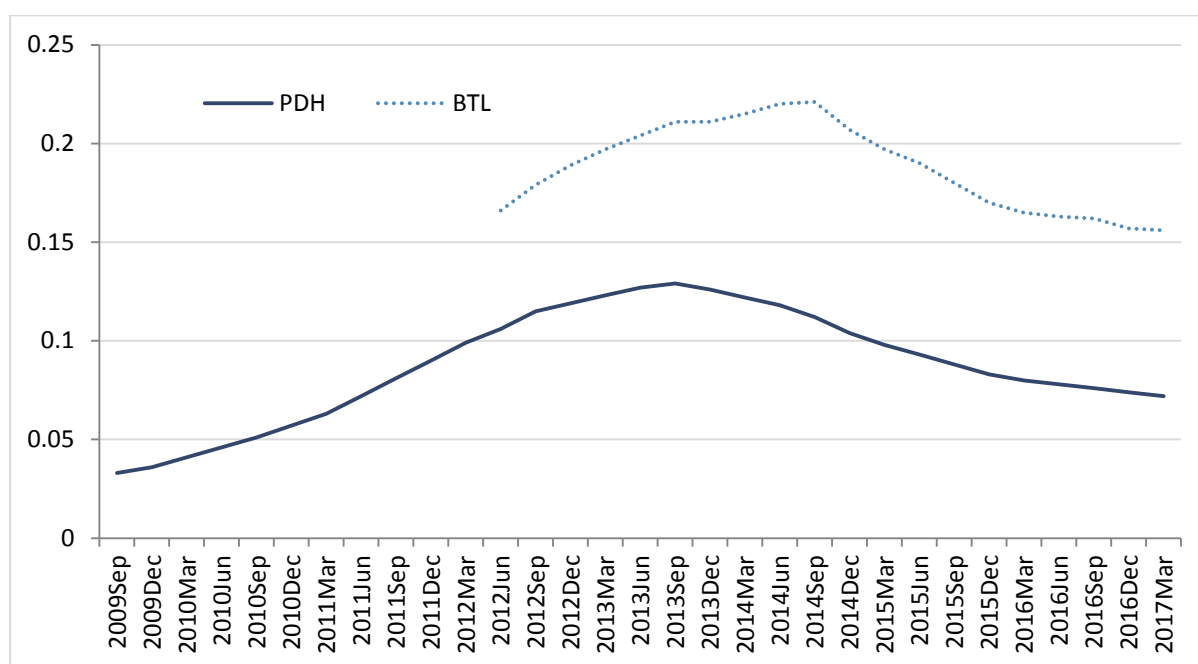
Source: Central Bank of Ireland, Mortgage Arrears Statistics.
Notes: PDH refers to principal dwelling houses loans while BTL are buy-to-let loans. Loans are defined in arrears if they are greater than 90 days past due on their payments.

Summary of financial conditions

While monetary conditions across the Eurozone have stabilised on foot of expansive monetary policy, Irish households and corporates continue to pay higher interest rates on mortgages and other loans. This acts as a drag on investment and consumption. In terms of new lending, mortgage activity is continuing to grow rapidly as activity in the property market increases. While the increasing share of borrowers taking high LTV loans is noteworthy, the protection of the Central Banks' strict, but well calibrated, macroprudential loan-to-income ratio should limit the build-up of vulnerabilities.

PRICES AND EARNINGS

The beginning of 2017 saw some upward pressure in the Consumer Price Index (CPI) yet these increases continue to remain well below historical levels. For the second half of the year, as can be seen in Figure 23, inflation rates for June and July were -0.4 and -0.2 per cent respectively. In the most recent data, year-on-year changes in the CPI yielded increases of 0.4 and 0.2 per cent in August and September 2017, accelerating to 0.6 per cent in October. The Harmonised Index of Consumer Prices (HICP) rose by 0.4 per cent in August and 0.2 per cent in September, most recently showing a third consecutive rise, compared to last year, of 0.5 per cent for October. The increase in overall prices in October 2017 was driven mainly by housing, water, electricity, gas and other fuels (up 3.1 per

cent from October 2016), restaurants and hotels (up 2.7 per cent from October 2016) and education (up 1.8 per cent from October 2016).

Deflationary factors include continued decreases in prices of clothing and footwear (down 4.7 per cent year-on-year to October 2017) and furnishings, household equipment and routine household maintenance (down 3.6 per cent year-on-year to October 2017). Prices for recreation and culture as well as prices for food and non-alcoholic beverages both fell by 1.2 per cent.

FIGURE 23   ANNUAL GROWTH IN INFLATION (%)
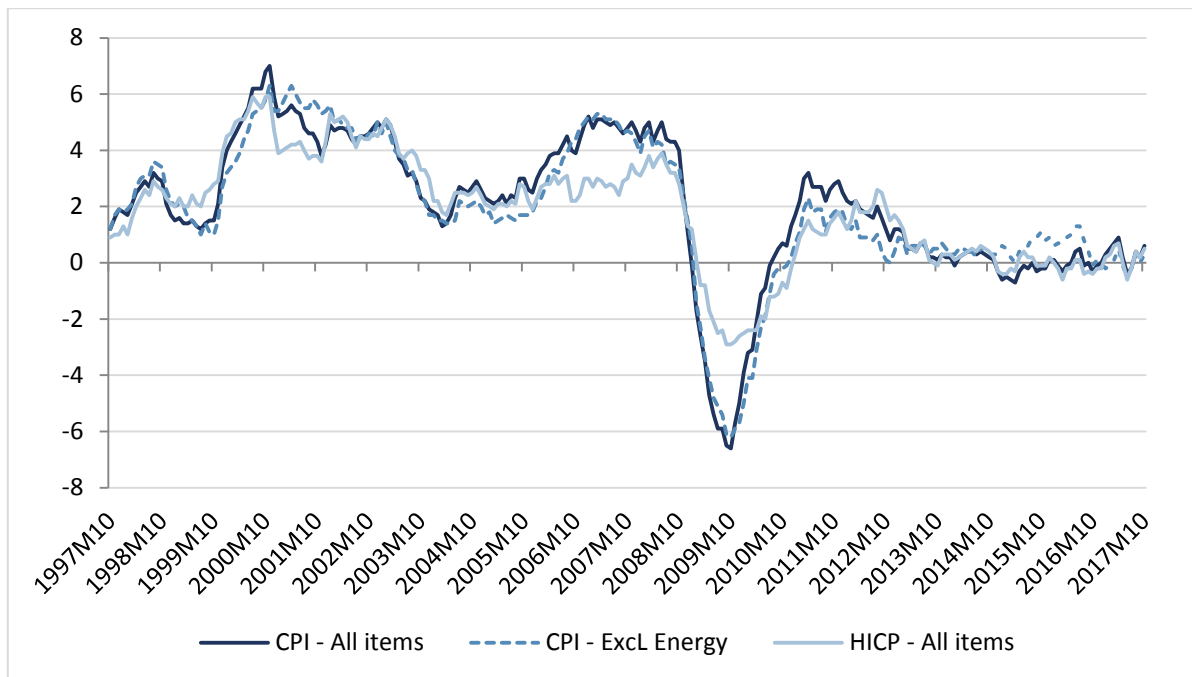
Source: Central Statistics Office.

The underlying trends in the CPI (Figure 24) have been steady for some time with goods contributing negatively to the overall inflation rate since early in 2013 while the services component continues to exert a positive effect on inflation. If we examine the CPI of goods in particular, prices have fallen to a level not observed since February 2000. For the most part, this trend is continuing in 2017 but has weakened slightly. Should this trend persist, goods prices will continue to exert further downward pressure on the CPI over the short term.

FIGURE 24   DECOMPOSITION OF ANNUAL (%) CPI GROWTH INTO GOODS AND SERVICES GROWTH
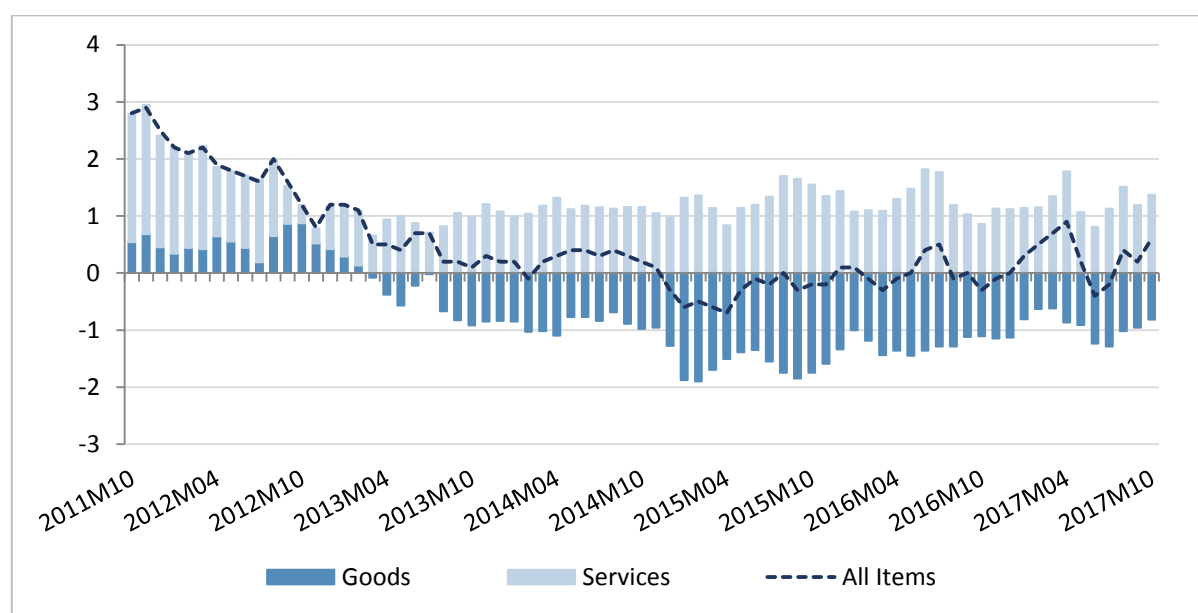
Second quarter earnings data from the CSO show that seasonally-adjusted Average Hourly Earnings increased by 0.5 per cent compared to the previous quarter. On an annual basis, earnings increased by 2.2 per cent up to €22.41. The largest increase, seen in Q2 2017, was observed in the administration and support service sector rising by 5.1 per cent compared to the previous year. Other notable increases occurred in the professional, scientific and technical as well as the wholesale and retail trade sectors, earnings per hour rising by 3.7 per cent and 3.5 per cent respectively. This is consistent with the growing demand for labour in these sectors (Figure 25).

**FIGURE 25   TRENDS IN AVERAGE EARNINGS PER WEEK AND PER MONTH (€)**
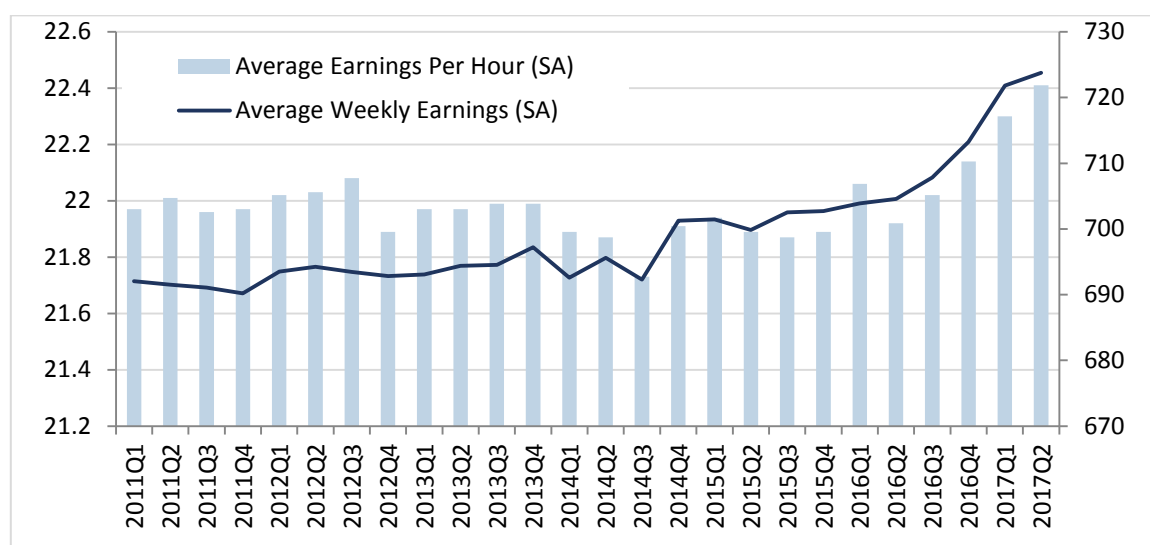
As economic activity in the broader economy has recovered, pressures are beginning to appear in the labour market, reflected in accelerating rates of average earnings growth. Since Q2 2016, rising measures of average earnings per hour and the average weekly earnings have hastened, pointing towards improved households earnings. As of Q2 2017, the average weekly earnings, on a seasonally-adjusted basis, stood at €723.74; this represents a modest increase from €721.74 in Q1 2017.

The highest weekly wages in Q2 2017 were in financial services and ICT sectors at €1,114 and €1,090 respectively. On an annualised basis, wage growth appears to be moderate in Q2 2017 in the manufacturing sector with growth of 0.5 per cent, while construction earnings fell -3.3 per cent on an annualised basis. The fall in construction wages may reflect compositional issues. Earnings in the wholesale and retail sector grew by 3.3 per cent on an annualised basis, up from 1.9 per cent in the previous quarter. Figure 26 presents a four-quarter moving average growth rate by sector to display the trends over time in earnings pressures. There is a positive trend overall with earnings increasing by 1.9 per cent in Q2 2017. Public sector earnings are also increasing on an annualised basis. This partially reflects a base effect as there was a marked decline in earnings in 2016. The decline in 2016 may also be due to compositional issues in the public sector workforce.

FIGURE 26   FOUR-QUARTER MOVING AVERAGE GROWTH BY SECTOR IN WEEKLY EARNINGS
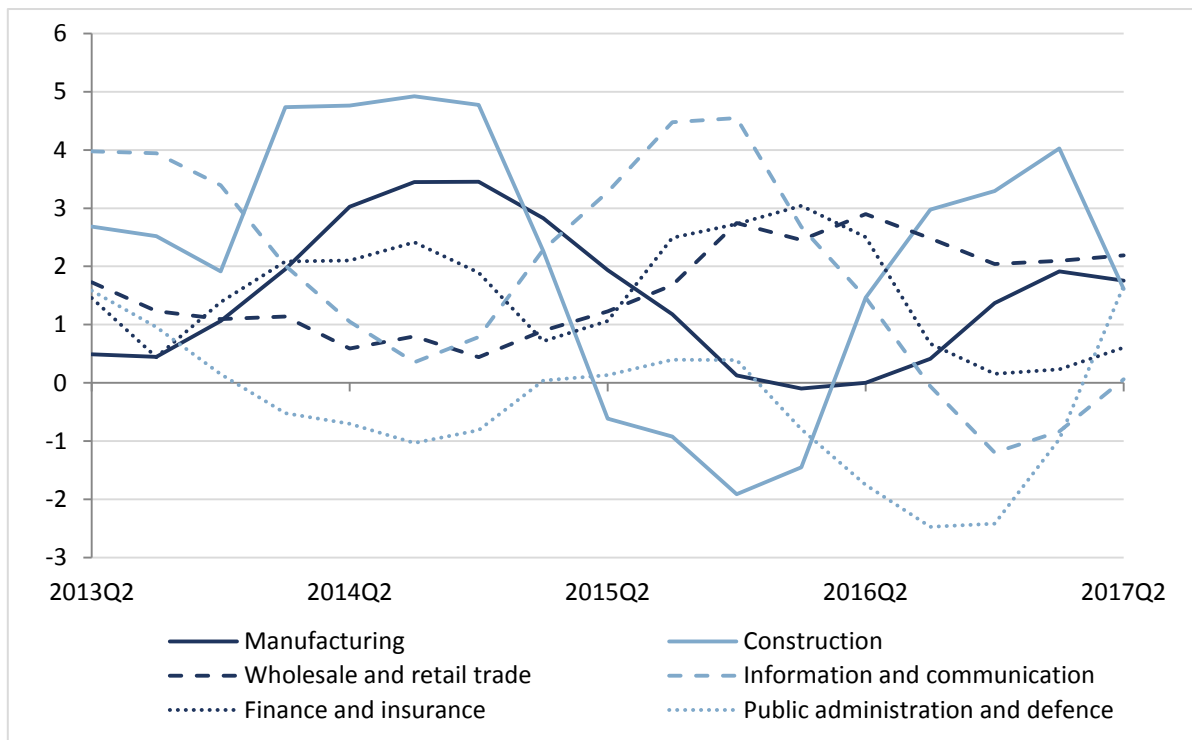
Source: Central Statistics Office.

Overall, trends in recent data indicate that some price and earnings pressures are emerging. Consumer prices have recently begun to increase, while housing costs are continuing to rise. However, the global economy still faces low inflation rates mainly due to extremely low oil prices since 2014. Overall, therefore, we expect consumer prices to increase moderately by 0.6 per cent this year and 1.4 per cent in 2018. We forecast earnings to rise by 2.8 per cent this year and 3 per cent in 2018. As wages increase, it will be important to ensure that the Irish economy does not witness a deterioration in competitiveness akin to that experienced prior to 2007.

TABLE 2   INFLATION MEASURES

|	2015	2016	2017	2018
	Annual % Change			
CPI	-0.3	0	0.6	1.4
Growth in Average Hourly Earnings	2.2	2.5	2.8	3.0

Sources: Central Statistics Office and ESRI forecasts.

DEMAND

Household Sector Consumption

Strong growth in domestic consumption has been one of the main contributions to the recent expansion in economic activity. The most up-to-date quarterly National Accounts show that on an annualised basis, personal consumption expenditure increased by 1.3 per cent in Quarter 2, 2017, down from 2.7 per cent in the previous quarter. On a quarter-on-quarter basis, consumption spending fell marginally. The reduction in the growth rate may be due to the increased number of cars imported at a lower cost from the UK. We discuss this in more detail below in the context of the retail sales data. Despite this development, we still see improvements in household balance sheets, the persistent fall in unemployment and modest increases in disposable incomes, as providing a supportive environment for further consumption growth.

FIGURE 27   QUARTERLY PERSONAL CONSUMPTION ON GOODS AND SERVICES – CONSTANT MARKET PRICES AND SEASONALLY ADJUSTED
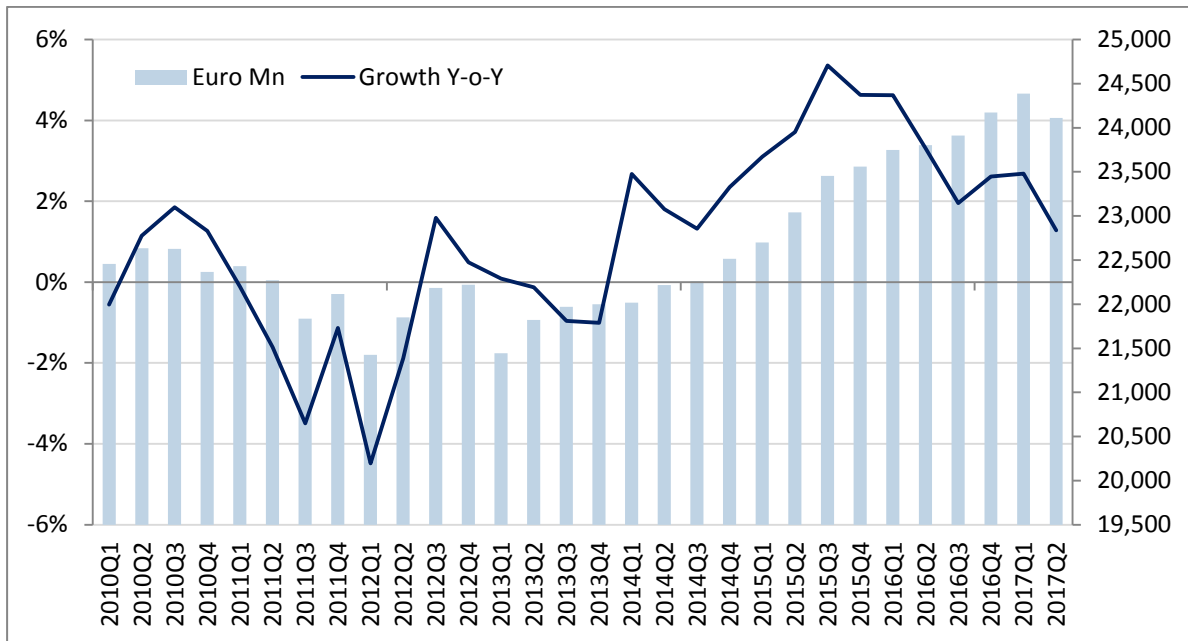
Source: Central Statistics Office.

Developments in retail sales act as important leading indicators for household consumption. These various retail sale indices provide a detailed snapshot of exactly which goods and services households are purchasing and identifies where overall growth is stemming from. Table 3 presents retail sales for selected items in terms of the annual growth rate in the volume of sales. For all businesses, retail sales are up 1.2 per cent in the year to September 2017. However, this reasonably modest increase masks considerable variation across different types of goods.

TABLE 3   ANNUAL GROWTH IN SELECT RETAIL SALES (VOLUME) ITEMS (JULY 2017)

Retail Business – NACE REV 2	Volume of Sales
	Annual % change
Motor trades	-19.7
Non-specialised stores (excluding department stores)	6.9
Department stores	5.5
Clothing, Footwear and Textiles	2.7
Furniture and lighting	16.1
All businesses excl. motor trades	7.8
All businesses	1.2

Source: Central Statistics Office.

The decline in retail sales for motor cars is impacted by the falling value of Sterling which cheapens imported cars from the UK. According to recent SIMI

data, 44,503 second-hand cars from the UK were purchased by Irish citizens for the first half of 2017, representing a 45.9 per cent rise year-on-year on the numbers purchased in 2016. Considering retail sales without motor trade, we see a rapid increase in non-specialised stores (up 6.9 per cent year-on-year) and furniture and lighting (up 16.1 per cent year-on-year). The recovery in the housing market would appear to be feeding in to the expenditure on furniture and lighting. The overall trends in retails sales are documented in Figure 28. This chart presents a three-month rolling average of retail sales for total sales, sales excluding the motor trade, and for household equipment. Of note is the high growth in household equipment (12.6 per cent in September) and the continued strength of all retail sales excluding the motor trade (7.3 per cent in September).

FIGURE 28   AVERAGE GROWTH IN RETAIL SALES INDEX VOLUME ADJUSTED (BASE 2005 = 100)
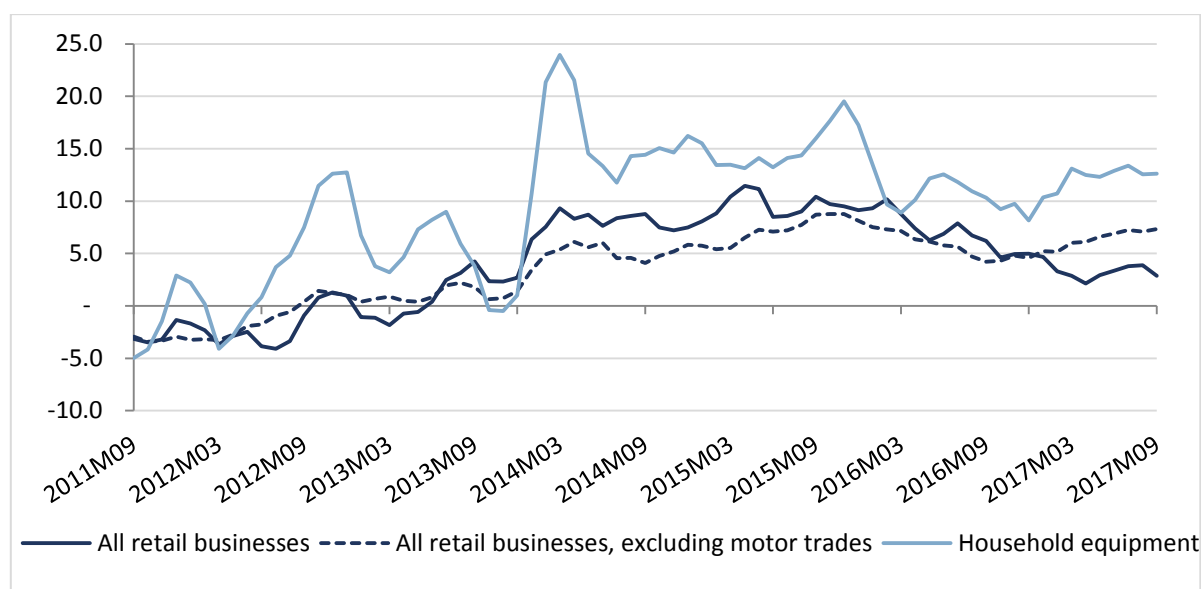
Source: Central Statistics Office.

Figure 29 presents the ESRI/KBC Consumer Sentiment Index which tracks the monthly views of households on their current and future economic perspectives. While international considerations were likely to have contributed to a weakening of consumer sentiment in mid to late 2016, from February to October 2017 the monthly index followed an overall positive trend. In September 2017 the Index reached its highest level (118.6 index points) since February last year, while declining marginally in October (118.0 index points).

FIGURE 29   **ESRI/KBC CONSUMER SENTIMENT INDICATORS**
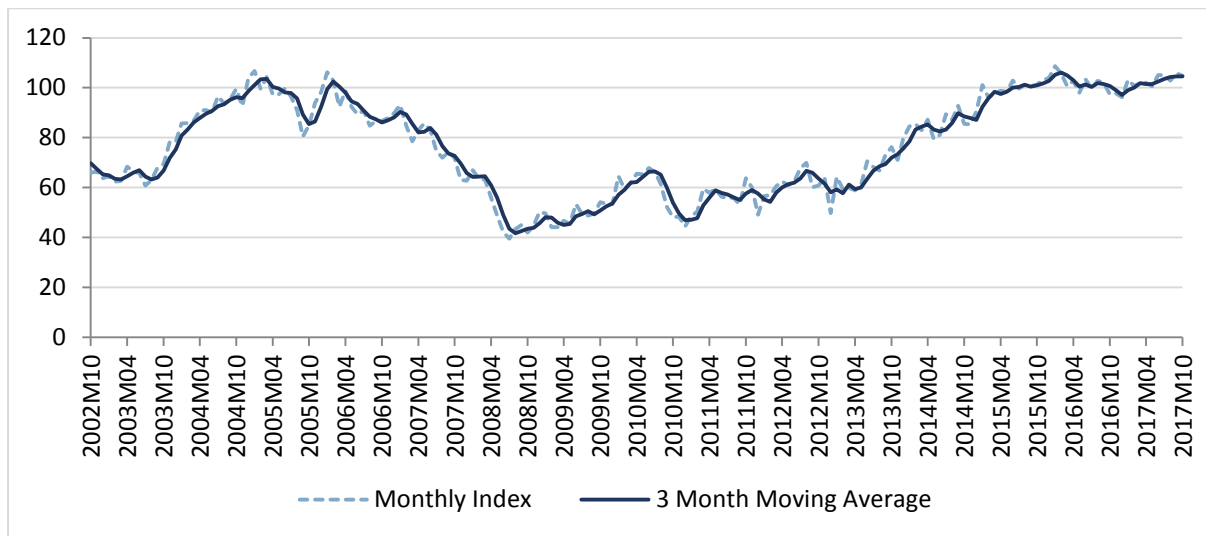
Source: ESRI/KBC.

Irish household net worth continues to grow into Quarter 2, 2017 as loan repayments reduce the stock of outstanding liabilities and rising asset prices raise the total value of domestic balance sheets. The trend in the overall position of Irish households' net worth, which is the stock of financial and housing assets minus the stock of liabilities, is presented in Figure 30. The financial crisis considerably decreased net worth as housing assets fell sharply in value. The recovery in the housing market has contributed to a rise in housing wealth which has improved overall net worth. Financial assets have grown modestly since 2010. As households continue to pay down debt balances, liabilities continue to decline.

FIGURE 30   **IRISH HOUSEHOLD NET WORTH (€ BILLION)**
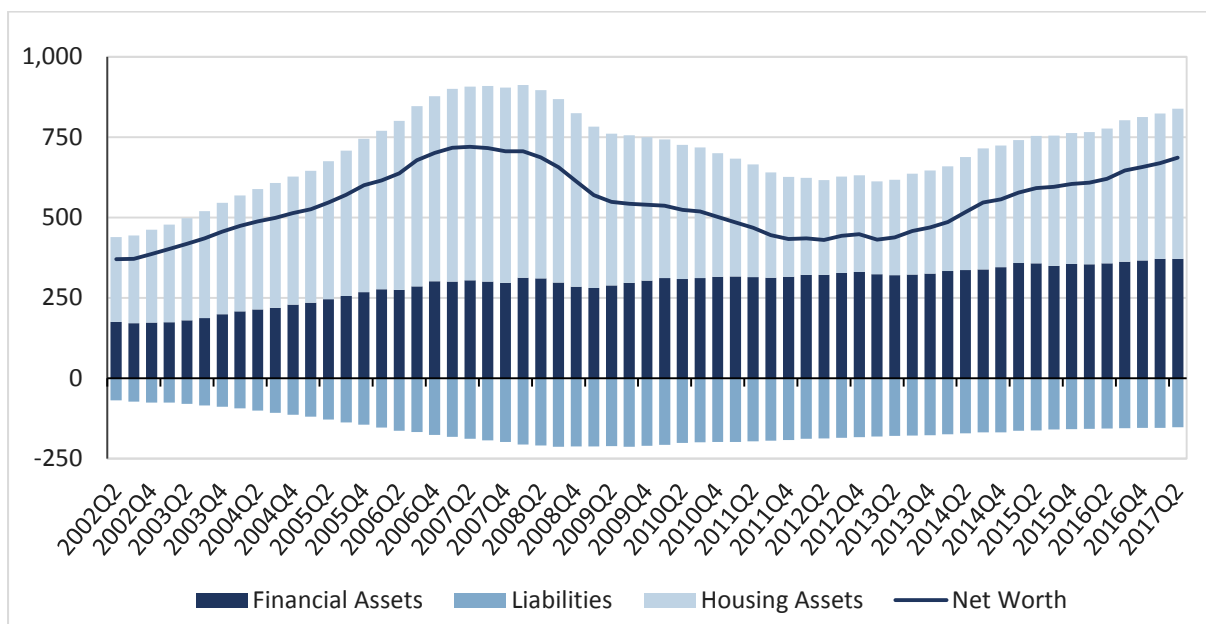

Source: Central Bank of Ireland, Quarterly Financial Accounts.

In general, we expect household consumption to continue to be a strong determinant of domestic economic activity as household balance sheets are repaired through deleveraging and as Irish income levels rise modestly. We therefore expect consumption expenditure to grow by 2.8 per cent this year and 2.9 per cent in 2018.

Property market developments

The rate of increase in national property prices has been rising since the second half of 2016. This trend saw double digit growth rates in May of this year. Figure 31 plots the year-on-year changes in residential property prices. The data are split out by property type as well as for the overall index. In August and September 2017 property prices were up year-on-year by 11.8 per cent and 12.8 per cent, the fastest growth rate in over two years. As noted in McQuinn (2017), movements in house prices can be explained by improving economic conditions such as falling unemployment rates, an accommodative monetary policy regime and acute shortages of housing supply. Nevertheless, property prices remain 23.7 per cent lower than the peak reached in February 2007.

FIGURE 31 ANNUAL HOUSE PRICE GROWTH (%)
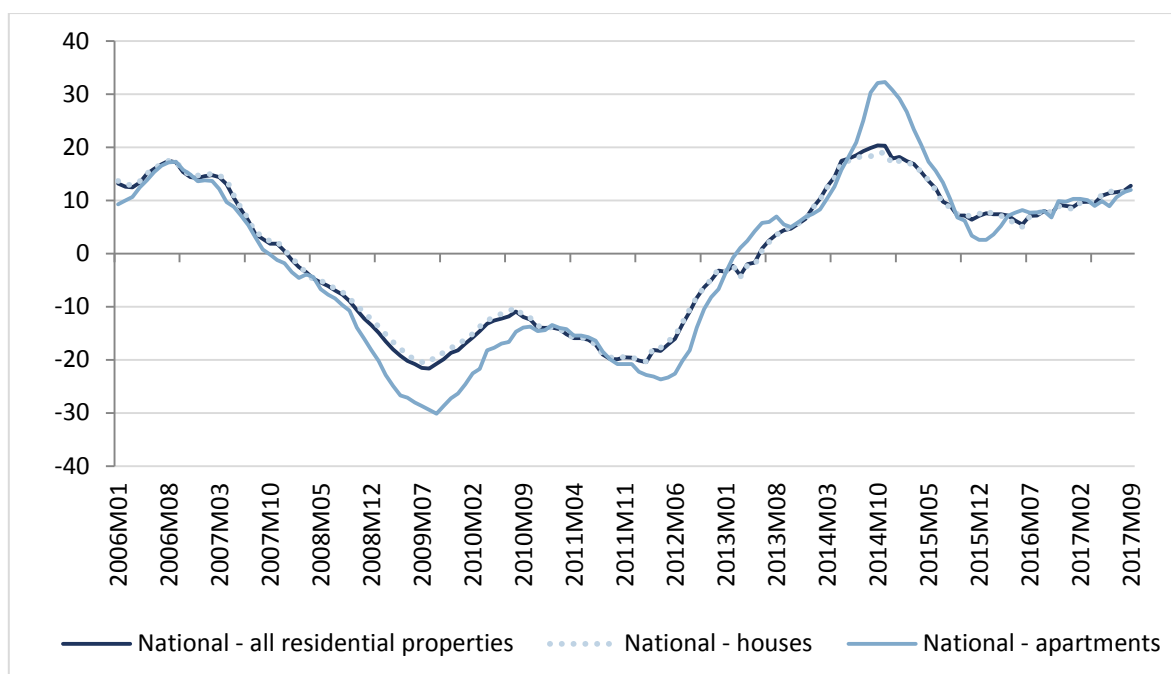
Source: Central Statistics Office.

House price developments are presented in Figure 32 on a geographic basis splitting out Dublin and the rest of Ireland. As housing pressures are most acute in the capital such a dichotomy provides insight into relative trends. It is clear that

the deceleration of price growth in early 2015 was much more acute in Dublin than outside the capital. Among other factors, this potentially reflects the fact that the Central Bank's macroprudential rules in the housing market were more binding for Dublin borrowers who needed to use high loan-to-value and loan-to-income ratios to purchase housing. Kinghan et al. (2017) provide some recent evidence of this. Furthermore, the looser loan-to-income cap for first time buyers purchasing properties less than €220,000 would have meant stricter limits in Dublin where average prices were higher. Prices in the rest of the country have been growing very rapidly, posting double digit growth every month with one exception since July 2016. Prices in Dublin grew at 12.2 per cent in the year to September 2017 suggesting an acceleration in price increases in the capital where demand still greatly exceeds supply.

FIGURE 32   ANNUAL HOUSE PRICE GROWTH BY REGION (%)
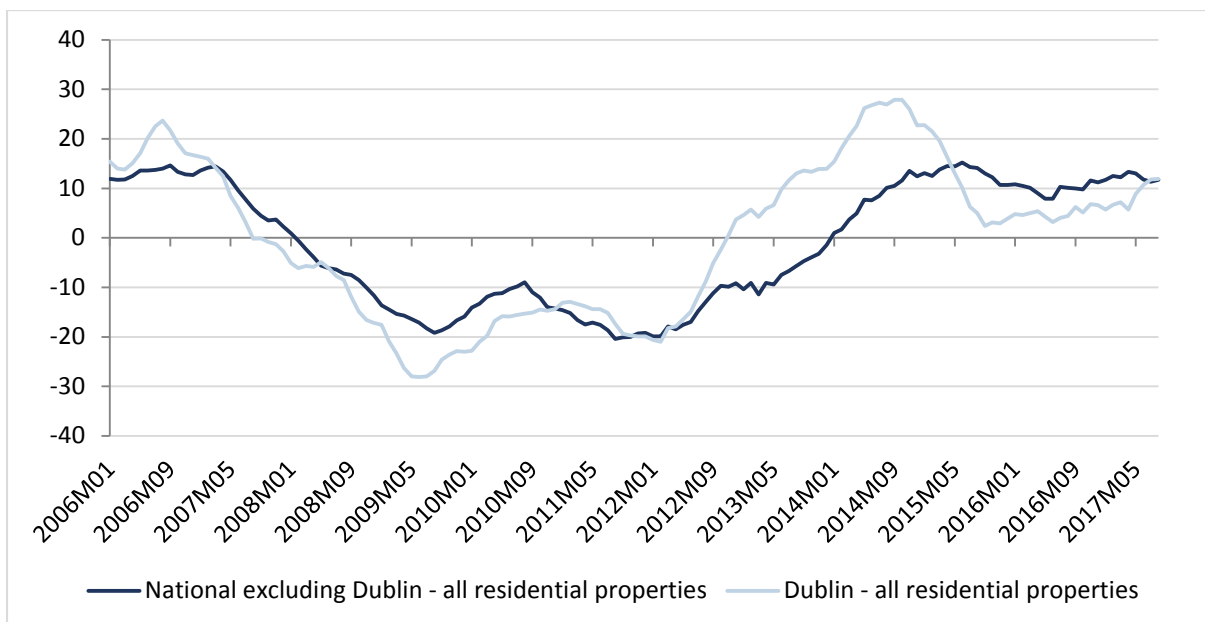
Source: Central Statistics Office.

House price expectations can be gleaned from Figure 33 which plots the latest ESRI/AIB Housing Market Indicator. The index, which comprises questions on attitudes to buying and selling property as well as expectations of house prices 12 months from now, has started to trend upwards from the mid-point of 2016. This growth continued into Quarter 3 of 2017, where a growing share of households believe the timing for selling a house has improved and expect house prices to increase further over the next 12 months.

FIGURE 33   ESRI/AIB HOUSE PRICE INDEX (BASE JULY 2013 = 100)
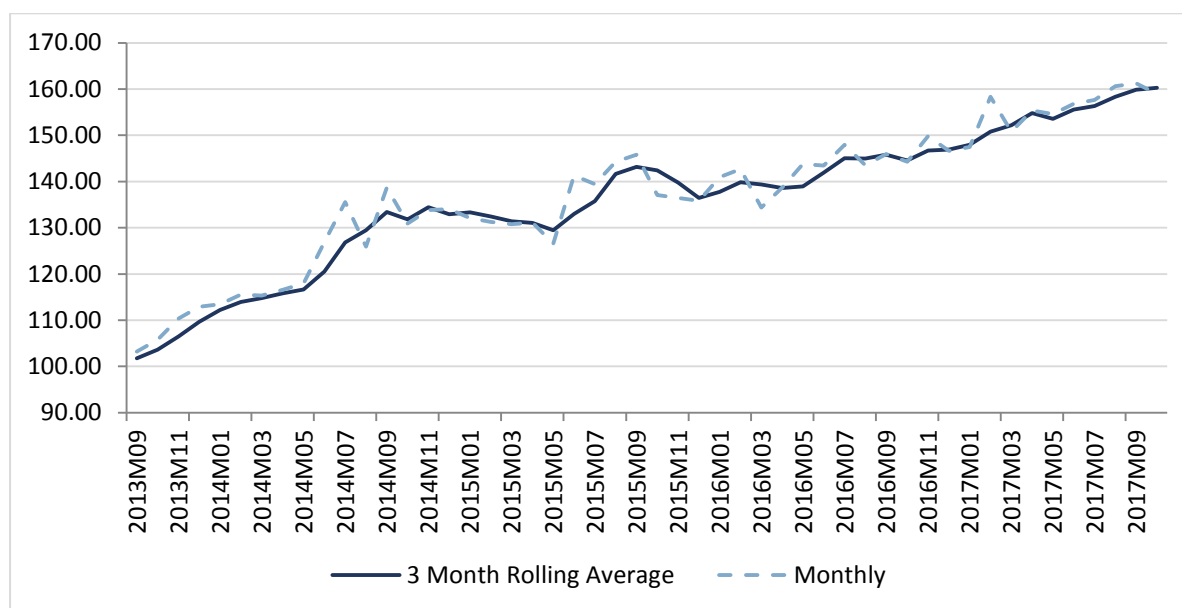
Source: Central Statistics Office.

Irish house prices rose at the fifth fastest pace among OECD countries in the second quarter of 2017, based on year-on-year growth. According to the OECD House Price Index (Figure 34), house prices in Ireland grew at a similar growth rate as in Australia (8.6 per cent) with only Iceland (25.7 per cent), Canada (12.6 per cent) and Czech Republic (10.6 per cent) growing faster. This is well above the average growth rates for the entire OECD (3.7 per cent) and Euro Area (2.7 per cent) and contrasts with housing market developments in countries such as Greece (-2.2 per cent), Italy (-1.3 per cent) and South Korea (-0.5 per cent). In a paper featured in this *Commentary*, McQuinn (2017) analyses the current state of Irish house prices. Estimates of the paper suggest that real Irish house prices are likely to grow by 20 per cent between 2017 and 2020.

FIGURE 34   OECD TOP TEN FASTEST GROWING HOUSING MARKETS, % GROWTH

2016Q2-2017Q2		2015Q2-2017Q2	
Iceland	25.7%	Iceland	32.7%
Canada	12.6%	Canada	21.6%
Czech Rep.	10.6%	Hungary	20.2%
Australia	8.6%	New Zealand	18.7%
Ireland	8.6%	Czech Rep.	17.0%
New Zealand	6.9%	Latvia	15.6%
Portugal	6.7%	Sweden	14.9%
Sweden	6.5%	Ireland	13.8%
Latvia	6.0%	Israel	13.1%
Netherlands	5.8%	Portugal	12.3%
OECD	3.7%	OECD	8.1%
Euro area	2.7%	Euro area	5.8%
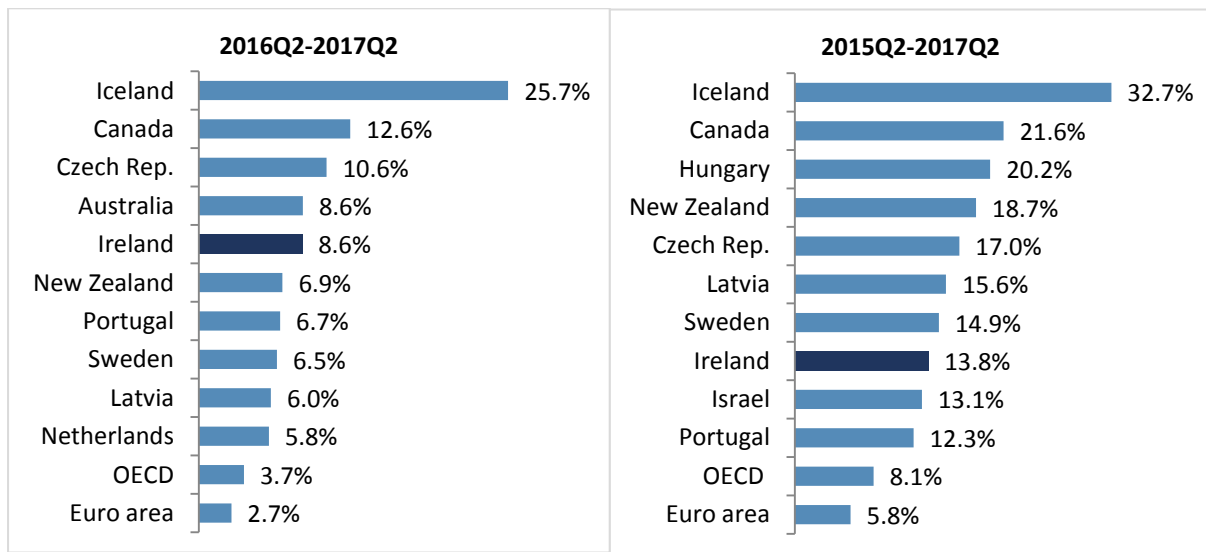
Source: OECD.

While it is clear that excess demand in the Irish housing market is leading to rapid increases in house prices, similar challenges are also being faced in the rental market where rents are also growing rapidly. The latest data from the RTB Rental Index confirm that rents nationally continue to increase at a significant rate. Rents in Quarter 2, 2017, nationally, increased by 7 per cent on an annual basis continuing the rise that has been observed since early 2013, as can be seen from Figure 35. While it does appear that there is some moderation in the rate of growth in Dublin, rents are now above their pre-crisis peak experienced in Quarter 4, 2007. Pressures in the rental market will continue to reduce housing affordability.

FIGURE 35   RESIDENTIAL TENANCIES BOARD NATIONAL RENTAL INDEX (BASE Q3 2007 = 100), ANNUAL PERCENTAGE CHANGE
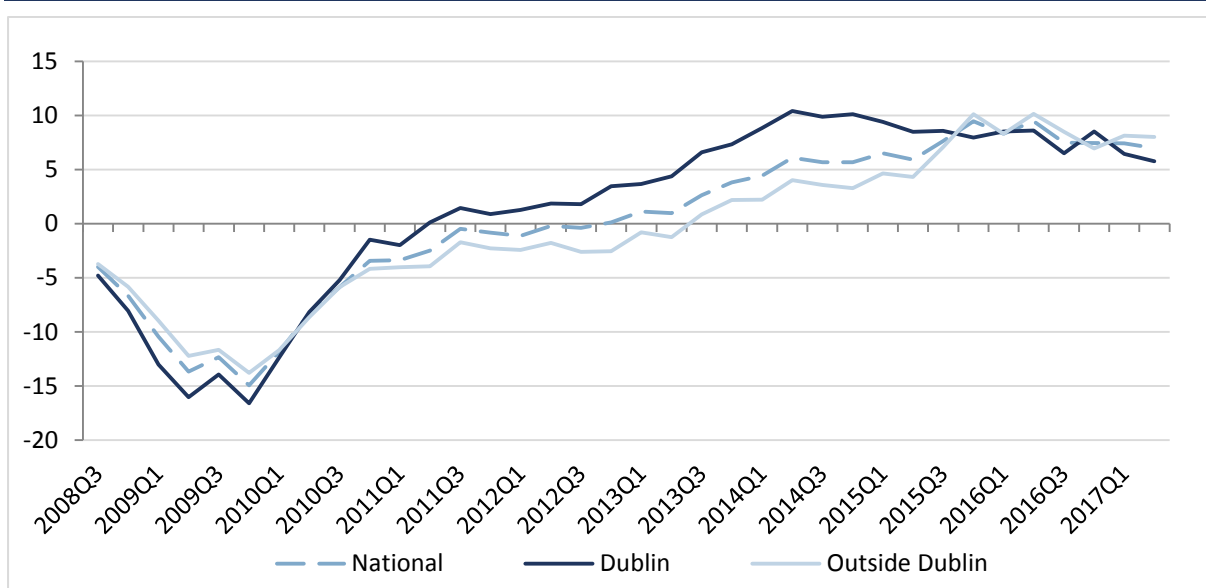

Sources: Residential Tenancies Board (RTB).

As McQuinn (2017) notes, along with demand-side pressures, price pressures are also due to the acute shortage of housing supply. Duffy et al. (2016)[18] note that approximately 35,000 units are needed per annum to keep up with demand due to demographics and market fundamentals. Given that supply needs have not been satisfied for several years, the number of units needs to be exceeded in the short run in order for supply to 'catch up'.

The ESB connections data can be used as a proxy for completions; this indicator shows the number of homes that become connected to the electricity grid and thus it also includes unfinished housing developments which have been reactivated. In 2016 less than 15,000 completions were supplied and from January to September 2017 about 13,500 units became available in the market. However, it does appear that housing supply is finally beginning to respond to increased demand. In every month of 2017 housing completions were higher than in the same month over the previous two years. With continued demand-side pressures and a recovering financial sector leading to better access to credit, we expect completions to continue to rise. We forecast that 19,500 units will be finalised in 2017, with the number increasing to 24,000 units in 2018.

FIGURE 36   MONTHLY LEVELS OF HOUSING SUPPLY
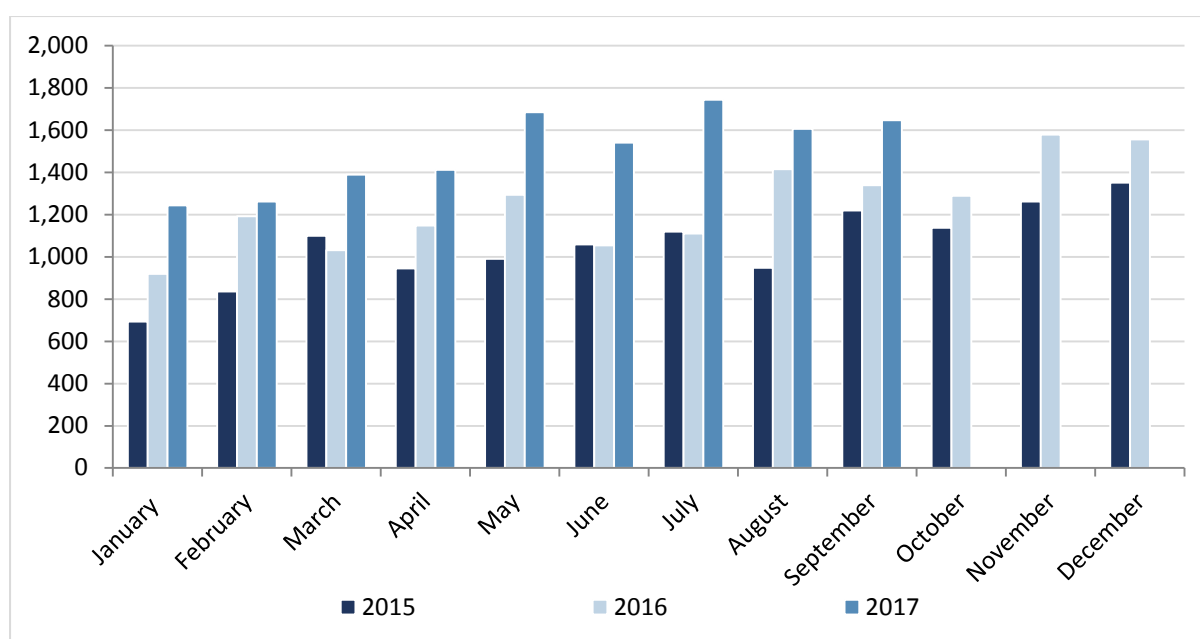
*Sources:*   Department of Housing Planning and Local Government and *QEC* calculations.

---

[18]   Duffy, D., N. McInerney and K. McQuinn (2016). 'Macroprudential policy in a recovering property market: too much too soon?' *International Journal of Housing Policy*, Vol. 16, Issue 4, pp. 491-523.

SUPPLY

Investment

The recent volatility in the National Accounts, which are driven by company specific strategies and globalisation effects, has made it difficult to understand patterns in Irish capital investments. Total Investment as measured by Gross Fixed Capital Formation (GFCF) increased in 2014, 2015, and 2016 as shown by Figure 37. In 2016, annual growth was 61 per cent, up from 28 per cent in 2015. Quarterly growth rates display even more volatility with intangible assets varying considerably quarter-on-quarter. The latest quarterly data available, Q2 2017, indicate a fall in investment on a quarter-on-quarter basis. However, this is driven mainly by a reduction in the intangible assets category.

FIGURE 37   COMPONENTS OF INVESTMENT AS A PROPORTION OF TOTAL (€MILLION)
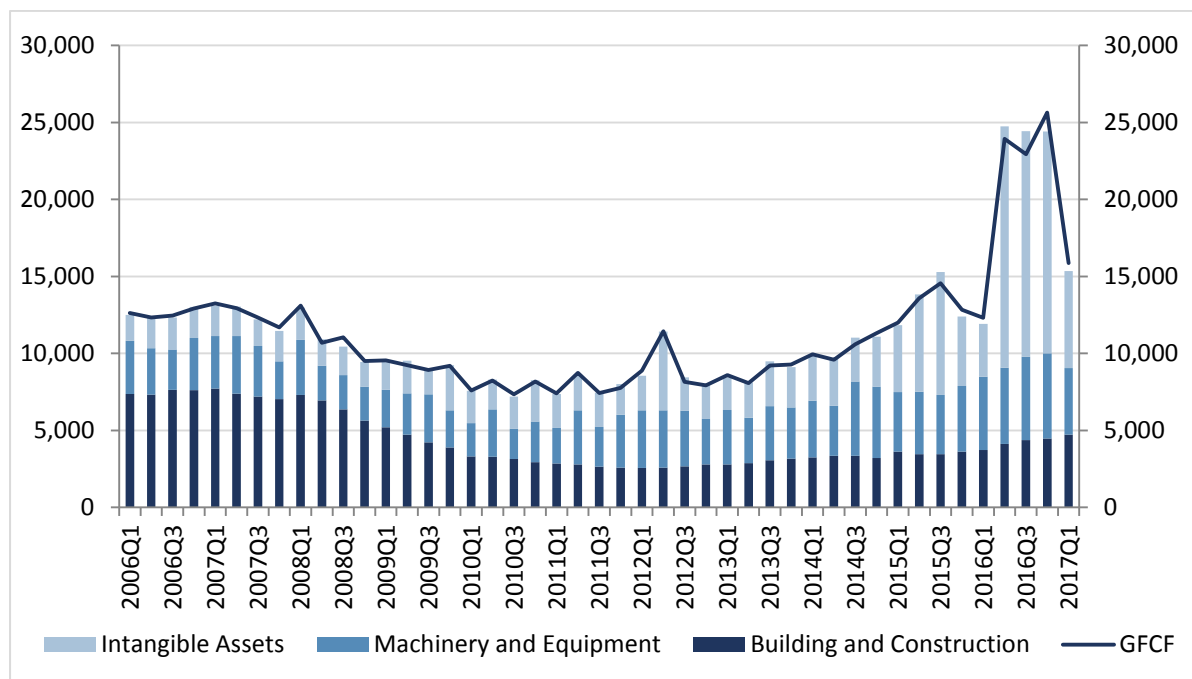
Sources: Central Statistics Office, Quarterly National Accounts Data.

To address the globalisation and multinational company distortions to investment in Ireland, the CSO have provided an adjusted series for Gross Fixed Capital Formation on a quarterly basis, modified GFCF, which adjusts for the effects of trade in aircraft by aircraft leasing companies and the importation of intellectual property. The adjusted figures overall and the figures for building and construction, intangibles and machinery and equipment are presented in Figure 38. It can be seen that the adjusted data display a much more stable growth pattern with an upward trend evident from mid-2015 onwards. For the year 2016, the overall level of GFCF is on average 380 per cent higher than the modified figures for intangibles, and 50 per cent higher for machinery and

investment. Building and construction is unchanged in the modified accounts. On an annualised basis, overall modified investment is up 23 per cent in the year to Q1 2017. This is composed of an increase of 27 per cent in buildings and construction, a 14 per cent decline in machinery and equipment and a 73 per cent increase in intangibles.

FIGURE 38   MODIFIED GROSS DOMESTIC CAPITAL FORMATION (€MILLION)
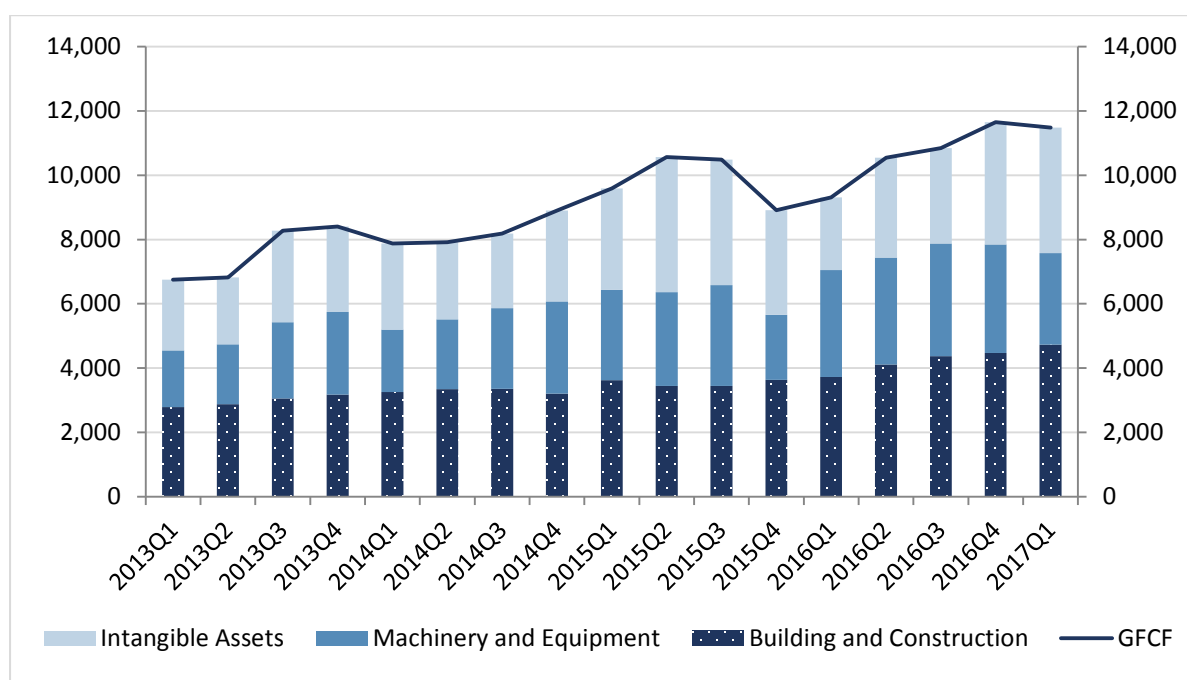
Source: Eurostat Countries included in comparison are: BE, BG, CZ, DK, DE, EE, IE, GR, ES, FR, HR (Croatia), IT, CY, LT, LV, HU, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK.

While the modified figures somewhat address the national accounting challenges posed by certain multinationals' investment activity, they do not provide a guide for the investment activity undertaken by Irish companies. Exploring the investment patterns of domestic enterprises is important as their behaviour is linked to underlying developments in the Irish economy and are likely to be more responsive to different economic shocks such as Brexit. To attempt to get a better understanding of the investment flows in this regard, Figure 39 presents the change in capital acquisitions in industry in Ireland from 2009-2016.

FIGURE 39   PERCENTAGE CHANGE IN CAPITAL ACQUISITIONS IN INDUSTRY (%)
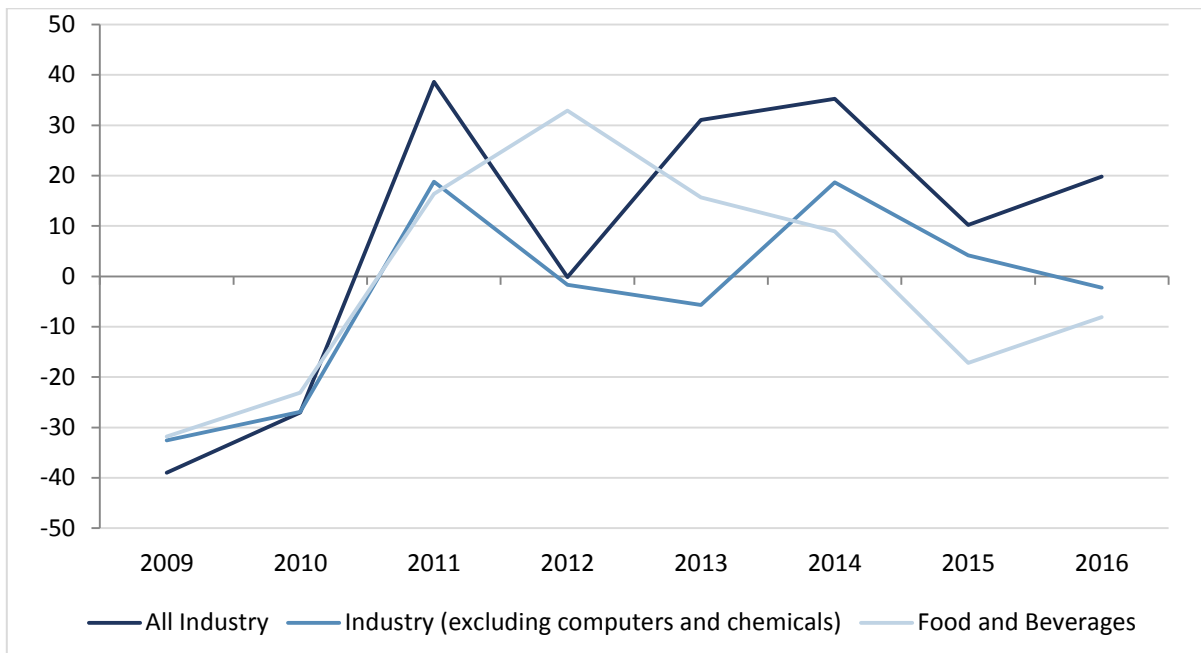
While it can be seen that investment for all industrial firms has been growing steadily from 2012, if the computer, chemical and pharma sectors are excluded, a declining growth rate is evident from 2014. In fact industrial investment actually declined marginally in 2016 excluding these sectors. An even closer understanding into what is happening domestically can be gleaned from considering investment in the food and beverages sector which is majority Irish-owned. This sector is also likely to be affected by Brexit as a considerable portion of agri-food exports would go to the UK. Lawless et al. (2017) show that just under 50 per cent of Irish food exports go to the UK. The trend in investment in the food and beverage sectors has been negative since 2014.

Over a longer-term perspective, falling investment in Irish industry represents a challenge in terms of maintaining capital-labour ratios and ensuring productivity growth. Indeed, in the credit constrained environment following the banking crisis is it likely that many firms have foregone investment over the past decade and delayed making replacements of machinery and equipment. Some important domestic-facing sectors in Ireland are operating at capital-labour ratios well below 2010 levels (Figure 40) including accommodation and food services, construction, transport and agriculture. These trends are masked when we consider the overall capital-labour ratios which are heavily influenced by the recent investment flows in multinational dominated sectors.

FIGURE 40   CAPITAL-LABOUR RATIOS FOR IRISH SECTORS
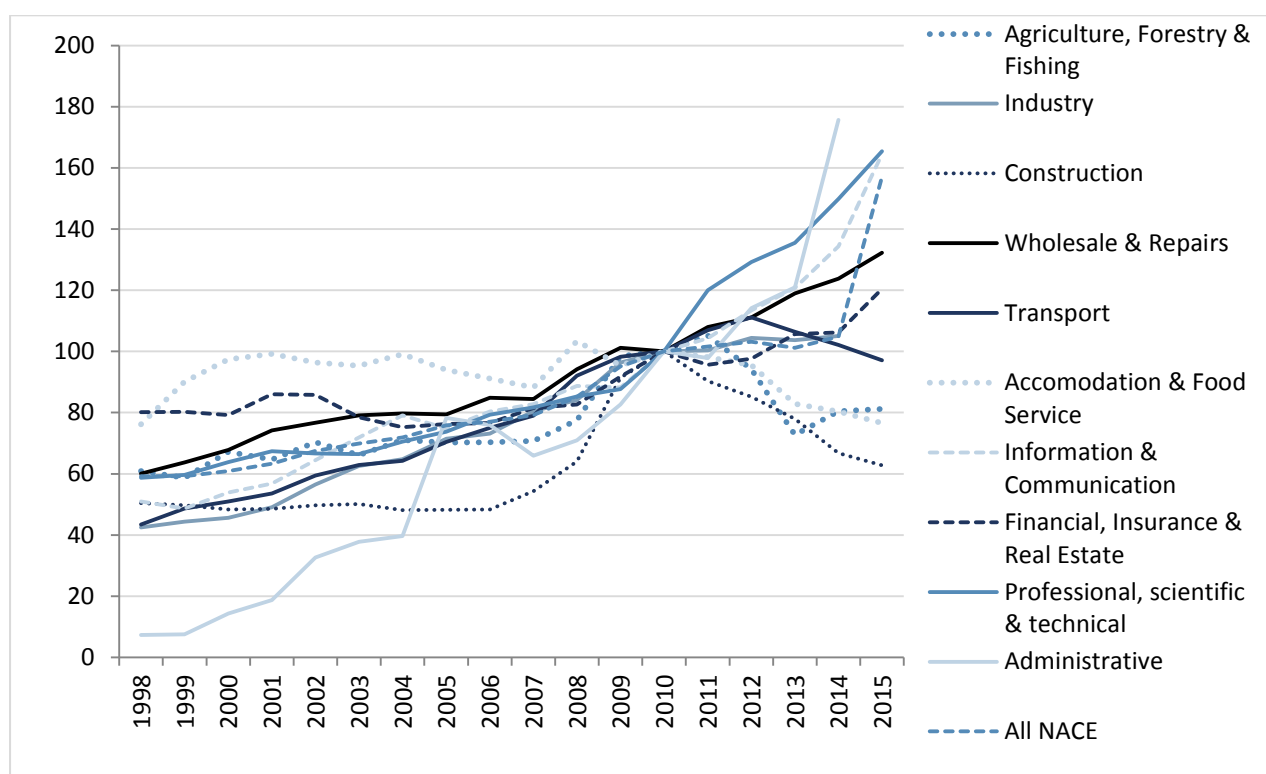
Source: Central Statistics Office, Quarterly National Accounts Data.

The low capital-labour ratios in indigenous sectors may hint at an investment gap which suggests that, as the economy continues to grow, these companies may increase investment spending. However, the uncertainty surrounding Brexit may give rise to some hesitancy in committing capital.

To provide some insight into the current plans of enterprises, the Markit Purchasing Managers' Index, provides another indicator of activity in the manufacturing, services and construction sectors. It is shown in Figure 41. A reading above 50 indicates an expansion and, in the first few months of 2017, we can see that the index is beginning to trend upwards for construction and remains well above 50 for manufacturing and services. The most recent data for August 2017 suggest the strength of the construction purchasing activity has increased marginally over that registered in July.

FIGURE 41   BUSINESS AND CONSTRUCTION PMI FOR IRELAND
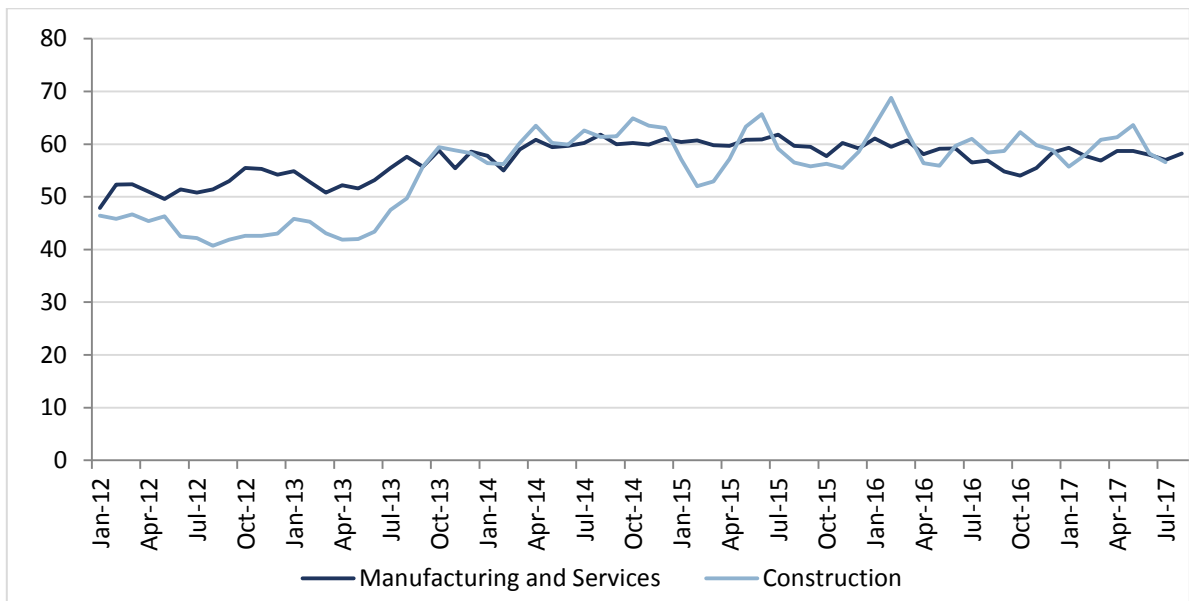
Source: Markit.

While some evidence exists of an investment gap in Ireland for domestic enterprises, the generalised level of uncertainty in the global environment and the ongoing Brexit discussions is potentially causing some headwinds for investment planning. This may be reflected in a weakening of the business outlook for purchasing activity as monitored by the Markit index presented in Figure 42. For both manufacturing and services activity the most recent June 2017 data indicate a softening of activity.

FIGURE 42   FORWARD-LOOKING INDICATORS FOR PURCHASING ACTIVITY
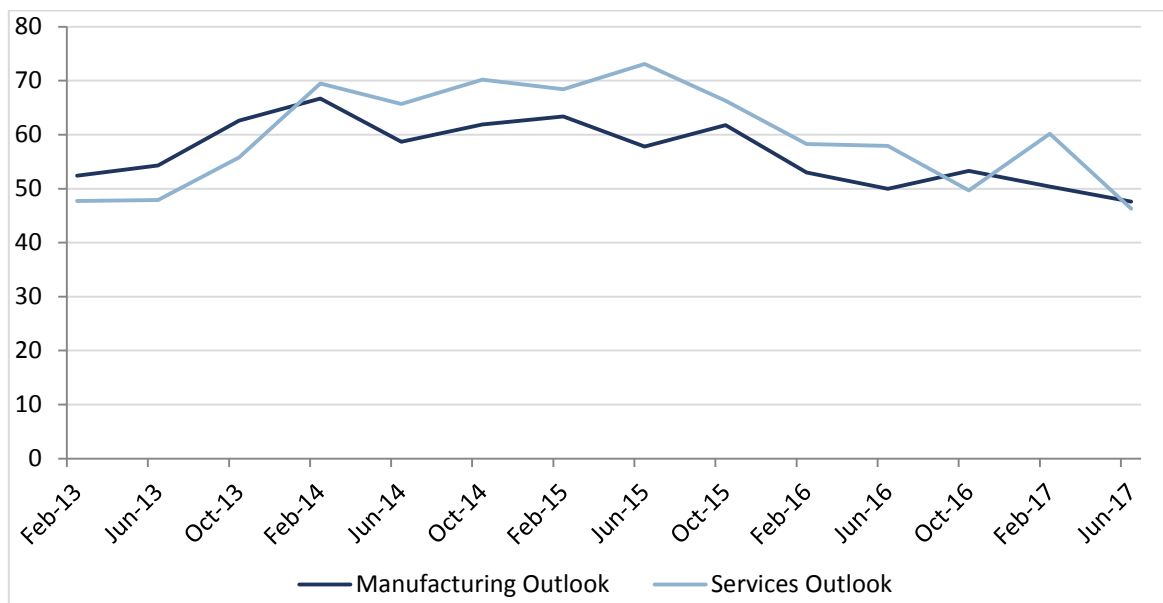
Source: Markit.

Notwithstanding the slight weakening of the construction Purchasing Managers' Index and international uncertainties, the increased trend in building investment is set to continue as housing supply increases, underpinned by strong housing demand and a supportive policy context.

Consequently, we remain optimistic about overall investment in 2017 and 2018, despite the international uncertainties. In particular, we expect annual average growth in investment of 15.9 per cent in 2017 and 12 per cent in 2018.

LABOUR MARKET

Unemployment

As the Irish economy registers strong growth in 2017, the number of people out of work continues to decline in a persistent manner through 2017. On a seasonally-adjusted basis the Live Register recorded a monthly decrease of 2,400 (-1.0 per cent) in October 2017, resulting in a seasonally-adjusted total of 246,900. This represents an annual decrease of 40,300 (-14.3 per cent). As can be seen from Figure 44, the number of persons on the Live Register in October 2017 is now the lowest number recorded in the seasonally-adjusted series since October 2008.

FIGURE 44   NUMBERS ON THE LIVE REGISTER ('000) BY AGE: JANUARY 2006 TO AUGUST 2017
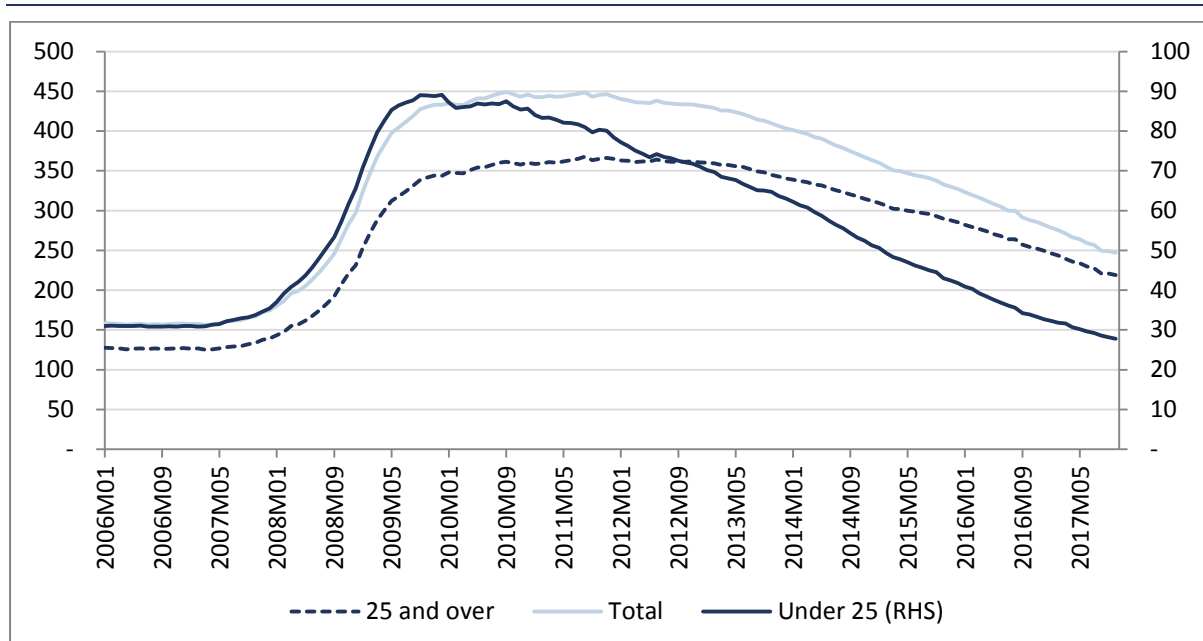
Source: Central Statistics Office.

The share of long-term unemployed represented 43.0 per cent of total unemployment in October 2017 compared to 45.1 per cent in October 2016. Whereas during the initial phase of the economic recovery, it was the shorter-term unemployed who had the largest decline in the Live Register, since mid-2015 it is those in longer-term unemployment who are now experiencing the more significant falls. On a yearly basis, long-term unemployment fell by 18.6 per cent in October 2017 and short-term unemployment fell by 11.2 per cent.

In terms of the last occupation held by those on the Live Register, Table 4 summarises the annual change between 2016 and 2017.

TABLE 4   PERSONS ('000) ON THE LIVE REGISTER CLASSIFIED BY LAST HELD OCCUPATION

Sector	2016 M08	2017 M08	% Change
Managers and administrators	13.1	11.4	-13.2
Professional	16.5	14.3	-13.3
Associate professional and technical	8.6	7.7	-10.3
Clerical and secretarial	27.9	24.6	-11.9
Craft and related	50.3	41.7	-17.1
Personal and protective services	35.6	30.7	-13.7
Sales	29.7	24.9	-16.2
Plant and machine operatives	43.9	36.8	-16.3
Other broad occupational groups	33.4	29.4	-12.0
No occupation	17.7	15.0	-15.2

Source: Central Statistics Office.

Notwithstanding the recent pick-up in the construction sector, the occupational group with the largest number of people on the Live Register is still the craft and related sector. However, the craft and related sector also registers the largest decrease over the past year.

On a month-to-month basis, the seasonally-adjusted unemployment rate fell marginally to 6.0 per cent in October from 6.1 per cent in September 2017. The figure is down from 7.2 per cent in October 2016.

FIGURE 45   UNEMPLOYMENT RATE BY QUARTER (%)
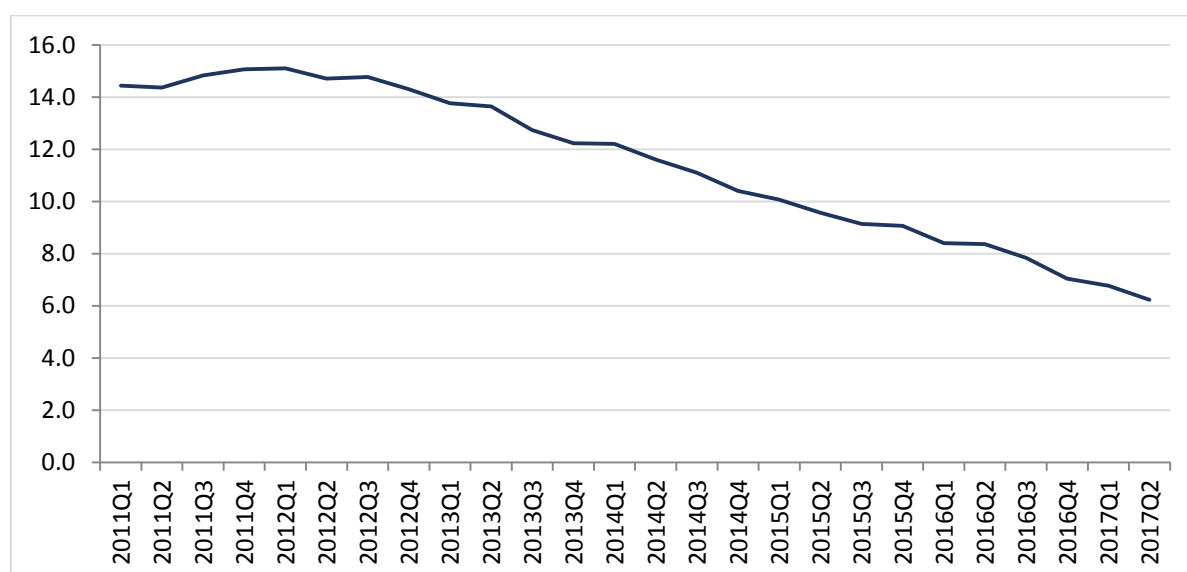
Source: Central Statistics Office.

Employment

Employment in the Irish economy continues to increase with 48,100 jobs being added in the year in the second quarter of 2017 (+2.4 per cent), bringing the number of persons in employment to 2,063,000. The largest year-on-year growth rates were recorded in the construction (+7.7 per cent) and information and communication (+9.2 per cent) sectors. Full-time employment increased by 77,800 (+5.0 per cent) to 1,630,800 during the same period and accounted for 79.0 per cent of total employment in Quarter 2, 2017. On the other hand, part-time employment fell by 29,700 (-6.4 per cent) to 432,200 and accounted for 21.0 per cent of total employment.

Over the longer-term, the number of persons in employment has increased by 201,700 (+10.8 per cent) between Quarter 2, 2011 and Quarter 2, 2017. Full-time employment (+207,000) accounted for virtually all of this increase while there was a very slight increase in part-time employment. This indicates some significant changes in the composition of employment in the Irish labour market.

As the economy recovers and the level of employment improves, it becomes more important to consider the quality of employment and the pace of wage growth. Kelly and Barrett (2017)[19] found that during the recession years, Ireland experienced an increase in atypical work (part-time and temporary contracts) among the holders of new jobs. They also found evidence that, despite being

---

[19]   Kelly, E. and A. Barrett (2017). 'Recent Developments in the Irish Labour Market: Is it All Good News?', Institute of Labour Economics, IZA Discussion Paper Series No. 10541.

lower than in the recession, the likelihood of a new job being atypical persisted into the first years of the recovery (2014-2015), remaining above pre-crisis levels.

Growth in nominal wages has remained subdued not only in Ireland but also throughout the Eurozone,[20] suggesting that among other factors a significant degree of labour market slack[21] may persist. The unemployment rate, as defined by the International Labour Organization, is based on a narrow definition of labour underutilisation - ILO considers unemployed those who are (i) without work; (ii) available to start working within two weeks; and (iii) actively seeking work. To better access the degree of labour market slack we look at the 'potential additional labour force' (those who are not actively seeking work despite being available and those actively seeking work but who are available to start working within two weeks) and the 'underemployed' (those working less hours than they would like). Figure 46 shows these indicators have only approached pre-crisis levels since Q4 2016. In the fourth quarter of 2008 there were 81,400 underemployed people, in the second quarter of 2012 this number jumped to 156,600 and only fell below the 90,000 level in the second quarter of 2017. Before 2009 the potential additional labour force was well below the 30,000 level while in the second quarter of 2013 it reached 60,000. The most recent CSO release suggests the potential additional labour force is now 34,000.

This analysis at the aggregate level contrasts somewhat with the findings in an article in the present *Commentary* by Redmond and Whelan (2017). In conducting micro-level analysis of the Irish labour market, Redmond and Whelan (2017) examine the nature of current employment in Ireland with respect to the intensity of use of certain skills and the mismatch between the skills possessed by employees and those required to do their jobs. Their findings suggest that, while there are future sources of labour supply of those currently experiencing unemployment, it is unlikely that this group alone will fully meet the increased labour demands of the Irish economy.

---

[20]   ECB Economic Bulletin, Issue 3 / 2017.
[21]   ECB President Mario Draghi speech during the 27th European Banking Congress in Frankfurt, Germany November 17, 2017.

FIGURE 46   UNDEREMPLOYED PERSONS AGED 15 YEARS AND OVER ('000) BY QUARTER
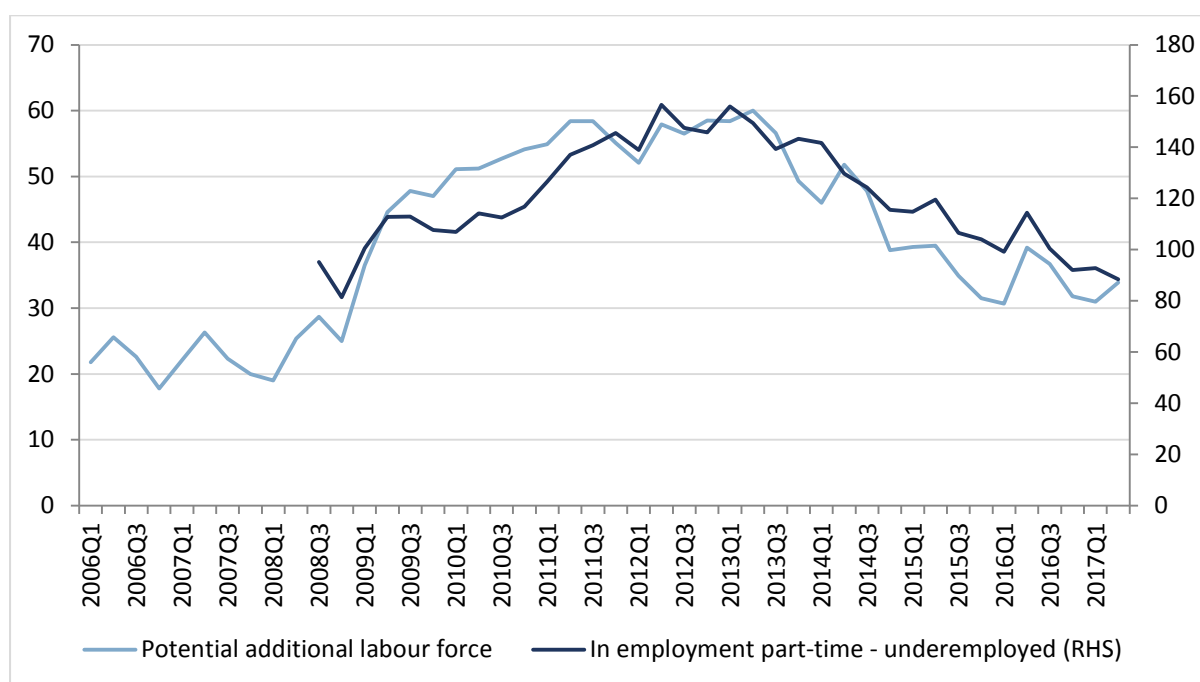
Source: Central Statistics Office.

The CSO Potential Labour Supply (PLS4) indicator can be used as a more broad measure of underemployment. This indicator includes unemployed people, people who are not actively seeking work, people who are unavailable to take up work within two weeks and people who are underemployed.

In Q2 2012 the PLS4 was 25.9 per cent, which was almost twice the official unemployment rate at that time. The PLS4 only reached the pre-crisis rate (13.4 per cent) in Q4 2016. This improvement in the Irish labour market may have to take place over a longer period of time before it translates into more dynamic wage growth. As ECB president Mario Draghi (2017)[22] stated recently 'as the labor market tightens and uncertainty falls, the relationship between slack and wage growth should begin reasserting itself'.

---

[22]   ECB President Mario Draghi speech during the 27th European Banking Congress in Frankfurt, Germany November 17, 2017.

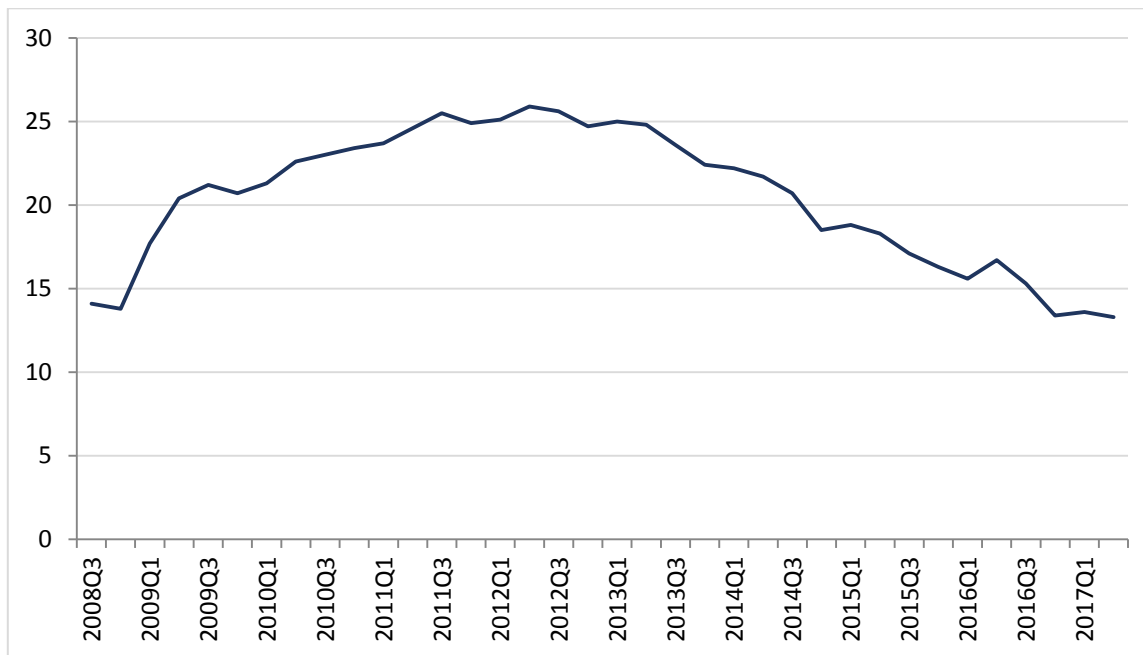**FIGURE 47   POTENTIAL SUPPLY OF LABOUR (%) BY QUARTER**

Source: Central Statistics Office.

In an Irish context, Linehan et al. (2017)[23] find that there is a non-linear relationship between wage growth and unemployment. Using data from Q1 1999 to Q2 2017 the authors find that real wage growth is generally flat in the 5 to 10 per cent unemployment rate range, whereas outside this range the sensitivity of real wages is considerably larger.

Labour market forecasts

As the Irish economy continues to perform strongly and the construction sector recovers, we believe that the unemployment rate will average 6.2 per cent through 2017 and 5.4 per cent through 2018. Employment is set to exceed 2.07 million by the end of 2017 and increase to 2.12 million by the end of 2018.

PUBLIC FINANCES

The latest taxation receipts reflect significant increases for the year to date in almost all the major tax headings. Returns for certain items were below profile for the first two quarters of the year, however all items are now registering positive growth. Even excise duties, which had been particularly impacted by cross-border motor trade, are now showing some minor increases. Figure 48 illustrates the annual changes in taxation returns for the period January to

---

23   Linehan S., R. Lydon, T. McIndoe-Calder, P. Reddan and D. Smyth (2017). 'The Labour Market and Wage Growth after a Crisis', Quarterly Bulletin 04/October 17, Central Bank of Ireland.

October for the last four years for the main tax categories as well as the overall total amount.

FIGURE 48   ANNUAL CHANGES IN MAJOR TAX SUB-COMPONENTS (%) FOR THE PERIOD JANUARY - AUGUST
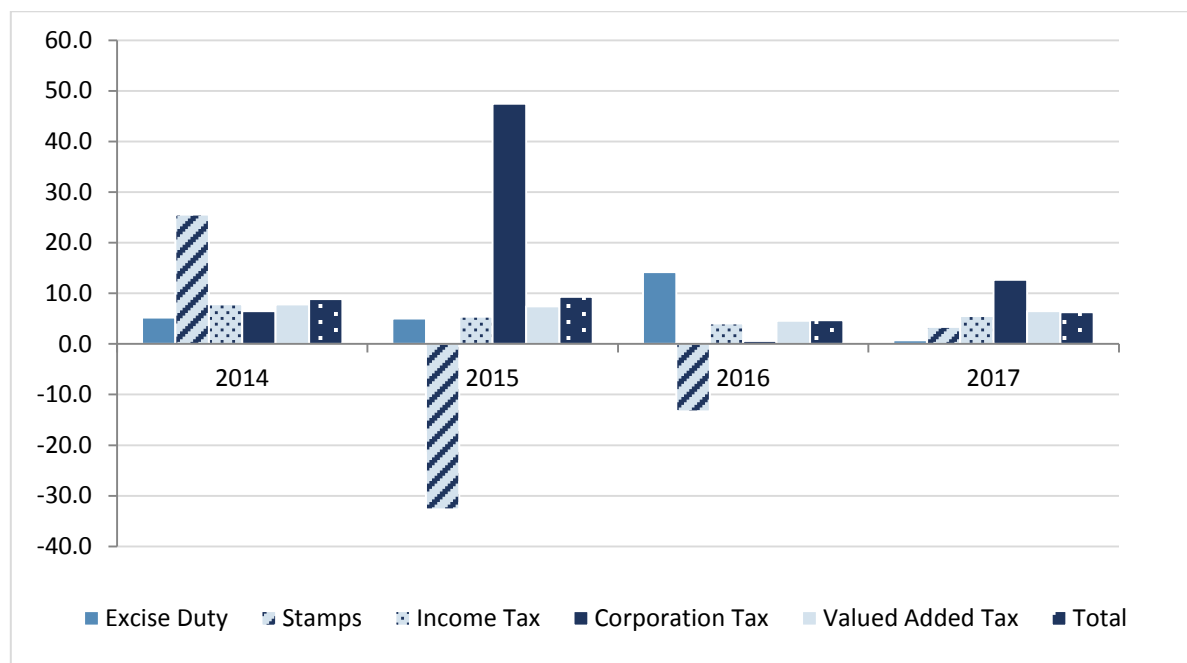
Source: *QEC* calculations.

While overall growth rates are slightly less than in previous years, the pace of increase is still significant and total receipts are set to meet expected levels for the current year.

Another important indicator of the domestic economy is changes in pay related social insurance (PRSI), which typically tends to be quite highly correlated with developments in the Irish labour market. For the year to date, PRSI is showing an increase of 3.5 per cent. Taken with the expected increase in employment of 2.6 per cent, this is an important indication of the performance of the Irish economy.

The latest data on total gross voted Government current and capital expenditure suggest a slight underspend in both categories in the year to October as illustrated in Table 5. This suggests the Government is well on course to meet its total (current + capital) overall target for expenditure in 2017 of €58.9 billion.

**TABLE 5   ACTUAL AND PROFILE GROSS GOVERNMENT CURRENT AND CAPITAL EXPENDITURE (€ BILLION)
FOR THE PERIOD JANUARY - OCTOBER**

	Current	Capital	Total
Actual	43.3	2.9	46.2
Profile	43.5	3.1	46.6

Sources: *QEC* calculations and Department of Finance.

Based on the improvement in taxation revenues during the course of the year and the performance on the expenditure side, we have revised our forecasts for the deficit for 2017 and 2018. We now expect a deficit of 0.3 per cent in 2017 and a mild surplus of 0.2 per cent in 2018. This contrasts with our expectation in the previous *Commentary* of a deficit of 0.6 and 0.2 per cent respectively.

This improved fiscal outlook for 2018 is important given the significant increase in the fiscal space which is likely to be available to the Government for Budgets 2019, 2020 and 2021 as can be seen in Table 6. This arises as the Government is on course to achieve its medium-term budgetary objective (MTO) of a structural budget balance in 2018. Consequently the amount of net fiscal space available for Budget 2019 is likely to increase by 160 per cent vis-à-vis the amount in Budget 2018.

TABLE 6   GROSS AND NET FISCAL SPACE (€ BILLION) 2018 - 2021

	2018	2019	2020	2021
Gross Fiscal Space	1.7	3.6	3.8	3.8
Net Fiscal Space	1.3	3.2	3.4	3.4

Sources: *QEC* calculations and Department of Finance.

This represents a significant increase in the resources available to the Irish Government over the medium term. However, as noted in the previous *Commentary*, the challenge for policymakers over this period is to ensure that the Irish economy does not overheat and transitions to sustainable rates of growth. Consequently, fiscal policy will have to be conducted in a cautious and prudent manner.

FIGURE 49   DEBT-TO-GDP AND GNI* RATIOS (%)
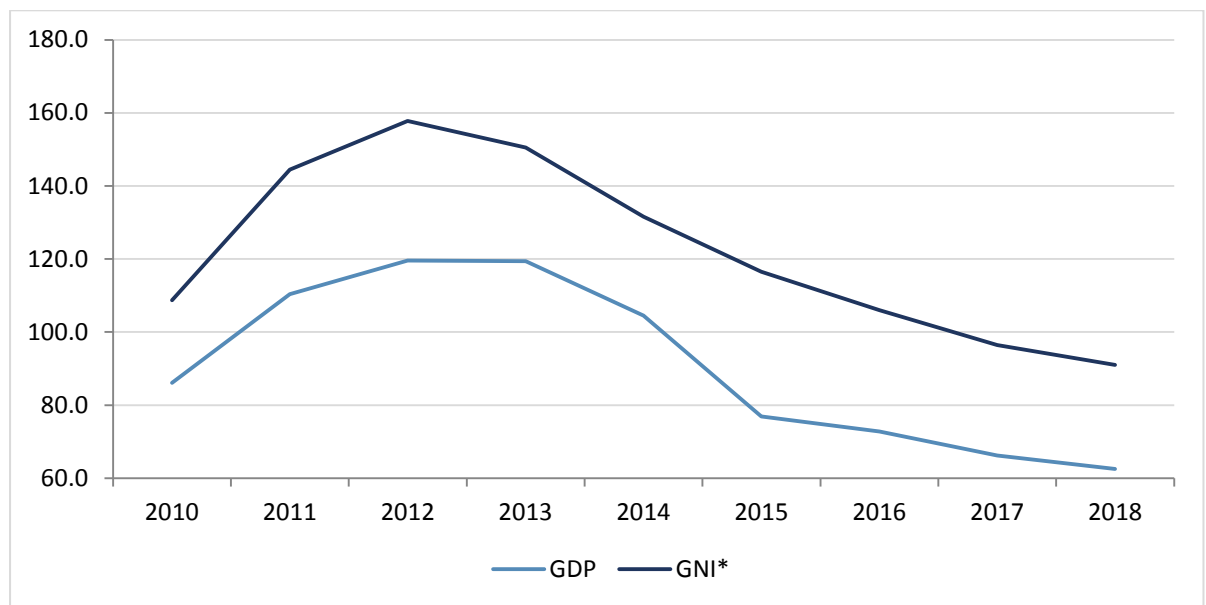
Sources: *QEC* calculations.

Figure 49 presents the debt-to-output ratio for both GDP and the new GNI* measure. As noted previously, while the trends are similar in both ratios, a significant difference exists in terms of the actual rate. The debt-to-GNI* ratio, for example is some 30 percentage points higher than the equivalent debt-to-GDP ratio, thereby giving a significantly different impression of the domestic economy's ability to service its existing debt commitments.

General Assessment

2017 is likely to see another strong year of growth by the Irish economy. Our assessment that output is likely to increase by 5 per cent this year will again see Ireland outperform all European and most OECD countries in that regard. In the main the consistently robust performance of the Irish economy is illustrated by two key economic indicators; taxation revenues and labour market performance continue to register substantial increases through the present year. One aspect of economic performance which is subdued is the traded sector of the economy. Both exports and imports registered much more muted levels of activity in 2017. While some of this is almost certainly related to difficulties associated with the National Accounts, in the long run a balanced growth path of both domestic and external sources of growth is optimal for an open economy such as Ireland's.

The decision by the ECB in October to reduce the scale of its bond buying programme to €30 billion per month from €60 billion in January 2018 reflects the improving macroeconomic conditions in the Euro Area. While Governor Draghi has acknowledged that inflation expectations are not yet back to 2 per cent per annum, underlying data in the Euro Area have been improving for some time. In a box in the International section, McQuinn and Whelan summarise recent work updating their earlier growth forecasts for the Euro Area. They sound a warning note concerning European growth prospects over the medium term by pointing out that the recent European growth performance can be characterised as a 'cyclical' recovery and that long-standing concerns about the low rate of total factor productivity in the Euro Area persist. Indeed, even allowing for a return of investment and unemployment to pre-crisis levels, McQuinn and Whelan (2017) project growth in the Euro Area that is below 1 per cent per year over the next decade and weaker in later decades. Finally, McQuinn and Whelan (2017) reiterate their previous conclusion that, in the absence of a remarkable turnaround in European productivity growth, a return to higher rates of inward migration may be necessary if governments wish to keep the supply of labour growing and economic growth rates from falling.

Given the improvement in the European economy the possibility of increases in future ECB policy rates arises. O'Toole, in a box in the Monetary and Financial section, outlines some of the issues which arise for the domestic economy as monetary policy is normalised. The implications are complicated in Ireland due to the current structure of the banking market. As O'Toole notes, most mortgage, consumer and corporate loans in Ireland have variable rates, thereby enabling Irish financial institutions to pass rate changes directly through to households and firms. However, the situation is complicated by the extent to which the monetary

policy transmission mechanism has been impaired in the Irish market, mainly due to difficulties originating in the international financial downturn. Therefore, it is difficult to predict the extent to which policy rate increases will be passed through to new lending rates as well as the rates on existing loans. However, as O'Toole points out, given the highly indebted position of Irish households and firms, it is likely ECB policy rate normalisation would have a more negative effect on the Irish economy than for most other European countries. This requires domestic policymakers to focus on reducing sovereign indebtedness, as well as increasing competition in the banking sector, which amongst other benefits to the economy, will help to moderate the impact of any policy rate rises.

The overall recent budgetary package was limited somewhat by the available fiscal space. The previous *Commentary* argued that this was a prudent decision in light of the strength of current economic activity. The package of approximately €400 million in additional spending was in line with our recommendation for a neutral budget. In many respects, however, the real test for fiscal discipline will arise in the near future. Due to the rules governing the Stability and Growth Pact, the degree of fiscal space available to the Irish Government is set to increase significantly in the coming years. With the economy expected to continue to grow at robust rates, the Government will have to avoid the temptation to increase economic activity above that which is sustainable. In a Special Article to the *Commentary,* Callan et al. (2017) conduct the customary micro-level analysis of the distributionary impact of Budget 2018. Using the SWITCH methodology, Callan et al. (2017) establish that the overall impact of the budget policy will be to reduce incomes somewhat *below* the levels which would have obtained if tax and welfare parameters had been indexed in line with forecast wage inflation.

One of the most important risks to the domestic economy is the performance of the UK. Concerns surrounding the state of the British economy continue to grow in light of the most recent economic data. While British labour market data are encouraging, ongoing uncertainty about Brexit is one of the main reasons for the decline observed in investment with activity in the housing market, in particular, cooling off in recent quarters. As noted in the International section of the *Commentary,* the recent changes in the net international investment position of the UK economy does appear to suggest a significant decline in investor confidence. The recent downward revision by the Office for Budget Responsibility (OBR), particularly for future UK productivity rates give rise to significant concerns about the longer-term growth prospects of the UK economy. While the Irish economy has diversified its export base substantially over the past 25 years, any marked decline in UK economic activity will almost certainly impact the domestic economy adversely. In addition, uncertainty about the future trade arrangements between the UK and the EU are likely to affect negatively the performance of indigenous firms in particular.

Given the strong Irish house price inflation over the past few years, McQuinn (2017), in a Special Article with this Commentary, assesses the sustainability of current Irish house prices and also evaluates the likely outcome for prices over the medium term. Overall the analysis suggests that Irish house prices are likely to increase over the next three to four years. This is due to a number of factors; current housing demand is underpinned by the strong performance of the Irish economy with developments in the labour market contributing to improvements in affordability. Also, the sluggish rate of supply response in the market is putting upward pressure on prices, while there is still some evidence that prices may have overcorrected post-2008. From a policy perspective, the conclusions suggest that the Government and relevant authorities should desist from any further measures which would stimulate housing demand. The Help to Buy scheme falls within this category. Additionally, from a fiscal perspective, it should also be noted that any reduction in taxation rates with the consequent increase in personal disposable income will also fuel demand in the housing market. This is a relevant consideration in terms of any future changes in personal taxation rates.

The recent decision by the Central Bank of Ireland not to significantly change the macroprudential regulations is welcome. Any loosening of these measures at this point is likely to also fuel housing demand. As has been noted before and as McQuinn (2017) concludes the only policy change which distinguishes the present period of significant housing demand from the previous pre-2007 period is the presence of macroprudential regulations. The Central Bank must ensure, going forward, that substantial increases in mortgage credit supply do not themselves lead to increased house price inflation. Otherwise we face the real possibility of repeating the disastrous mistakes of the 2003-2007 era.

The previous *Commentary* focused on the potential for overheating in the Irish economy. In that regard, another article in the present *Commentary* by Redmond and Whelan (2017) conducts particularly interesting micro-level analysis of the Irish labour market. They examine the nature of current employment in Ireland with respect to the intensity of use of certain skills and the mismatch between the skills possessed by employees and those required to do their jobs. The analysis reveals a high degree of skill underutilisation among Irish employees. The percentage of Irish workers reporting education or skill levels in excess of those required to do their job is the third highest of 28 EU countries. While there appears to be scope to better harness the skills of existing employees as the economy continues to improve and the labour market tightens, Redmond and Whelan (2017) also show that in terms of future sources of labour supply for Ireland's growing economy, the overall numbers are still relatively small. Consequently, a key source of future labour supply for Ireland will be

immigration. However, as noted in Barrett et al. (2015),[24] the implications of Brexit on migration flows between Ireland and the UK have yet to be established.

The research by McQuinn (2017) and Redmond and Whelan (2017) both point to certain risks the Irish economy may experience in 2018 as it approaches full employment and its potential level of activity. This will require vigilance on a number of policy fronts: (1) macroprudential policy must ensure that unsustainable credit growth does not lead to emerging vulnerabilities in the domestic economy; and (2) fiscal policy must be employed cautiously as the degree of fiscal space available to the Irish Government is set to increase significantly over the coming years.

---

[24] Barrett, A., A. Bergin, J. FitzGerald, D. Lambert, D. McCoy, E. Morgenroth, I. Siedschlag and Z. Studnicka (2015). *Scoping the Possible Economic Implications of Brexit on Ireland*, Research Series 48, November 2015, ESRI.

DETAILED FORECAST TABLES

FORECAST TABLE A1   EXPORTS OF GOODS AND SERVICES

	2015	% change in 2016		2016	% change in 2017		2017	% change in 2018		2018
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	200.3	-3.1	0.9	194.1	-5.9	-4.0	182.6	4.0	1.5	190.0
Tourism	4.3	8.4	7.4	4.7	5.0	4.0	4.9	3.0	3.0	5.1
Other Services	122.0	11.7	10.7	136.3	30.0	14.0	177.1	11.2	8.0	197.0
Exports Of Goods and Services	326.6	2.6	4.6	335.0	8.8	3.1	364.6	7.5	4.4	392.0
FISM Adjustment	0.0			-0.0			-0.2			-0.2
Adjusted Exports	326.6	2.6	4.6	335.0	10.0	3.1	364.4	7.5	4.4	391.8

FORECAST TABLE A2   INVESTMENT

	2015	% change in 2016		2016	% change in 2017		2017	% change in 2018		2018
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	4.4	17.5	13.3	5.2	56.9	48.5	8.2	10.4	20.8	9.0
Other Building	7.8	31.1	23.3	10.3	16.0	11.0	11.9	26.6	20.0	15.1
Transfer Costs	0.9	23.9	16.8	1.1	12.4	7	1.3	9.2	3.0	1.4
Building and Construction	14.2	24.9	18.4	17.7	27.5	21.7	22.6	19.1	18.6	26.9
Machinery and Equipment	39.0	79.4	76.7	70.0	17.5	14.5	82.2	14.1	10.2	93.8
Total Investment	53.2	64.9	61.2	87.7	19.6	15.9	104.8	15.1	11.9	120.7

FORECAST TABLE A3   PERSONAL INCOME

	2015	% change in 2016		2016	% change in 2017		2017	% change in 2018		2018
	€ bn	%	€ bn	€ bn	%	€ bn	€ bn	%	€ bn	€ bn
Agriculture, etc.	3.2	1.7	0.0	3.2	2.0	0.1	3.3	2.5	0.1	3.4
Non-Agricultural Wages	76.1	5.4	4.1	80.3	5.8	4.6	84.9	5.4	4.6	89.5
Other Non-Agricultural Income	20.9	26.3	5.5	26.4	51.2	13.5	39.9	24.3	9.7	49.6
Total Income Received	100.2	9.6	9.7	109.9	16.6	18.2	128.1	11.2	14.4	142.5
Current Transfers	23.9	-1.5	-0.4	23.6	0.5	0.1	23.7	-4.4	-1.0	22.7
Gross Personal Income	124.2	7.5	9.3	133.4	13.7	18.3	151.8	8.8	13.4	165.1
Direct Personal Taxes	28.2	4.1	1.2	29.4	4.7	1.4	30.8	3.4	1.1	31.8
Personal Disposable Income	95.9	8.5	8.1	104.1	16.3	16.9	121.0	10.2	12.3	133.3
Consumption	92.7	4.2	3.9	96.6	3.8	3.9	100.3	3.9	3.9	104.7
Personal Savings	3.2	131.5	4.2	7.5	177.6	13.2	22.2	40.4	8.4	29.1
Savings Ratio	3.4			7.2			17.1			21.8
Average Personal Tax Rate	22.7			22.0			20.2			20.0

FORECAST TABLE A4   IMPORTS OF GOODS AND SERVICES

	2015	% change in 2016		2016	% change in 2017		2017	% change in 2018		2018
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	86.9	1.7	8.2	88.2	-1.5	-3.5	86.9	7.2	5.0	93.2
Tourism	5.1	9.5	8.9	5.6	4.3	2.8	5.9	4.5	3.0	6.1
Other Services	147.8	22.2	21.4	180.6	13.9	9.5	205.6	12.1	7.8	230.5
Imports of Goods and Services	239.9	14.4	16.4	274.4	8.5	4.7	298.4	10.5	6.8	329.8
FISM Adjustment	0.0			0.0			-0.8			-0.8
Adjusted Imports	239.9	14.4	16.4	274.4	8.5	4.7	297.6	10.5	6.8	329.0

FORECAST TABLE A5 **BALANCE OF PAYMENTS**

	2015	2016	2017	2018
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	326.6	335.0	364.6	392.0
Imports of Goods and Services	239.9	274.4	298.4	329.8
Net Factor Payments	-51.9	-47.6	-51.0	-53.2
Net Transfers	-3.1	-3.8	-3.8	-3.8
Balance on Current Account	31.6	9.2	11.5	5.2
As a % of GNP	15.4	4.1	4.6	2.0

FORECAST TABLE A6 **EMPLOYMENT AND UNEMPLOYMENT, ANNUAL AVERAGE**

	2015	2016	2017	2018
	'000	'000	'000	'000
Agriculture	109.9	112.8	108.6	108.3
Industry	373.7	393.8	412.5	428.9
Of which: Construction	125.5	135.8	147.9	160.4
Services	1,473.9	1,506.6	1,548.6	1,580.9
Total at Work	1,963.7	2,020.2	2,072.0	2,118.1
Unemployed	203.3	172.9	136.9	120.6
Labour Force	2,167.2	2,193.1	2,208.9	2,238.7
Unemployment Rate, %	9.5	7.9	6.2	5.4

Special Article

DISTRIBUTIONAL IMPACT OF TAX AND WELFARE POLICIES: BUDGET 2018

Tim Callan, Maxime Bercholz, Karina Doorley, Claire Keane, Mark Regan, Michael Savage, John R. Walsh[25]

ABSTRACT

This article examines the impact of the tax and welfare changes introduced in Budget 2018 on the distribution of income across households. The analysis uses SWITCH, the ESRI tax-benefit model, which is based on data gathered by the CSO for almost 8,000 households in its nationally representative Survey of Income and Living Conditions for 2013 and 2014, calibrated to represent the 2018 population. The impact of policy is measured against a distributionally neutral benchmark – a budget which would index the money value of tax credits and welfare payment rates in line with expected growth in wages of about 3.1 per cent.

Key findings include the fact that the overall impact of policy was to reduce incomes somewhat below the levels which would have obtained if tax and welfare parameters were simply indexed in line with wage growth. The average loss across all households is close to 0.4 per cent. At low income levels, these reductions, relative to a wage-indexed policy, were in the region of 0.6 per cent; at high income levels, the reductions were in the region of 0.2 per cent.

Analysis at family unit level reveals losses of close to 0.4 per cent, compared to a neutral benchmark, for most family types. Losses are slightly lower (less than 0.2 per cent) for single employees without children, and for double earner couples without children. Somewhat greater losses (0.6 per cent) are identified for retired couples, and a family type category which includes those who are outside the labour force – mainly in education, ill or disabled.

INTRODUCTION

In this article we examine the distributional impact of the main tax and welfare measures in Budget 2018. Our analysis is based on SWITCH, the ESRI tax-benefit model,[26] to ensure that we obtain a nationally representative picture. SWITCH is based on SILC (Survey of Income and Living Conditions), the CSO's main survey of household income. The scale, depth and diversity of this survey allows it to provide an overall picture of the impact of the budget on Irish households, which cannot be gained from selected example cases. Data from 2013 and 2014 SILC are pooled, in order to increase the effective sample size to almost 8,000 households including 20,000 individuals.[27] To ensure that these pooled data are nationally representative, weights are calibrated using information from demographic projections, the Revenue Commissioner's Income Distribution Statistics, Department of Social Protection estimates of the number of recipients of a range of social welfare schemes, and a number of other sources to represent the 2018 situation.[28]

The areas covered by SWITCH, including income tax, PRSI, USC, property tax, welfare benefits and public service remuneration, account for the bulk of the impact of budgetary policy changes on households' cash incomes in recent years. There are, however, some taxes (e.g. indirect taxes, which affect the purchasing power of cash incomes) which cannot at present be integrated fully within the modelling framework. Work on the inclusion of these taxes in the SWITCH model is now underway, based on the methods developed by Savage (2017), as part of a collaborative project with the Department of Finance. Like almost all tax-benefit models, the focus is on cash taxes and benefits; there is no standard methodology for the attribution of benefits from public spending to households.

The results we obtain relate to the 'cash' or 'first round' effects of Budget 2018 policy changes, before any adjustments in individual behaviour such as changes in employment status or hours of work. This is by far the most common approach internationally. A new strand in the SWITCH research programme has just begun, and will seek to identify the size and nature of labour supply responses to tax and welfare changes.[29]

---

[26] See Callan et al. (2011) for a full description of the model.

[27] Due to the longitudinal component of SILC, some households are in both waves of the survey. Where a household is present in more than one of these waves, we use the most recent observation. For close to 70 per cent of households it is the 2014 data which are used; 2013 data are used only where a household is not re-interviewed. By design, SILC does not re-interview 25 per cent of households, and a further significant proportion cannot be contacted or refuse to respond. This structure means that the households in the pooled sample are not automatically representative of the 2014 population, but this issue is dealt with by the reweighting procedure described in the text, which ensures the SWITCH database is representative of the 2018 situation.

[28] A technical adjustment for sample size differences between years of SILC also applies.

[29] See Callan et al. (2009) for an implementation of this approach in the context of the reform of the tax treatment of couples.

MEASURING THE DISTRIBUTIONAL IMPACT OF POLICY

Analysis based on a large-scale nationally representative sample of households is essential in order to assess the overall impact of budgetary policy. Calculations for selected example households cannot give a representative picture of the impact of the budget for the population as a whole. The ESRI tax-benefit model (SWITCH) allows us to do this: it estimates the impact of direct tax and welfare changes using anonymised data from the CSO's nationally representative Survey on Income and Living Conditions.

The impact of policy change must be measured against an alternative specifying what would happen if the policy change did not take place (a 'counterfactual' policy). In the construction of budgets, the practice in Ireland has been to construct an 'opening budget' against which changes are measured. For tax and welfare, Ireland's conventional opening budget simply freezes tax rates, credits and welfare payments at their existing levels, whereas the UK and the US have adopted differing forms of indexation with respect to prices and/or wages (see Callan et al., 2015, for more details). While the frozen benchmark is useful in accounting terms, it would be highly misleading in an analysis of distributional impact.[30] With nominal wages, prices and real wages all showing positive growth, implementing the conventional opening budget would lead to real income *losses* for those dependent on welfare, while further up the income distribution incomes would *rise* (Callan et al., 2001; Bargain and Callan, 2010).[31] Furthermore, using the opening budget as a basis to measure policy impact would mean that measured policy impact would depend on government's definition of this default policy – something which varies across countries, and can change over time.

The alternative used here is a policy which indexes both tax and welfare parameters with respect to the expected growth or decline in wages. This ensures that average tax rates are held constant (i.e. no fiscal drag), and leads to approximately equal growth (or decline) in income across different income groups (Callan et al., 2001). It should be clear that this is designed to provide a 'distributionally neutral' benchmark, and is not intended as a policy recommendation. There are many reasons why it may be desirable to depart from this benchmark; but having a distributionally neutral benchmark, independent of the default position chosen by government, is essential in examining the distributional impact of policy changes. The wage-indexed benchmark is an established part of the standard toolkit for distributional analysis.

---

[30] For a more detailed exposition, see Callan et al. (2001).
[31] When wages are falling, the conventional benchmark would give rise to income gains for welfare recipients and income losses for those in employment.

We use forecasts of wage growth to implement this approach. Results examining the impact of Budget 2018 are based on forecast wage growth of 3.1 per cent – an average of the forecast wage growth from the current *Quarterly Economic Commentary* (McQuinn et al., 2017, 3.0 per cent) and the Central Bank's *Quarterly Bulletin* (Central Bank of Ireland, 2017, 3.2 per cent).

Results shown are at the household level unless otherwise specified and are based on household disposable income (after taxes and benefits), adjusted for household size and composition, i.e. income per adult equivalent or 'equivalised income'.[32]

BUDGET 2018

A wide range of taxation and welfare measures are directly included in our model-based analysis, including:

- a €5 increase in the weekly rates of payment for pensioners aged 66 and over, with proportional increases for qualified adults and those on reduced rates;

- a €5 increase in the weekly rates of payment for working age (under 66 years of age), with proportional increases for qualified adults, Jobseekers Allowance (JA) recipients who are under 26 years of age and other recipients on reduced rates;

- a €2 increase in the weekly rates of payment for a qualified child;

- a one-week increase in the duration of fuel allowance payments;

- a €20 per week increase in the income disregard for the One Parent Family payment and the Jobseeker's Transition payment;

- a €100 increase in the Home Carer's tax credit;

- an increase of €750 in the standard rate income tax band for all earners;

- a €200 increase in the earned income tax credit for the self-employed;

- a €10 increase in the Working Family Payment thresholds (formerly Family Income Supplement) for those with up to three children;

- a €2.50 increase in the Living Alone Allowance;

---

[32] This adjusts income to take account of household size. The scale used is the scale used in official monitoring of poverty in Ireland, i.e. 1 for the first adult, 0.66 for subsequent adults and 0.33 for children aged 14 or under.

- reductions in USC;

- a reduction in the value of mortgage interest relief to no more than 75 per cent of its 2017 levels;

- the new phone allowance.

Views may differ as to whether the 30-cent-per-hour increase in the National Minimum Wage (NMW) should be included in the analysis.[33] As this is paid for by employers, it can be argued that it should not be included on a par with tax and welfare adjustments. On the other hand, the minimum wage is a policy instrument with a distinct distributional profile, and its impact on the household income distribution may be of interest. We have undertaken the analysis both with and without the increase in the minimum wage. As differences between the 'with' and 'without' results are barely perceptible we present simply the results with the minimum wage impact included.

Overall, the SWITCH model provides good coverage of the main policy changes in Budget 2018. The SWITCH estimates of the full year cost of USC and income tax changes are some 10 per cent higher than the official estimates. As for welfare cash payments, the SWITCH estimates are close to 10 per cent lower than the expenditure estimates in the Budget – largely because some welfare payments go to persons outside the scope of household surveys, such as pensions going to those abroad or in nursing homes.

We note two aspects of policy which are not included in the current analysis: the Housing Assistance Payment and the Affordable Childcare Subsidy scheme. Separate reports on both of these topics are in train.

Figure 1 shows the impact of Budget 2018, relative to a neutral, wage-indexed budget, across ten equally sized income groups (deciles) ranked from the lowest to the highest incomes, after adjustment for household size.

The first point to note is that there are losses across all income groups, averaging 0.4 per cent overall, relative to a neutral, wage indexed budget. These losses arise because the adjustments to tax and welfare parameters were less than what full indexation (of 3.1 per cent) would imply. For example, the standard rate band

---

[33]   Some individuals in the sample have wages below the minimum wage. In our simulations, these cases are treated as if they had the minimum wage, and benefited from an increase. Alternative approaches to modelling the 10 cent per hour rise in the NMW also have very little overall impact on the outcomes measured here.

was widened by €750, but indexation would have required an increase of €1,050. Similarly, the Budget raised welfare payments by €5 per week, while indexation would have required an increase of €6, or for pensioners, €7. It is these gaps between the changes required by indexation and the actual Budget changes which generate the losses observed in the chart. From a macroeconomic perspective, our estimates suggest that indexation of tax bands, credits and welfare payments would have cost in the region of €1,100 million. The resources used in Budget 2018 for personal taxes and welfare payments were some €400 million lower than that figure, reflecting the particular squeeze on resources during this budgetary year.

The pattern of losses across the income distribution is also illustrated in Figure 1. Somewhat greater losses were experienced in the bottom 40 per cent of the income distribution (losses of between 0.5 and 0.7 per cent). Losses for the top 40 per cent of the income distribution were closer to 0.25 per cent. These changes are small compared to the losses imposed by austerity budgets and the gains from budgets during the boom years. For example, Budget 2006 involved gains of 1.8 per cent, averaged across households at all income levels, while Budgets 2009-2010 combined saw losses of over 5 per cent for the highest income quintile.

FIGURE 1   **IMPACT OF BUDGET 2018 – PERCENTAGE CHANGE IN HOUSEHOLD DISPOSABLE INCOME BY INCOME DECILE RELATIVE TO WAGE-INDEXED BUDGET**
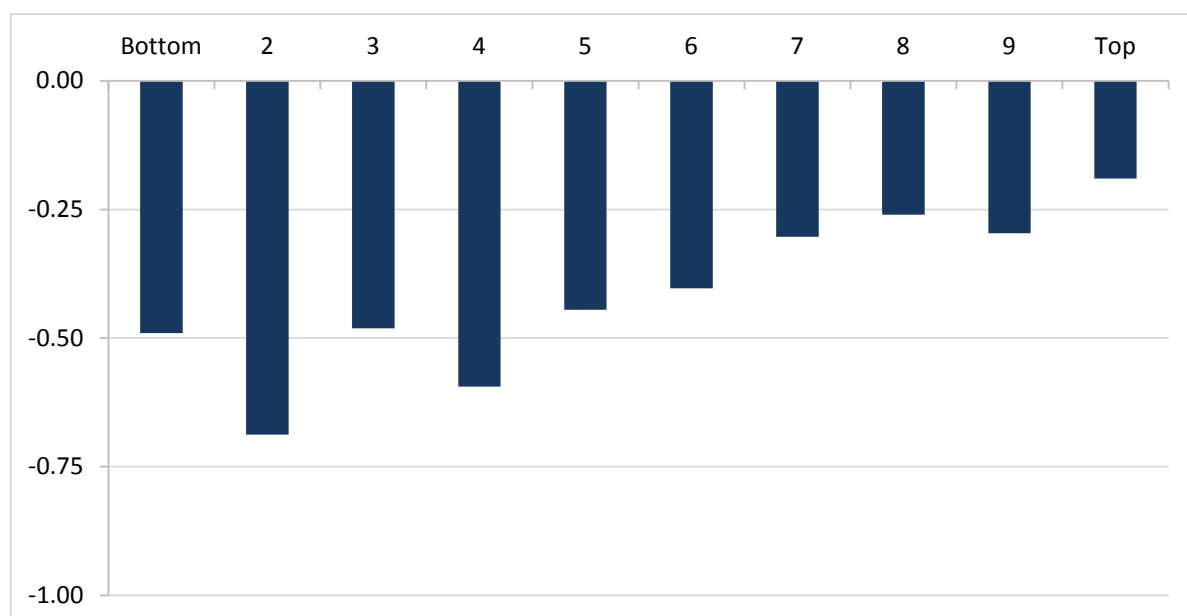
Source: Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2017 incorporating for 2018 the main changes in direct tax, welfare, and the National Minimum Wage. Each income group contains one-tenth of all households, ranked from lowest to highest incomes, adjusted ('equivalised') to take account of the numbers of adults and children in each household. Budgetary impacts are assessed relative to a neutral budget with tax bands, tax credits and welfare payments increased in line with expected wage growth of 3.1 per cent.

IMPACT BY FAMILY TYPE

The preceding analyses have examined the impact of Budget 2018 across the income distribution. Here we examine how different family types have been affected by budgetary policy changes. The analysis is conducted at the level of what is termed a 'tax unit', i.e. an individual or couple, together with dependent children, if any. Young adults including third-level students are treated as independent tax units.

Table 1 shows losses for all family types (ranked from the smallest to the largest percentage loss). For most types, the loss is between 0.3 and 0.5 per cent. Losses are slightly lower (less than 0.2 per cent) for single employees without children, which accounts for more than one in three of all families, and for double earner couples without children. Somewhat greater losses (0.6 to 0.7 per cent) are identified for single earner couples with children, retired couples, and a family type category which includes those who are outside the labour force – mainly in education, ill or disabled. Taken together, these groups account for just over one in four of all families.

TABLE 1   IMPACT OF BUDGET 2018 – PERCENTAGE CHANGE IN DISPOSABLE INCOME BY FAMILY TYPE

	Budget 2018 % Change	Proportion Of Families %
Single Employed without Children	-0.1	36.5
Dual Earner Couple without Children	-0.2	4.3
Single Earner Couple without Children	-0.3	5.8
Non-Earning Lone Parent	-0.3	1.3
Single Retired Tax Unit	-0.4	10.2
Single Unemployed without Children	-0.4	2.1
Employed Lone Parent	-0.5	5.3
Dual Earner Couple with Children	-0.5	7.4
Unemployed Couple	-0.5	0.5
Retired Couple	-0.6	9.1
All Other Tax Units	-0.6	9.3
Single Earner Couple with Children	-0.7	8.0

Source: Authors' analysis using SWITCH, the ESRI tax-benefit model, at December 2017 incorporating for 2018 the main Budget 2018 changes in direct tax, welfare, and the January 2018 increase in the National Minimum Wage.

CONCLUSION

Our analysis provides a nationally representative picture of the impact of the main tax and welfare changes in Budget 2018, taking into account the increase in the National Minimum Wage. The analysis is undertaken relative to a distributionally neutral budget, implemented via indexation of tax and welfare parameters in line with expected wage growth.

Key findings include the fact that the overall impact of policy was to reduce incomes somewhat *below* the levels which would have obtained if tax and welfare parameters were simply indexed in line with wage growth. The average loss across all households is close to 0.4 per cent. At low income levels, these reductions, relative to a wage-indexed policy, were in the region of 0.6 per cent; at high income levels, the reductions, were in the region of 0.2 per cent.

Analysis at family unit level shows that small losses are found for all family types. About one-third of families have losses close to the average loss of 0.4 per cent. Some four out of ten families – mainly single persons in employment – have losses of 0.1 to 0.2 per cent. Somewhat greater losses, of 0.6 to 0.7 per cent, are experienced by single earner couples with children, retired couples and a group including those who are not in the labour force (mainly students and those with a disability).

REFERENCES

Bargain, O. and T. Callan (2010). 'Analysing the effects of tax-benefit reforms on income distribution: a decomposition approach'. *Journal of Economic Inequality*, Vol. 8, No. 1, pp. 1-21.

Callan, T., B. Colgan, C. Logue, M. Savage and J.R. Walsh (2015). 'Distributional Impact of Tax, Welfare and Public Service Pay Policies: Budget 2016 and Budgets 2009-2016'. *Quarterly Economic Commentary,* Winter, Dublin: The Economic and Social Research Institute.

Callan, T., C. Keane, J.R. Walsh and M. Lane (2011). 'From Data to Policy Analysis: Tax-benefit Modelling Using SILC 2008'. *Journal of the Statistical and Social Inquiry Society of Ireland.*

Callan, T., B. Nolan, C. Keane, M. Savage and J.R. Walsh (2013). 'The Great Recession, Austerity and Inequality: Evidence from Ireland'. *Intereconomics*, Vol. 48, November/December 2013, Number 6.

Callan, T., B. Nolan, C. Keane, M. Savage and J.R. Walsh (2014). 'Distributional Impact of Tax, Welfare and Public Sector Pay Policies: Budget 2015 and Budgets 2009-2015' in *Quarterly Economic Commentary,* Winter, Dublin: The Economic and Social Research Institute.

Callan, T. and C. Keane (2009). 'Non-cash Benefits and the Distribution of Economic Welfare'. *The Economic and Social Review*, Vol. 40, No. 1, pp. 49-71.

Callan, T., A. Van Soest and J.R. Walsh (2009). 'Tax Structure and Female Labour Supply: Evidence from Ireland'. *LABOUR: Review of Labour Economics and Industrial Relations*, Vol. 23, No 1, March 2009, pp.1-35.

Callan, T., M. Keeney and J.R. Walsh (2001). 'Income Tax and Welfare Policies: Some Current Issues' in Callan, T. and D. McCoy (eds.), *Budget Perspectives 2002*.

Central Bank of Ireland (2017). *Central Bank Quarterly Bulletin*, Quarter 3.

McQuinn, K., C. O'Toole, P. Economides and T. Monteiro (2017). *Quarterly Economic Commentary*, Autumn 2017, Dublin: The Economic and Social Research Institute.

Savage, M. (2017). 'Integrated Modelling of the Impact of Direct and Indirect Taxes Using Complementary Datasets', *The Economic and Social Review, Vol. 48, No. 2.* Available online: www.esr.ie/article/view/732.

IRISH HOUSE PRICES: DÉJÀ VU ALL OVER AGAIN?

Kieran McQuinn [34]

ABSTRACT

The pace at which Irish house prices have grown since 2013 has surprised many observers. The Irish housing market was one of the most affected across the OECD after the international financial downturn of 2007/2008, with prices falling by 54 per cent in nominal values between 2007 and 2013. However since 2013 prices have increased by 50 per cent with recent house price inflation showing no signs of abating. The performance of the housing market currently very much reflects developments in the real economy with Ireland's strong recovery in macroeconomic terms post-2013 resulting in falling unemployment and growing income levels, all set against the backdrop of persistently low Euro Area interest rates. In this paper, using a variety of approaches, recent developments in house prices are appraised; in particular, the sustainability or otherwise of current prices is evaluated and cross-country comparisons are also drawn. The unifying conclusion which emerges is that, given Ireland's expected strong economic performance over the next five years, the domestic market, in the absence of a significant supply response, looks set to experience consistently rising house prices over the medium term.

INTRODUCTION

One of the most notable aspects of Irish economic resurgence post-2013 has been the rapid manner in which housing demand has recovered. Inevitably, in considering the Celtic Tiger era, general economic growth and the housing market became inextricably intertwined with highly adverse consequences for Irish social and economic life. The scale and impact of the post-2008 Irish downturn were profound; substantial levels of household debt had been incurred due to the increase in house prices, thousands of households experienced mortgage arrears and near irreparable damage was done to the entire Irish financial system. The economic and financial independence of the State was threatened by the systemic nature of the mortgage market crisis.

Understanding the linkages between housing demand and key economic variables (often labelled 'fundamentals' in a housing context) is essential in evaluating the sustainability, or otherwise, of house price movements. This is particularly important in the context of a market experiencing significant price increases. In instances where house price growth does not appear to be justified by movements in underlying variables such as income levels, interest rates and demographics, then a 'bubble' or irrational exuberance is said to exist. A number of studies estimate that a bubble of approximately 30 to 40 per cent existed in the Irish property market by 2007 (McQuinn, 2014). When the global downturn occurred, the domestic mortgage market was particularly susceptible to its impact. As unemployment soared between 2008 and 2010 with a resulting contractionary impact on both affordability and market sentiment, Irish property prices went into free-fall with prices experiencing one of the largest corrections across the OECD.

In this paper, following earlier studies, we evaluate the present level of house prices in the Irish market. To ensure that the analysis and consequently the policy implications drawn are not 'model specific', a variety of approaches are adopted; well established econometric models estimating fundamental prices, cross-country comparisons of relative housing affordability and standard house price-to-rent ratios are all examined to see whether the current level of house prices is warranted on the basis of market fundamentals. The results are unambiguous; the Irish market does not yet display any signs of overheating. By international comparisons, Irish prices would appear to be quite affordable. The results suggest that prices, barring some unexpected significant shock or a substantial increase in housing supply, are set to increase over the medium term.

At present it would appear the Irish residential sector can be characterised as a market where prices have almost fully recovered from the substantial declines experienced between 2007 and 2013. However, the fundamental level to which prices normally tend to converge is itself increasing due to factors such as strengthening labour markets. Increased housing demand can also be observed in the significant increase in rents observed in the Irish market. Indeed, since 2007, the recovery in rents predated that of house prices.[35]

The rapid recovery in housing demand contrasts sharply with developments on the supply side of the market. The Irish market was to the fore in international terms in simultaneously experiencing persistent increases in both supply and demand from the early 2000s to 2007. Housing supply averaged 84,000 units per

---

[35] The Rental Tenancies Board Rent Index would suggest that rents started to increase on a consistent basis since Quarter 1, 2012.

annum between 2005 and 2007. However, in the aftermath of the financial crisis, housing supply totalled just over 80,000 between 2010 and 2016. The collapse of the Irish construction sector post-2008 and related ongoing difficulties in the financial sector have all contributed to the present sluggish supply response in the Irish market and is consequently another contributing factor to house price inflation. It is estimated, for example, that annual long-run housing demand in the Irish mortgage market is approximately 30,000 to 35,000 units (see Duffy et al., 2016), whereas total supply in 2017 is forecast to be around 19,000 units.

Most of the developments observed since 2013 in the domestic market have occurred in the absence of any significant increases in mortgage credit; indeed, one could argue that in terms of both the general economy and the housing market in particular, the recovery has been a 'credit-less' one. Coates et al. (2016) estimate that by 2014 up to 60 per cent of housing market transactions were accounted for by cash-only buyers. Since 2016 the provision of mortgage approval is increasing. While a normal, functioning credit market is essential for an economy generally, it does raise the possibility that credit growth in itself could start to become an engine of house price increases as it did in the Irish market post-2002/2003. This would result in prices growing at a greater pace than the underlying fundamental factors in the economy would suggest, inevitably resulting in overheating. As noted in McQuinn (2014), credit bubbles often emerge after periods of sustained improvements in fundamental factors in the economy. Therefore, policymakers must be particularly alert to this possibility. In that context, the presence of the macroprudential policy regime introduced by the Central Bank is the most efficient manner to prevent such a credit bubble emerging.

The remainder of the paper is organised as follows; in the next section we compare house prices and affordability in the Irish property market with developments across countries. A series of econometric models is then used to estimate a 'fundamental house price' with the associated results presented. A subsequent section focusses on the role that credit provision plays in influencing Irish house prices. A final section discusses the policy implications of the results and offers some concluding comments.

A CROSS-COUNTRY PERSPECTIVE

2.1   House price-to-income ratios

Given the turbulent nature of house price movements in the Irish market in the recent past, it is useful to benchmark domestic developments within an international context. The greater availability of cross-country data on housing-related issues enables useful and informative cross-country comparisons to be

drawn in terms of housing affordability. While residential markets can differ significantly in terms of traditional tenure preferences, planning and regulatory regimes and demographic profiles, it is useful to benchmark developments in key ratios such as house prices to disposable income. The International Monetary Fund, for example, regularly publishes such ratios in its evaluation of global house price trends.[36]

Similar to McQuinn (2014) we examine trends using the international house price database maintained at the Federal Reserve Bank of Dallas,[37] which compiles and maintains quarterly house price information for 22 advanced economies from 1975 onwards. The database also contains information on household disposable income for the same period.

TABLE 1   PERCENTAGE CHANGE IN NOMINAL CROSS-COUNTRY HOUSE PRICES 1995 - 2017

Country	Q1 1995 - Q1 2007	Q2 2007 - Q1 2013	Q2 2013 - Q1 2017
Australia	150	23	40
Belgium	116	18	5
Canada	93	21	40
Switzerland	6	26	7
Germany	-4	11	19
Denmark	193	-18	15
Spain	199	-26	2
Finland	153	15	-1
France	145	3	-1
UK	222	-8	28
Ireland	474	-53	52
Italy	84	-11	-8
Japan	-36	-15	-2
South Korea	46	16	9
Luxembourg	148	14	21
The Netherlands	176	-15	14
Norway	155	30	18
New Zealand	159	6	43
Sweden	145	16	37
US	107	-17	21
South Africa	427	23	27
Croatia	121	-14	-1
Israel	27	77	25

*Source:*   www.dallasfed.org/institute/houseprice.

---

[36]   See www.imf.org/external/research/housing/index.htm.
[37]   For more information on this see www.dallasfed.org/institute/houseprice.

In Table 1 international house price growth across the period 1995 to 2017 is presented. The period is split into three periods; (i) 1995 to 2007, where house prices increased significantly across the OECD, (ii) 2007 to 2013, where house prices fell substantially across a number of countries and (iii) the recovery period 2013 to the present. From the table, the significant performance of the Irish market is evident across all three sub-periods. Amongst all the countries, Ireland registered the largest increase in prices up to 2007; it subsequently experienced the largest decline post-2007 and has had the most robust recovery in the latest sub-period.

Using data on disposable income from the same database, it is possible to create house price-to-income ratios (P_t/I_t).[38] Both McQuinn (2014) and Grossman et al. (2013) have generated the same ratios to track trends in affordability across countries and time.

FIGURE 1   RATIO OF HOUSE PRICES TO DISPOSABLE INCOME FOR A SELECT SUB-SAMPLE OF COUNTRIES Q1 2000 - Q1 2017
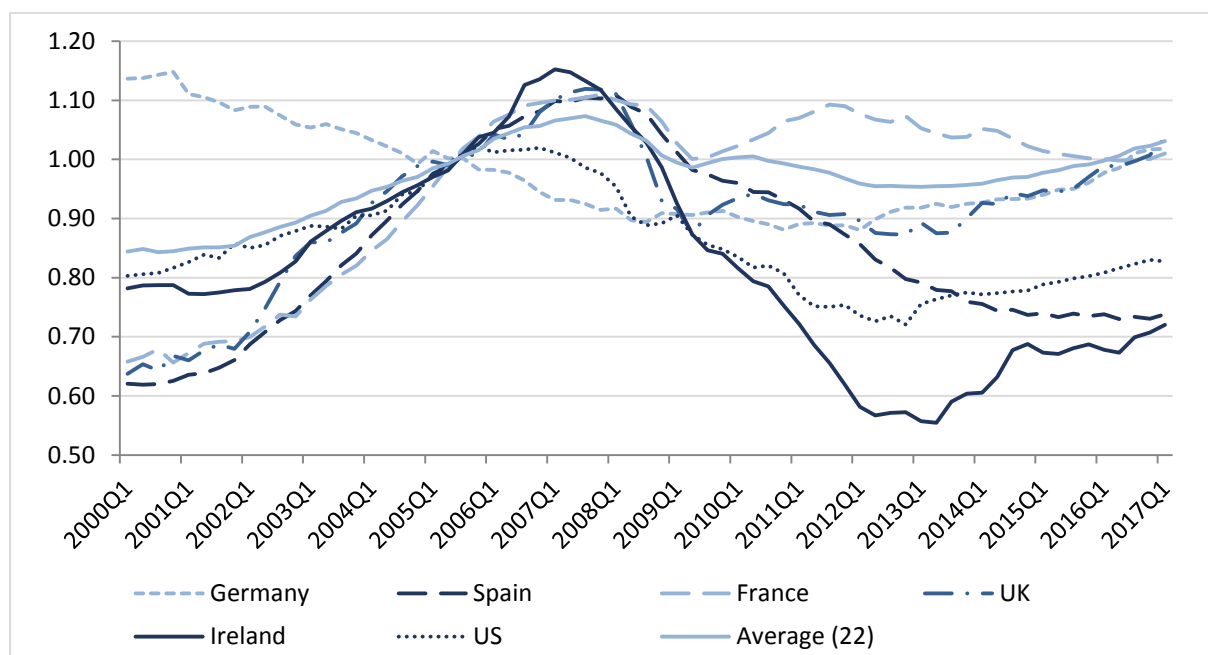
Source: Author's analysis.

Figure 1 plots the ratio for a select sample of countries. From the graph, it is clear that the significant increase in Irish house prices up to 2007 caused the ratio of

---

[38]   The house price index used in the database is consistent with the US FHFA Quarterly Nationwide House Price Index for existing single-family houses (formerly called OFHEO house price index). Each house price index is seasonally-adjusted and then rebased to 2005=100. The house price indexes are expressed in nominal terms, and also in real terms using the personal consumption expenditure (PCE) deflator of the corresponding country with the same base year of 2005=100. The disposable income series is quoted in per capita terms using working age population of the corresponding country and similarly expressed in nominal and real terms (the latter with the PCE deflator).

price to income to increase sharply even at a time when Irish income levels were also rising quite strongly. However post-2008, the Irish ratio fell quite dramatically before stabilising around 2013 and increasing thereafter. However, even with the significant recovery in house prices post-2013, the data suggest that according to international standards, Irish house price-to-income affordability is currently quite low. For example the average ratio across the 22 countries is just over 1 in 2017 compared with an Irish score of just over 0.7. It is worth noting that the index is based on the movement from a common base of 100 in 2005.

It is interesting to examine, given Irish disposable income levels, what a counter-factual Irish house price would look like given an average house price-to-income ratio. Therefore, we generate an alternative Irish house price for the period 2000 to the present. We take the average cross-country ratio of house prices to disposable income $\left[\frac{P_t}{I_t}\right]^A$ plotted in Figure 1 and multiply it by the Irish index of disposable income:

$$P_{It}^{CF} = I_{It} \times \left[\frac{P_t}{I_t}\right]^A \qquad (1)$$

The resulting price is compared with actual Irish house prices in Figure 2 for the period in question.

FIGURE 2   ACTUAL AND COUNTER-FACTUAL IRISH HOUSE PRICES: Q1 2000 - Q1 2017
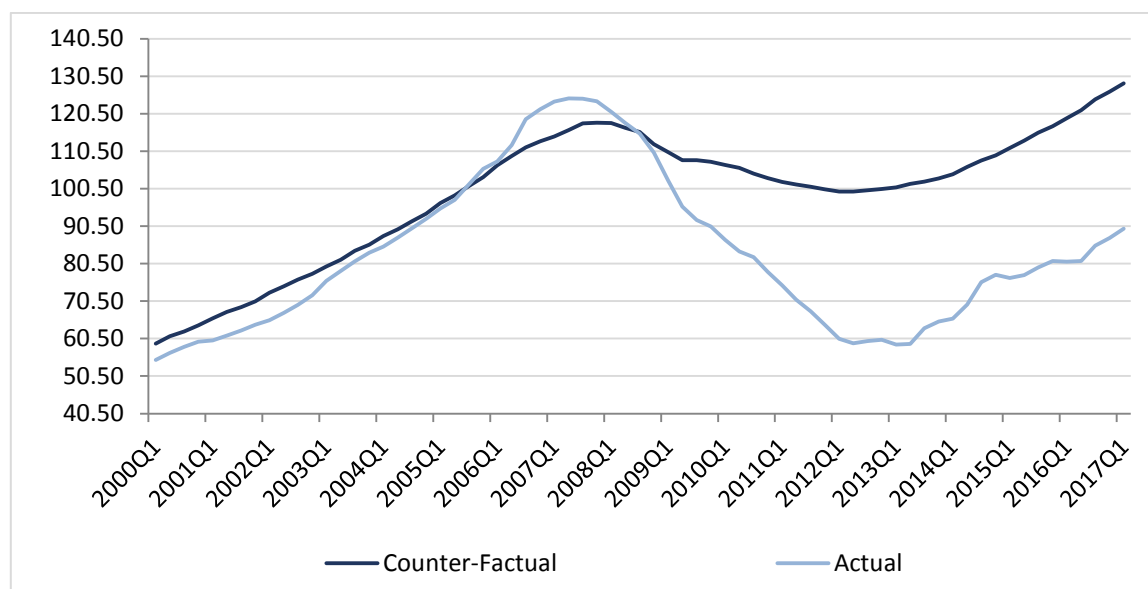
Source: Author's analysis.

As can be seen, up to 2006 the actual and counter-factual prices are closely aligned. After that, the actual price increases to a greater extent than the counter-factual; however when both prices start to fall in early 2008, the actual

price falls significantly more than the counter-factual. For example, the counter-factual falls by a maximum of 16 per cent from its peak, whereas the actual price falls by 53 per cent. Both sets of prices start to rise from 2012/2013 onwards, however the counter-factual price in 2017 is now 9 per cent above its peak 2007 level, whereas the actual price is still 28 per cent below its equivalent peak.

What this suggests is that based on actual Irish disposable income and a cross-country average of the relationship between disposable income and house prices, Irish house prices over the period 2000 to 2017 experienced overvaluation in the 2006/2007 period and significant undervaluation in the post-2008 timeframe. It suggests the market is still somewhat undervalued in 2017.

2.2   House price-to-rent ratios

Another way of evaluating the sustainability of house prices is to use a more finance-based approach like the house price-to-rent ratio. In studies such as Gallin (2004) and Himmelberg et al. (2005) rents are assumed to reflect the long-run equilibrium value of housing services. Consequently, movements in the house price-to-rent ratio can indicate whether the housing market is in equilibrium or not. In Figures 3 and 4 we plot aggregate rents for the Irish market and the price-to-rent ratio over the period 1990 to 2017.[39]

Reflecting the strong growth in the economy from the mid-1990s onwards, rent levels escalated consistently until 2007. Like house prices, rents declined significantly post-2008; however they appeared to reach their trough levels in mid-2010 almost three years before house prices did. Since 2011, rents have increased consistently.

The corresponding house price-to-rent ratio (plotted in Figure 4) indicates a discrete change in the ratio from about 1997 onwards. The ratio reached a peak in 2007 before declining sharply afterwards until 2012. It has remained static for most of the period since then. While rents are rising significantly, reflecting the strong underlying performance of the economy, the fact that the ratio is both relatively stable and at 11.5, the lowest it has been since 1998, would again suggest that no bubble or overvaluation is apparent in the Irish property market at present.

---

[39]   Rental values are those reported by the Central Statistics Office (CSO).

Again, given the volatile nature of the Irish market it is informative to put this in an international context. In Figure 5, the current Irish ratio is compared with similar ratios for a select set of US cities for 2017. From the chart it is evident that the vast majority of the cities covered have ratios which are greater than that of the Irish market – of the 81 cities only three have ratios that are less than 11.

Of course the house price-to-rent ratio may vary somewhat within the Irish market. For example the house price-to-rent ratio for Dublin may differ from the rest of the country. To that end in Figure 6, we present the house price-to-rent ratio for Dublin and the country as a whole. The underlying rental level used is now that estimated by the ESRI for the Rental Tenancies Board (see Lawless et al. (2017) for details).[40] From the graph it is evident that while there is some difference in the levels between the different ratios, the trends are very similar.[41] While the ratio is clearly higher for the Dublin area, it is worth noting that the current level of just under 15 would still place Dublin at the lower end of the distribution in Figure 5.

More generally, it is worth noting that equating house prices with rents is not above criticism in the literature. For example, Sinai and Souleles (2003) have noted that such an assumed relationship essentially ignores potential transaction costs and certain risks involved in both renting and owning a property.

---

[40] The reason for using the different rental index is that unlike the rent index provided by the CSO, the ESRI/RTB index allows for a breakdown between Dublin and the rest of the country.
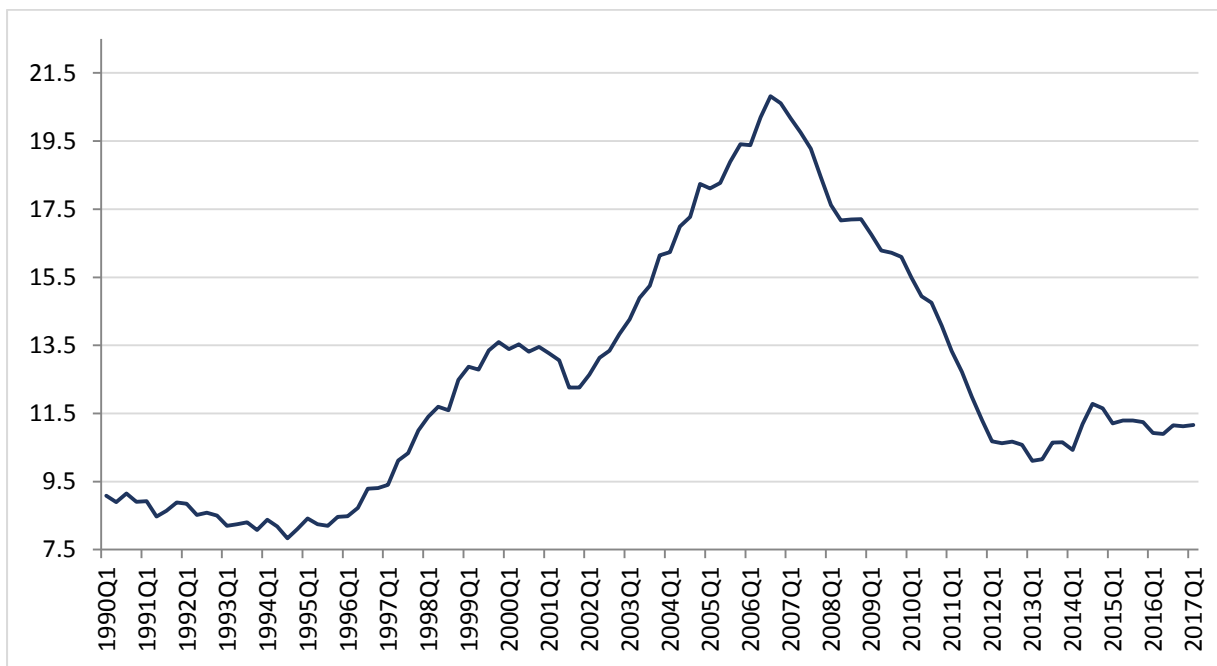
[41] The difference between the CSO and RTB index at the national level may be attributed to compositional issues. Also, the RTB index covers only new rental agreements.

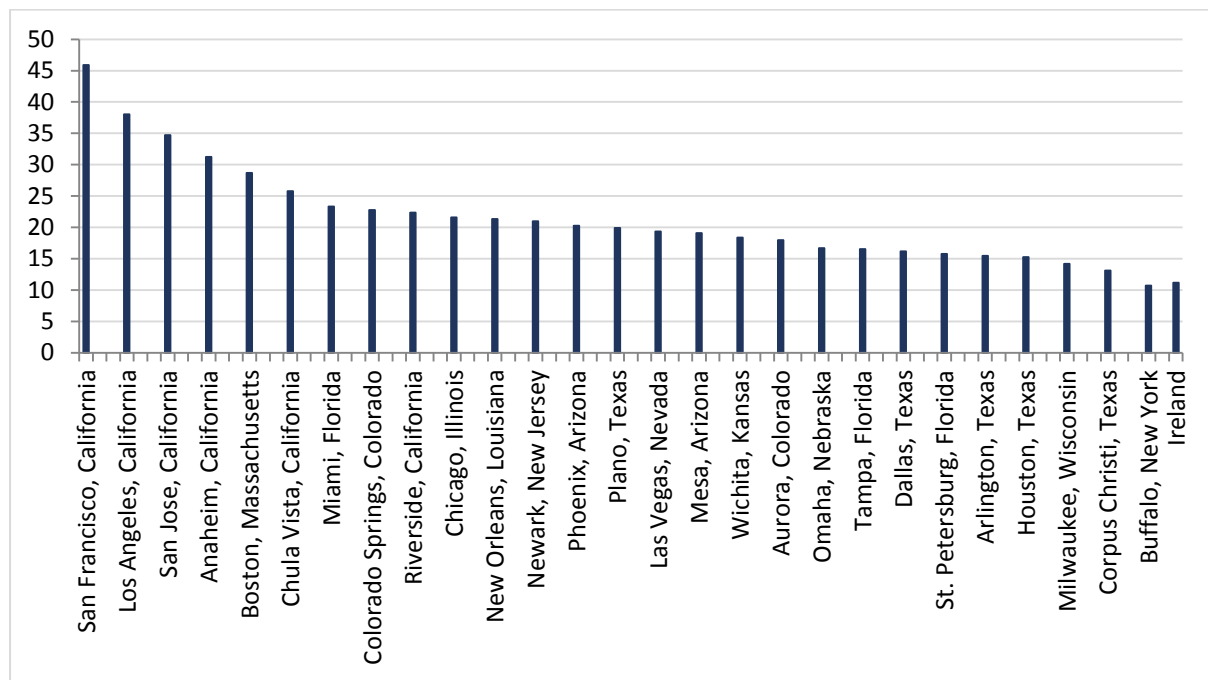**FIGURE 3   AGGREGATE IRISH RENTAL LEVELS: Q1 1990 - Q1 2017**
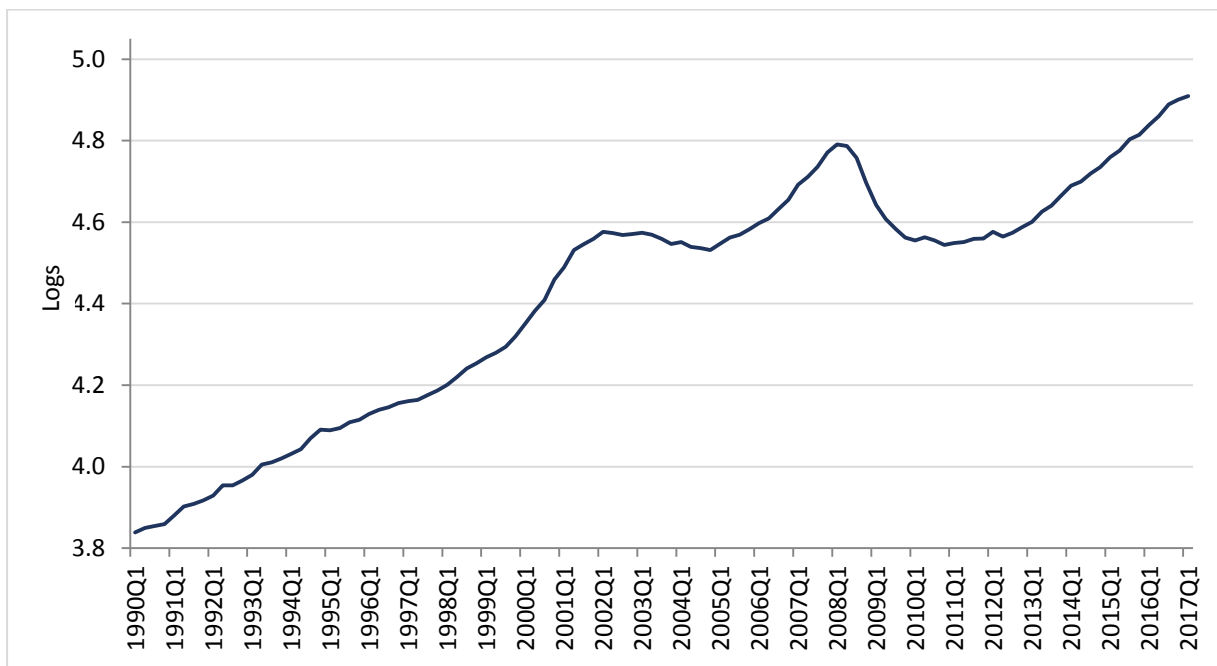
Source: Author's analysis.

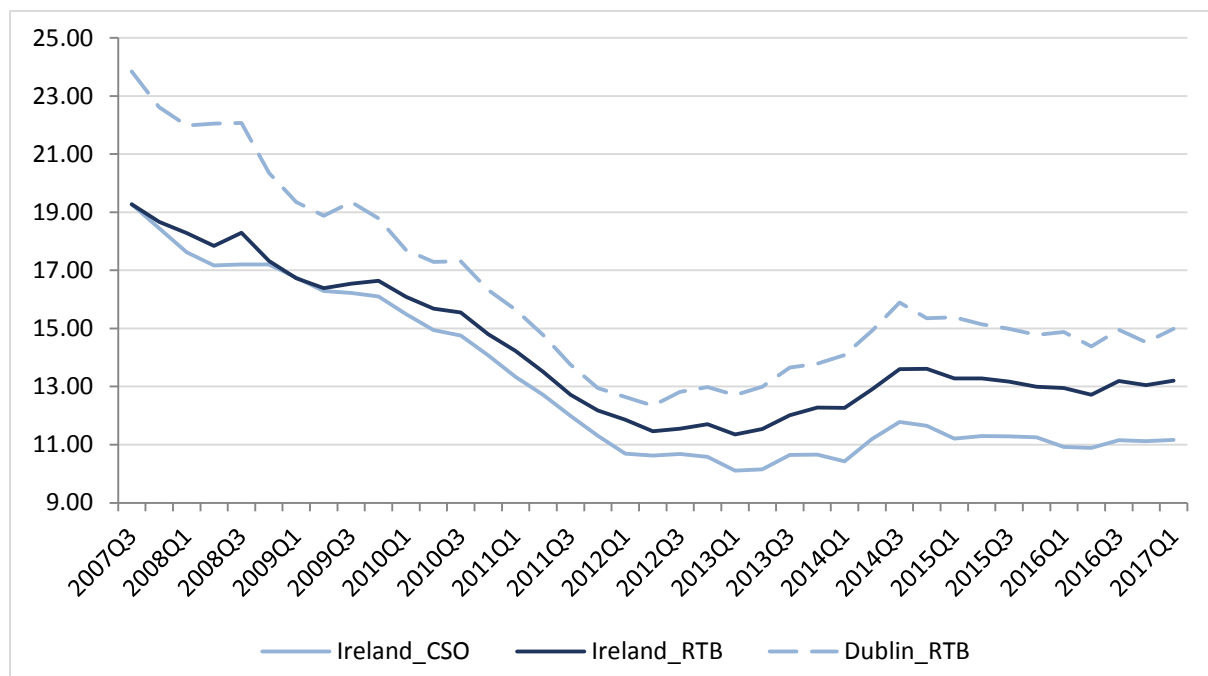**FIGURE 4   IRISH HOUSE PRICE-TO-RENT RATIO: Q1 1990 - Q1 2017**

Source: Author's analysis.

FIGURE 5   HOUSE PRICE-TO-RENT RATIOS FOR IRELAND AND SELECT US CITIES, 2017

Source: Author's analysis and Smartasset; https://smartasset.com.

FIGURE 6   HOUSE PRICE-TO-RENT RATIOS FOR DUBLIN AND IRELAND USING THE RTB AND CSO RENTAL INDICES Q3 2007 - Q1 2017

Source: Author's analysis.

ECONOMETRIC MODELS

In this section we use a suite of econometric models to determine a fundamental Irish house price. This approach is particularly popular in the international house

price literature and has been used extensively in an Irish context over the past 20 years to evaluate the performance of the market. Examples include Murphy (2005), Roche (2001; 2003), McQuinn and O'Reilly (2007), Kelly and McQuinn (2014) and McQuinn (2014). The attraction of the econometric approach is that, while finance based approaches assume a relatively narrow specification of house price determinants, econometric models enable house prices to be influenced by a broader set of variables. Furthermore, using a suite of models reduces the possibility that any policy conclusion derived on the basis of the results is 'model-specific'.

Three different econometric specifications are used in this approach:

1. House prices are assumed to be a function of demographics, disposable income and unemployment rates,

   This model is a variant of that specified and estimated in Kelly and McQuinn (2014). They discuss how unemployment, in particular, appears to be strongly related to movements in Irish house prices.

2. House prices are assumed to be a function of affordability (a mortgage annuity combination of income and interest rates) and the ratio of the housing stock to population. This is a variant of the affordability model specified and estimated in McQuinn and O'Reilly (2007). The affordability model uses the following annuity formula where A_t is defined as follows:[42]

$$A_t = \omega Y_t \left(\frac{1 - (1 + R_t)^{-\tau}}{R_t} \right) \quad (2)$$

   The annuity is the fraction of current disposable income (ωY_t) that goes toward mortgage repayments and is discounted at the current mortgage interest rate (R_t) for a horizon equal to the term of the mortgage τ.[43] The model assumes that the demand for housing is mainly a function of the amount that prospective house purchasers can borrow from financial institutions and this, in turn, is dependent on current disposable income and the existing mortgage interest rate.

3. House prices are assumed to be a function of disposable income per capita, the user cost of capital and the housing stock per capita.[44]

---

[42] This does assume that on average all housing transactions have some degree of mortgage credit.
[43] Details surrounding the assumptions in (2) are discussed in Technical Appendix 2 of the paper.
[44] In the estimation of the model we find the user cost of capital is not significant.

This is the standard inverted demand function which has been applied in the housing literature in applications such as Peek and Wilcox (1991), Muellbauer and Murphy (1994; 1997), Meen (1996; 2000), and Cameron et al. (2006).

The models presented here are not an exhaustive list of those used in the literature. For example, hedonic price models, as outlined in Rosen (1974), employ regression techniques to control for various sources of heterogeneity in prices using observations on covariates and dummy variables that reflect implicit structural and locational prices.

Details of the econometric estimation are presented in the Appendix.[45] In Figure 7 the fundamental house prices from the three models are compared with actual house prices, while in Figure 8 the deviation between each fundamental model and actual price is shown.

FIGURE 7   ACTUAL AND FUNDAMENTAL REAL HOUSE PRICES Q1 2000 - Q1 2017
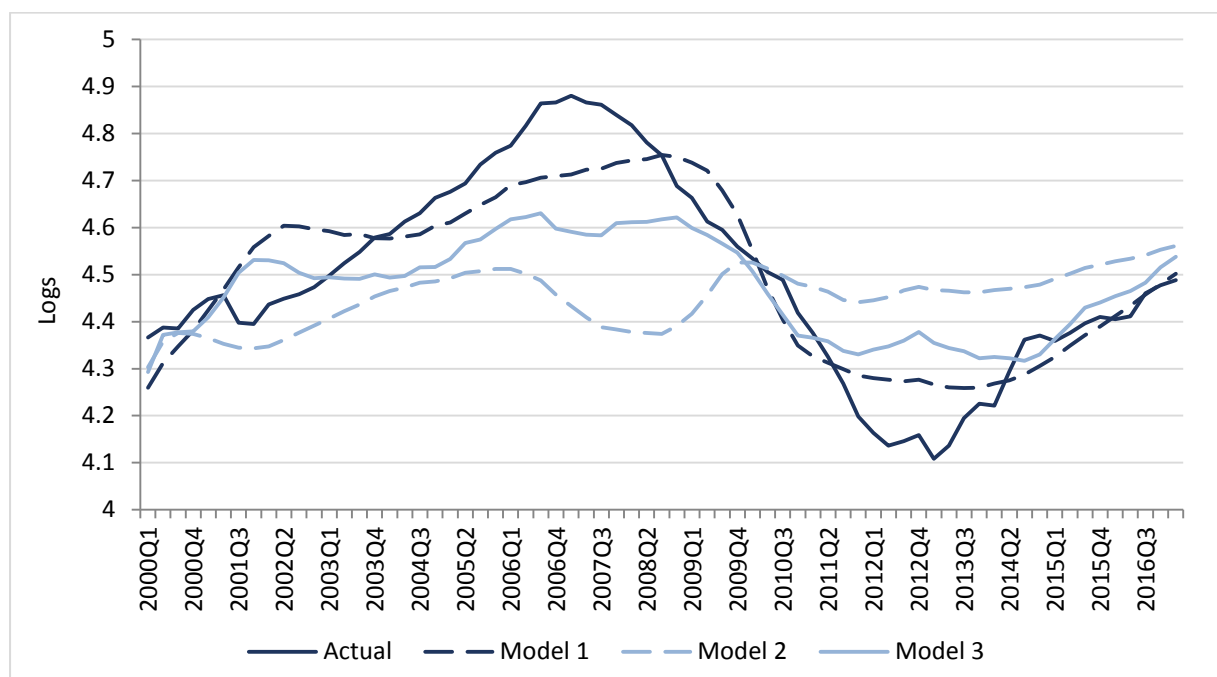
Source: Author's analysis.

---

[45]   The RATS code along with the data used in all estimation is available, upon request, from the author.

**FIGURE 8   PERCENTAGE   DIFFERENCE   BETWEEN   ACTUAL   AND   FUNDAMENTAL   PRICES
Q1 2000 – Q1 2017**
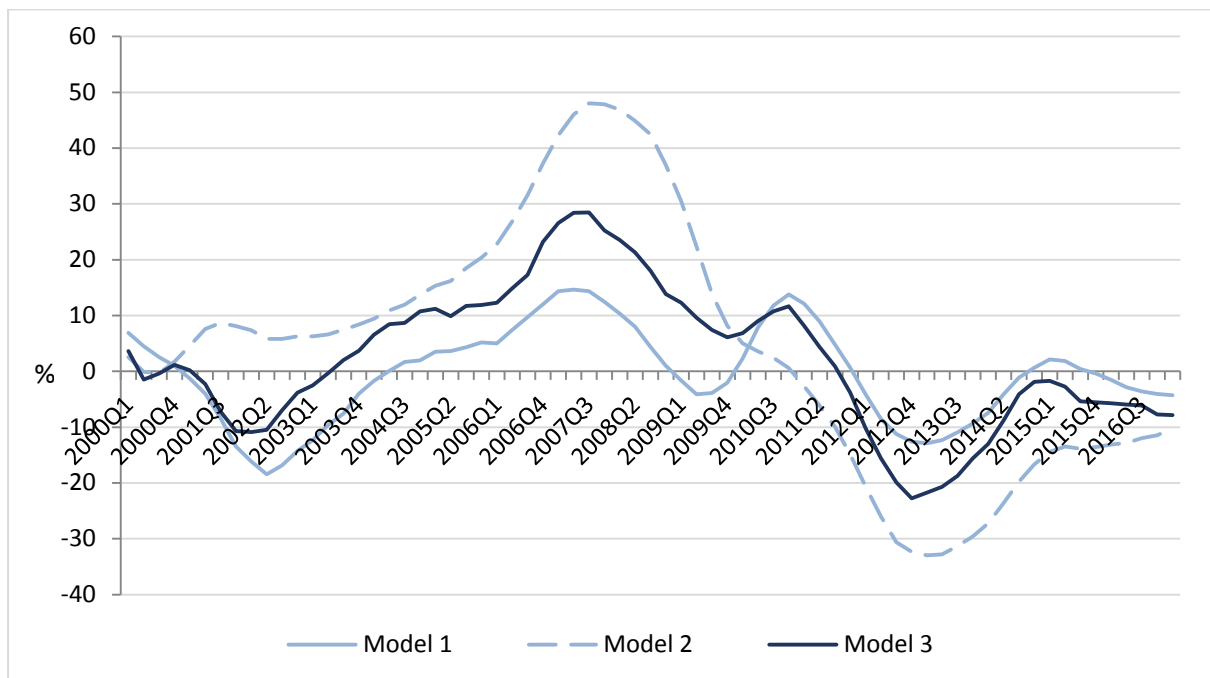
Source: Author's analysis.

The results show that while the fundamental prices can differ somewhat from each other over the period, at present the results are broadly similar. Namely, while fundamental and actual prices have converged significantly over the past few years, actual prices are still very much explained by key economic and demographic factors in the Irish economy. Indeed, technically there is still some undervaluation in the Irish market, however this is now less than 10 per cent. In McQuinn (2014), which estimated fundamental prices up to the end of 2013, the degree of undervaluation was somewhere in the region of 12 to 20 per cent.

Overall, the results of the econometric models suggest, along with the earlier analysis, that house prices are still explained by fundamental factors within the Irish economy. While the absence, currently, of a bubble in house prices is somewhat reassuring, it is worth noting that house prices can vary significantly due to changes in fundamental variables. Nonetheless, the expected robust performance of the Irish economy generally over the next couple of years is likely to result in continued upward pressure on prices.

3.1   Future Irish house prices: an affordability scenario

To explore the future implications for the housing market, we use the results of one of the models above to generate forecasts of Irish prices over the period 2018 to 2020. In particular we use Model 2 which enables us to examine the

implications of future trends in affordability, the housing stock and population levels on house prices. The forecast house price model is in error correction format. Using the error-correction format allows for any deviation between actual house prices and the long-run level to impact on the manner in which house prices evolve into the future. So, for example, if house prices are currently below their long-run level, this would, ceteris paribus, cause future house prices to increase. Using an error correction model in such a way is very common in the literature and has been applied in an Irish case in Kelly and McQuinn (2014) and McQuinn (2014). The full details of the model are summarised in Technical Appendix 2 of the paper.

To generate forecasts, future values for 2017 to 2020 are required for the capital stock, population levels, interest rates and disposable income. Following the latest *Quarterly Economic Commentary* (QEC) forecasts (McQuinn and O'Toole, 2017), housing supply is assumed to increase to 18,500 in 2017 and 23,400 in 2018. For 2019 and 2020, housing supply is assumed to increase to 29,700 and 36,700 respectively. Population growth is assumed to increase by the same rate as the historical average over the period 2012-2016.[46] Disposable income is also assumed to increase in line with the most recent QEC forecasts as is the personal consumption deflator.[47]

Recently, there has been some commentary about the possibility of future interest rate increases across the Euro Area (see Claeys and Efstathiou (2017) for example). To illustrate the impact of changes in interest rates on prices, two interest rate paths are assumed for the forecasting exercise. One scenario leaves interest rates constant over the forecast period, while a second scenario assumes a gradual tightening of future monetary policy with mortgage interest rates increasing as a result. The two paths are presented in Figure 9.

---

[46] This is approximately 0.009882 per cent per annum.
[47] In nominal terms disposable income is assumed to grow by 7.2 per cent, 5 per cent, 4 per cent and 4 per cent for 2017, 2018, 2019 and 2020 respectively.

FIGURE 9   HISTORICAL AND FUTURE ASSUMED MORTGAGE INTEREST RATES (%): Q1 2000 – Q4 2020
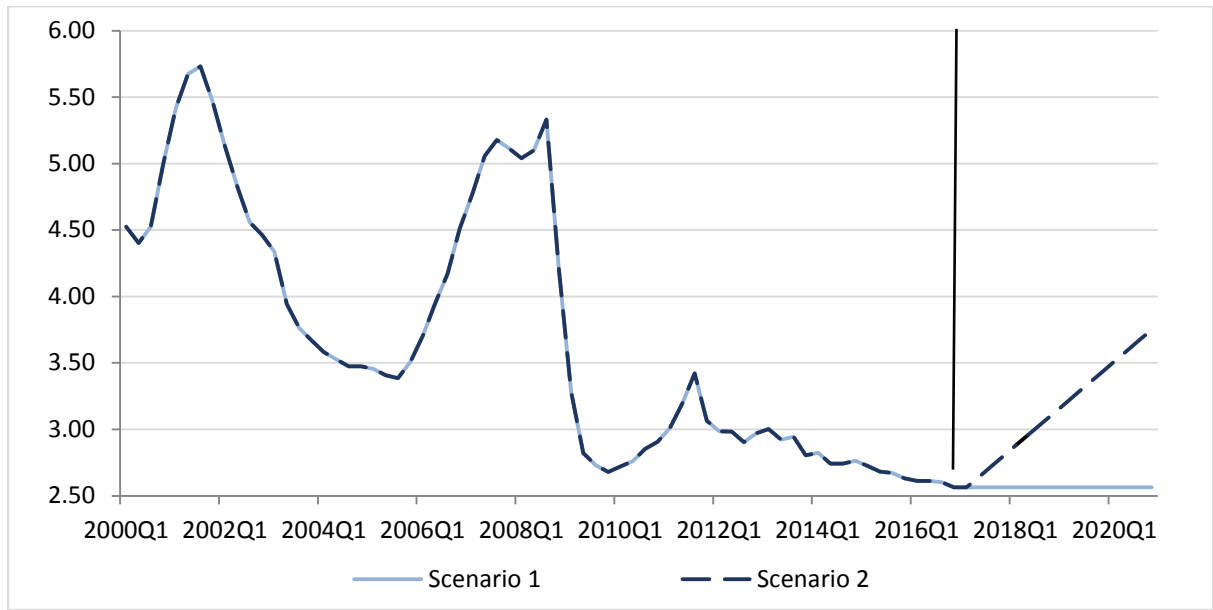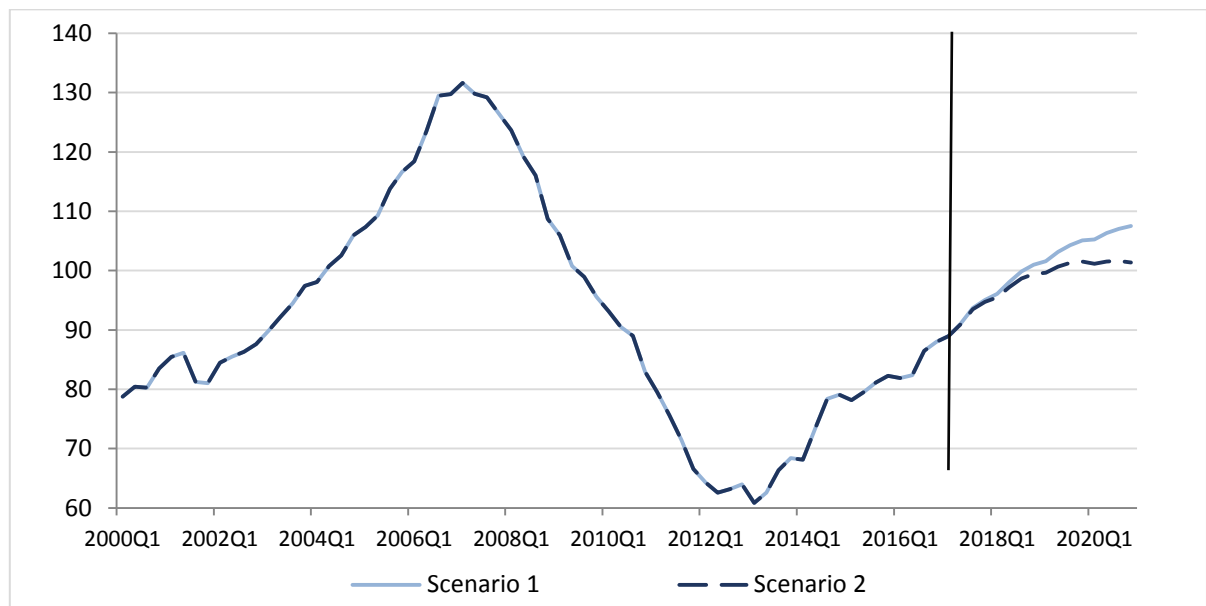

Source: Author's analysis.

The second scenario assumes that by the end of 2020, mortgage interest rates will have increased to 3.75 per cent from 2.56 per cent at present.

The corresponding real house price forecasts are presented in Figure 10.

FIGURE 10   HISTORICAL AND FUTURE FORECAST REAL IRISH HOUSE PRICES (INDEX): Q1 2000 – Q4 2020

Source: Author's analysis.

From the graph it is evident that under both scenarios, Irish house prices are expected to increase over the next four years. In real terms, under Scenario 1, prices are forecast to grow by 20 per cent over the period, while under the higher interest rate path, the model indicates that prices will increase by 14 per cent.[48]

CREDIT AND THE IRISH HOUSING MARKET

The scenario above assumes that prices will grow in line with changes in fundamental variables in the economy. Underpinning this is the assumption that there is some steady-state relationship between credit provision and these fundamental variables. However, as evidenced by developments in the Irish residential market, changes in mortgage credit can also have a key impact on house prices. A number of studies, such as Fitzpatrick and McQuinn (2007), Addison-Smyth et al. (2009) and McCarthy and McQuinn (2017), have examined the role that changes in credit conditions played in Irish house price inflation up to 2007. As a result, it is important to assess the implications that credit conditions can have for future Irish house prices.

To relax the assumption about a steady-state level of credit provision, we augment the standard inverted house price equation used in the previous section (Model 3) to include an indicator of credit supply in the Irish mortgage market. The model, which was originally specified and estimated in Duca et al. (2011), has also been estimated in an Irish context by Kelly and McQuinn (2014). The indicator is created by taking the observed aggregate loan-to-value ratio and 'filtering' out demand-side factors. By this we mean the observed loan-to-value is regressed on a series of demand-side variables such as income levels and the unemployment rate. The 'adjusted' loan-to-value variable is then the observed ratio with the demand-side components subtracted or netted off and represents an indicator of changes purely in credit supply conditions.

When the indicator is added to the house price equation we get a coefficient estimate of 0.42 (see Table A5 in the Appendix for details). As the equation is in log-log form, this coefficient can be interpreted as an elasticity, i.e. a 1 per cent increase in the credit supply indicator results in house prices increasing by over 0.4 per cent. While changes in the supply of residential mortgage credit have been negative through most of the recovery, positive growth rates have been in evidence since the mid-point of 2016 (see Figure 11). Any significant increase in credit will have an additional impact on house price growth above and beyond that of economic fundamentals.

---

[48]   As a further sensitivity analysis, we hold the housing supply level fixed over the period 2017-2020 at 18,500 units per annum. This results in house prices being 0.5 per cent higher at the end of the period than under the baseline case.

FIGURE 11   ANNUAL GROWTH RATES (%) IN CREDIT FOR HOUSE PURCHASING: Q4 2011 – Q1 2017
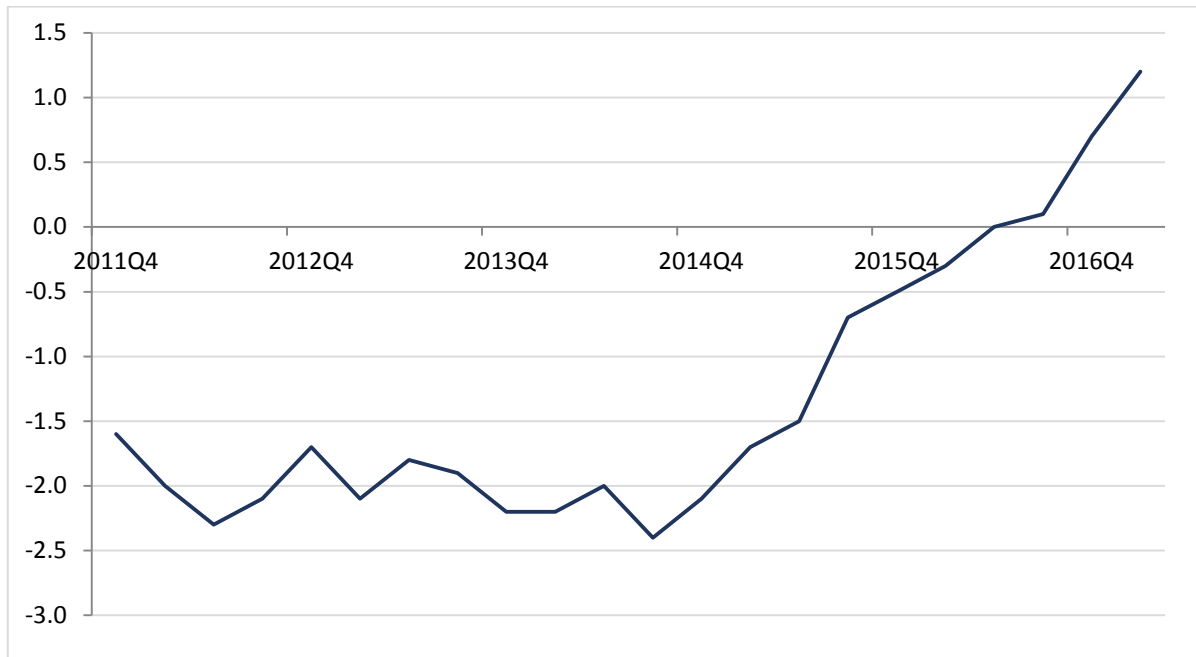
Source: Author's analysis.

Recent work has also sought to provide an alternative indicator of mortgage credit provision in an international context (McQuinn, 2017). The basic idea behind this approach is to provide time-varying estimates of the relationship between the affordability variable (A_t) and house prices in Model 2 estimated earlier. The standard model is

$$p_t = \alpha + \beta a_t \qquad\qquad (3)$$

where p_t is the log of real house prices and a_t is the log of the annuity formula in Equation (2). In the original application β is fixed or does not vary through time. In the subsequent McQuinn (2017) application β is now allowed to time vary. As this is again a log-log equation the coefficient on the affordability variable may be considered the elasticity of house prices with respect to affordability. By allowing the coefficient to change over time, this is recognising that the elasticity of house prices with respect to affordability will vary through time, mainly as a result of changing credit conditions. The elasticity can vary due to changing loan-to-value and debt-to-income ratios in the market. In Figure 12, the changing elasticity in an Irish context is presented.

FIGURE 12   ELASTICITY OF HOUSE PRICES WITH RESPECT TO AFFORDABILITY: Q1 2000 – Q1 2017
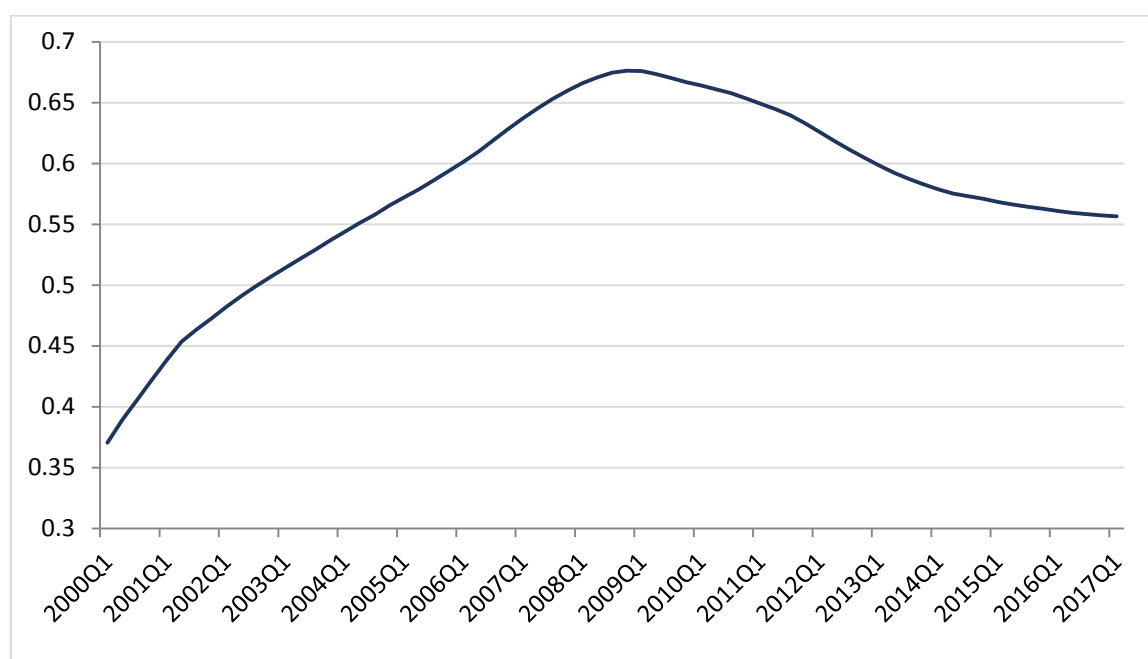
Source: Author's analysis.

The clear increase in the elasticity in the period up to 2008 is evident; changing credit conditions enabled Irish households to secure larger mortgages for given income levels and interest rates. Thereafter, the elasticity declined sharply as credit conditions contracted due to the implications of the financial crisis. What this demonstrates is that over a relatively short period of time, changing credit conditions – by increasing this elasticity – can have significant implications for housing demand.

POLICY IMPLICATIONS AND CONCLUDING COMMENTS

The close relationship observed since the mid-1990s between general economic activity and the Irish housing market is also a characteristic of the recent recovery. Housing demand has increased significantly since 2013 with prices growing in a persistent manner. The reason for this increase are twofold (i) prices overcorrected in the 2008-2013 period and (ii) fundamental economic variables have improved substantially over the recent period. Therefore, actual prices are converging on a fundamental price which itself is increasing.

This conclusion is arrived at using both models of economic fundamentals in the Irish market and cross-country comparisons. Indeed some of the cross-country indicators would actually suggest that the Irish market is still undervalued.

Although in converging to their fundamental levels, prices are still set to witness significant increases over the medium term. This is mainly due to the expected

strong growth envisaged in the Irish economy over this period and the continued likely accommodative nature of Euro Area monetary policy. Both of these developments will fuel increased levels of affordability amongst prospective homeowners, in turn leading to greater demand.

Given the strong price growth envisaged, any Government policy applied to the Irish market clearly needs to focus on increasing housing supply. Unfortunately, as noted in a cross-country assessment of housing supply policies (Morley et al., 2015), there are relatively few options available. The recent Budgetary announcement concerning the introduction of the proposed site tax is a welcome development. Certainly, given the expected strong growth of prices, the Government should avoid any policies which would further increase housing demand.

One issue which will require ongoing, critical assessment is likely future developments in the provision of credit. Much of the persistent increases in house prices observed since 2013 have occurred in the absence of any credit growth. Consequently, as the Irish banking sector slowly heals itself and economic growth continues, credit conditions are likely to become more expansive over the medium term. The danger is that similar to the 2003-2007 period, credit growth, itself, will fuel greater house price inflation. In that regard the new macroprudential policy framework adopted by the Irish Central Bank will be hugely important. As suggested in Duffy and McQuinn (2014), an integral component of this framework should be an evaluation of house prices vis-à-vis fundamental levels and an assessment of the growth of the stock of mortgage credit. Based on the analysis conducted here, any future changes in macroprudential policy should not serve to increase affordability, i.e. by easing loan-to-value or loan-to-income restrictions. Furthermore, over the medium term, if any imminent overvaluation is detected in the housing market, macroprudential policy should act in a counter-cyclical manner and actively seek to restrict housing demand due to the extent that is fuelled by credit growth and hence price growth.

REFERENCES

Addison-Smyth, D., K. McQuinn and G. O'Reilly (2009). 'Modelling credit in the Irish mortgage market'. *The Economic and Social Review*, Vol. 40(4), pp.371-392, 2009.

Cameron G., J. Muellbauer, and A. Murphy. 2006. 'Was There a British House Price Bubble? Evidence from a Regional Panel.' CEPR Discussion Paper No. 5619.

Claeys G. and K. Efstathiou (2017). 'Is the recent increase in long-term interest rates a threat to euro-area recovery?' Bruegel Policy Contribution Issue No.14, May.

Coates D., J. McNeill and B. Williams (2016). 'Estimating cash buyers and transaction volumes in the residential property sector in Ireland'. Central Bank of Ireland Quarterly Bulletin signed article, QB3.

Duca, J.V., J. Muellbauer and A. Murphy (2011). 'House prices and credit constraints: Making sense of the U.S. experience', *Economic Journal*, Vol. 121, pp. 533-551.

Duffy, D. and K. McQuinn (2014). 'Assessment of proposed macro-prudential policy measures', Appendix, *Quarterly Economic Commentary*, Summer, Dublin: The Economic and Social Research Institute, October.

Duffy, D., McQuinn K. and N. McInerney (2016). 'Macroprudential policy in a recovering property market: Too much too soon? *International Journal of Housing Policy*, Vol. 16, No. 4 pp.491 - 523.

Fitzpatrick, T. and K. McQuinn (2007). 'House prices and mortgage credit: Empirical evidence for Ireland', *The Manchester School*, Vol. 75, Number 1, pp.82-103, 2007.

Gallin, J. (2004). 'The long-run relationship between house prices and rents, Finance and Economics' Discussion Series 2004-50, Board of Governors of the Federal Reserve System.

Grossman, V., A. Mack, E. Martinez-Gracia, E. Pavlifis, I. Paya, D. Peel and A. Yusupova (2013). 'Monitoring housing markets for episodes of exuberance: An application of the Philips et al. (2012, 2013) GSADF test on the Dallas fed international house price database', Federal Reserve Bank of Dallas Globalisation and Monetary Policy Institute Working Paper No. 165.

Hendry, D. F. (1995) 'Econometrics and Business Cycle Empirics', *Economic Journal*, 105, 433, 1622-1636.

Himmelberg, C., C. Mayer and T. Sinai (2005). 'Assessing high house prices: Bubbles, fundamentals and misperceptions,' *Journal of Economic Perspectives*, Vol. 19, Winter, pp.67-92.

Kelly, R. and K. McQuinn (2014). 'On the hook for impaired bank lending: Do sovereign-bank inter-linkages affect the net cost of a fiscal stimulus?' *International Journal of Central Banking*, Forthcoming September 2014.

Lawless M., McQuinn K. and J. Walsh (2017) 'Identifying rent pressures in your neighbourhood: A new model of Irish regional rent indicators'. *Economic and Social Research Institute* (ESRI) Working Paper 567, 2017.

McCarthy Y. and K. McQuinn (2017). 'Credit conditions in a boom and bust property market: Insights for macro-prudential policy' *The Quarterly Review of Economics and Finance*, Volume 64, pp. 171-182, May.

Meen, G. (1996). 'Ten Propositions in UK Housing Macroeconomics: An Overview of the 1980s and Early 1990s.' *Urban Studies* 33 (3): 425-44.

Meen, G. (2000). 'Housing Cycles and Efficiency.' *Scottish Journal of Political Economy* 47 (2): 114-40.

McQuinn, K. (2014). 'Bubble, bubble, toil and trouble?' An assessment of the current state of the Irish housing market, special article, *Quarterly Economic Commentary*, Summer, Dublin: The Economic and Social Research Institute, August.

McQuinn K. (2017). The changing relationship between affordability and house prices: A cross-country examination. *Economic and Social Research Institute (ESRI) Working Paper* 560.

McQuinn K. and C. O'Toole (2017). *Quarterly Economic Commentary*, Autumn, Dublin: The Economic and Social Research Institute, October.

McQuinn, K. and G. O'Reilly (2007). 'A model of cross-country house prices'. Central Bank of Ireland Research Technical Paper 5/RT/07, 2007.

McQuinn, K. and G. O'Reilly (2007). 'Assessing the role of income and interest rates in determining house prices'. *Economic Modelling*, Vol. 25 pp.377-390.

Morley C., Duffy D. and K. McQuinn (2015). 'A review of housing supply policies, Research article, *Quarterly Economic Commentary*, Winter, Dublin: The Economic and Social Research Institute, December 2015.

Muellbauer, J. and A. Murphy (1994). 'Explaining Regional House Prices in the UK', University College Dublin, Department of Economics Working Paper No. 94/29.

Muellbauer, J. and A. Murphy (1997). 'Booms and busts in the UK housing market', *Economic Journal*, 107, 1701-1727.

Murphy, A. (2005). Modelling Irish house prices: A review and some new results', Nuffield College Oxford. Mimeo www.nuff.ox.ac.uk/Users/MurphyA/Irish%20House%20Prices.zip.

Peek, J. and J. A. Wilcox. 1991. 'The Measurement and Determinants of Single-Family House Prices', Federal Reserve Bank of Boston Working Paper No. 91-7 (December).

Roche M. (2003). 'Will there be a crash in Irish house prices?' *Quarterly Economic Commentary*: Special Article, Economic and Social Research Institute (ESRI), Vol. 2003(4-Winter), pp.1-16.

Roche M. (2001). 'The rise in house prices in Dublin: Bubble, fad or just fundamentals', *Economic Modelling*, Elsevier, Vol. 18(2), pp.281-295, April.

Rosen S. (1974). 'Hedonic prices and implicit markets: Product differentiation in pure competition', *Journal of Political Economy* 82.1, pp. 34-55.

Sinai T. and N.S. Soules (2003). 'Owner-occupied housing as a hedge against rent risk', NBER working paper No. 9462, January.

TECHNICAL APPENDIX 1

TABLE A1   LOG OF REAL HOUSE PRICES – MODEL 1

Variable	Coefficient	T-Stat	P-Value
Log (Population)	0.835	5.58	0.00
Log (disposable income per capita)	0.642	9.91	0.00
Log (unemployment rate)	-0.376	-21.22	0.00
$\overline{R^2}$	0.97		

Source: Author's analysis.
Note: Model estimated over the period: 1981:1 – 2017:1.

TABLE A2   LOG OF REAL HOUSE PRICES – MODEL 2

Variable	Coefficient	T-Stat	P-Value
Log (Affordability)	0.756	7.021	0.00
Log (Capital stock per capita)	-1.003	-1.907	0.0584
$\overline{R^2}$	0.77		

Source: Author's analysis.
Note: Model estimated over the period: Q1 1980 – Q1 2017.

TABLE A3   LOG OF REAL HOUSE PRICES – MODEL 3

Variable	Coefficient	T-Stat	P-Value
Log (disposable income per capita)	2.539	14.816	0.00
Log (Capital stock per capita)	-2.704	-7.428	0.00
User Cost of Capital	0.002	0.491	0.624
$\overline{R^2}$	0.91		

Source: Author's analysis.
Note: Model estimated over the period: Q1 1981 – Q1 2017.

TABLE A4   CHANGE IN THE LOG OF REAL HOUSE PRICES – ERROR CORRECTION FORECAST MODEL

Variable	Coefficient	T-Stat	P-Value
Error Correction Term (t-1)	-0.046	-4.181	0.00
Change in the log of House Prices (t-3)	0.300	4.133	0.00
Change in the log of House Prices (t-4)	0.374	5.165	0.000
Change in the log of Affordability	0.121	2.209	0.029
$\overline{R^2}$	0.38		

Source: Author's analysis.
Note: Model estimated over the period: Q2 1981 – Q1 2017.

TABLE A5   LOG OF REAL HOUSE PRICES – MODEL 3 AUGMENTED TO INCLUDE CREDIT SUPPLY

Variable	Coefficient	T-Stat	P-Value
Log (disposable income per capita)	2.549	14.920	0.00
Log (Capital stock per capita)	-2.917	-7.726	0.00
User Cost of Capital	0.0001	0.127	0.898
Log (Adjusted LTV)	0.417	1.849	0.066
$\overline{R^2}$	0.91		

Source: Author's analysis.
Note: Model estimated over the period: Q1 1981 – Q1 2017.

TECHNICAL APPENDIX 2

In this appendix, the error correction model used to generate the house price forecasts in Section 3.1 is described. The model can formally be summarised as follows:

$$\Delta p_t = \left(p_{t-1} - \beta_0 - \beta_{t-1} A_{t-1} - \beta_{t-2} \frac{CAP}{POP}_{t-1} \right) + \sum_{k=1}^{4} \Delta p_{t-k}$$

$$+ \sum_{j=0}^{4} \Delta a_{t-j} + \sum_{j=0}^{4} \Delta \frac{CAP}{POP}_{t-j} \qquad \text{(A1)}$$

where p refers to the log of real house prices, $\frac{CAP}{POP}$ is the log of the ratio of capital stock to population. For the short-run variables we specify a four-quarter lag length, given that the data are quarterly. a_t is the log of A_t the annuity formula used in McQuinn and O'Reilly (2008) and defined as equation (2) in the text:[49]

$$A_t = \omega Y_t \left(\frac{1 - (1 + R_t)^{-\tau}}{R_t} \right) \qquad \text{(A.2)}$$

For the parameters, we assume a 25-year structure for the term while we assume 28 per cent of income (ω) goes on the mortgage repayment. Both of these assumptions follow from the in depth analysis of Irish loan-level data in McCarthy and McQuinn (2017). The interest rate used is obtained by weighting the mortgage interest rates on loans for less than one year, between one and five years and for over five years by the corresponding volume of loans as published by Central Bank of Ireland.[50]

The results of the model are presented in Table A4. The Hendry (1995) 'general to specific' approach is adopted in that variables which are not significant at the 5 per cent level are dropped from the final model. This results in three short-run variables remaining; the change in house prices at lag length 3 and 4 and the contemporaneous change in affordability. All three variables have positive coefficients denoting that any increases in these variables will put upward pressure on house price inflation. The error correction term itself is 4.6 per cent; this indicates that where there is a deviation between the actual and long-run house price, 4.6 per cent of this gap is corrected for each quarter. This equates to an annual error correction term of almost 20 per cent, which is common in the literature. The t-statistic on the error correction term is also significant indicating that the specification of an error correction model is warranted.

---

[49] This does assume that on average all housing transactions have some degree of mortgage credit.
[50] www.centralbank.ie/statistics/data-and-analysis/credit-and-banking-statistics/retail-interest-rates.

EDUCATIONAL ATTAINMENT AND SKILL UTILISATION IN THE IRISH LABOUR MARKET: AN EU COMPARISON

Paul Redmond and Adele Whelan[51]

ABSTRACT

In recent years the Irish economy has experienced strong economic growth accompanied by significant improvements in the labour market. The unemployment rate in the second quarter of 2017 stands at 6.2 per cent (CSO, 2017), its lowest rate in nine years. In light of these improvements in the labour market, we examine the nature of current employment in Ireland with respect to the intensity of use of certain skills and the mismatch between the skills possessed by employees and those required to do their jobs. Furthermore, we consider the possible future sources of skilled labour supply by examining the characteristics of those currently unemployed and inactive in the labour market, as well as the ability of Ireland to attract high-skilled migrant workers. Our analysis reveals a high degree of skill underutilisation among Irish employees. The percentage of Irish workers reporting education or skill levels in excess of those required to do their job is the third highest of 28 EU countries. Our findings also indicate that, as was the case in recent decades, immigration may play an important role as a source of skilled labour in a tightening labour market.

1. INTRODUCTION

The unemployment rate in Ireland, as of Quarter 2, 2017, was 6.2 per cent (CSO, 2017), its lowest rate in nine years. As the economy improves and the labour market tightens, the issues facing the Irish economy today are likely to be very different from those which arose during the Great Recession, when the unemployment rate peaked at 15 per cent in 2011 and 2012. In this context, we examine the nature of current employment in Ireland with respect to the intensity of use of certain skills, as well as the mismatch between the skills possessed by employees and those required to do their jobs. In doing so, we draw comparisons between Ireland and the other 27 EU Member States by utilising the 2014 European Skills and Jobs Survey (ESJS). [52] We also consider the possible future sources of skilled labour supply in a tightening labour market, by

examining the characteristics of the unemployed and inactive workers in Ireland as well as the ability of Ireland to attract high-skilled migrant workers.

Skills mismatch is a broad term which incorporates a number of different concepts (McGuinness et al., 2017a). Vertical mismatch refers to a misalignment between the skills or education levels possessed by employees and those required to do their job. A large body of literature examines the consequences of overskilling and overeducation, describing scenarios whereby employees possess skills or education levels which exceed those required to do their job.[53] Therefore, overskilling and overeducation represent an underutilisation of existing skills.

It is important to point out that when discussing high rates of overeducation or overskilling, the policy implications are not about reducing education levels within a country, but rather on how to better utilise the existing skills of the labour force. Indeed, while individuals whose education is not fully utilised suffer a wage penalty relative to individuals with the same level of education in matched employment (see, e.g., McGuinness and Sloane, 2011), they earn a wage premium relative to their lower educated counterparts doing the same type of job (see e.g. Lindley, 2009). As such, there are positive wage returns associated with acquiring additional years of education, even for those individuals whose skills and education are underutilised.

In this paper, we also examine underskilling and undereducation, which refer to scenarios whereby employees possess skills and education levels which fall below those required to do their job. We also discuss the concept of skill shortages, which refers to unfilled or hard-to-fill vacancies due to a lack of suitably qualified or skilled candidates.

While policy recommendations, such as the country specific recommendations from the European Commission, often focus on skill shortages[54] (European Commission, 2017a), our analysis indicates that a relatively large proportion of Irish employees report skill underutilisation in their current jobs. Moreover, the Manpower Talent Shortage Survey 2015 suggests that skill shortages in Ireland are not as prevalent as in other developed economies, with the incidence of hard-to-fill vacancies due to a lack of suitably skilled candidates being the lowest out of 42 countries. Nonetheless, even if they are not prevalent at an aggregate level,

---

[53] For a review, see McGuinness et al. (2017a).
[54] The European Commission (2017b) refer specifically to the National Skills Bulletin 2016 (EGSFN, 2016) highlighting skill shortages in the areas of ICT, engineering, sales, logistics, health, business and finance.

skill shortages may arise in certain specific occupations or sectors, thereby posing challenges for employers trying to fill specific types of jobs.

In terms of potential sources of skilled labour, we show that those currently experiencing unemployment have higher education levels than the inactive. In addition, despite a high number of people classified as 'inactive', only a very small percentage of these are shown to have a strong enough attachment to the labour market to be considered as a potential source of labour supply. Therefore, the scale and composition of those currently experiencing unemployment, when compared to the inactive, show greater potential in this regard. However, the overall numbers of potentially high-skilled employees, when considering both the unemployed and the inactive, are relatively small. Given this, and the potential continued growth in labour demand, immigration may play an important role. The ESJS data reveal that the share of foreign-born workers with tertiary education in Ireland is the third highest in the EU, at 57 per cent. As such, the high education level of immigrant workers in Ireland as well as a relatively highly educated pool of unemployed individuals suggests that Ireland appears well positioned to fill high-skilled jobs as they arise.

2. THE CURRENT LABOUR MARKET

In this section we use recent labour market data from the 2017 Quarterly National Household Survey (QNHS) to give an overview of the current position of the Irish labour market. Table 1 outlines some of the main labour market and employment related statistics for the Irish economy. The unemployment rate has been declining for the last number of years. The current rate of 6.2 per cent represents a dramatic improvement compared to the rate of 15 per cent recorded during the economic crisis in 2011 and 2012. The labour force participation rate in Ireland declined with the onset of the Great Recession in 2008, however it has been stable in recent years and currently stands at 59.8 per cent. The percentage of employees working part-time is 22.2 per cent, down from 23.8 per cent in Quarter 1, 2016, and the percentage of employees on temporary contracts is 7.5 per cent, compared to 7.8 per cent in Quarter 1, 2016. Table 1 also presents descriptive statistics relating to educational attainment. Taking the adult population as a whole, those aged 25-64, Ireland has a highly educated population with 44 per cent educated to tertiary level and 37 per cent educated to upper secondary or post-secondary level. The percentage of individuals educated to tertiary level in Ireland is above the OECD average of 35 per cent.[55]

---

[55] See OECD, 2016. Available at: www.education.ie/en/Publications/Statistics/International-Statistical-Reports/Education-at-a-Glance-OECD-Indicators-2016-Briefing-Note.pdf.

TABLE 1   LABOUR MARKET INDICATORS (QUARTER 2, 2017)

	%
Unemployment rate (15-74 years)	6.2
Labour force participation rate (15+ years)	59.9
Temporary employees	7.5
Part-time employees	22.2
Highest education level (aged 25-64 years)	
Lower secondary or below	18.9
Upper secondary or post-secondary (non-tertiary)	36.7
Tertiary (short cycle / bachelor / master / doctoral)	44.4

*Source:*   Quarterly National Household Survey.
Notes: The seasonally-adjusted unemployment rate is reported. Temporary and part-time employees are expressed as a percentage of all employees. The education levels relate to all individuals (unemployed, employed and inactive) aged 25-64 years.

3. SKILL INTENSITY AND SKILLS MISMATCH

We examine the skill content of jobs in Ireland using the 2014 Cedefop European Skills and Jobs Survey (ESJS), which captures information on employees' skill levels and skill utilisation for 28 EU Member States. The survey contains the following question, 'Which of the following best describes the highest level of literacy skills required for doing your job?', with four possible responses; 1. Basic, 2. Advanced, 3. Not Applicable / Literacy Skills Not Required and 4. Don't Know. There are similar questions relating to numeracy and ICT skills. Figures 1-3 report the percentage of full-time employees who state that their jobs require advanced skills in the 28 EU Member States.[56] In terms of literacy skills (Figure 1) 57 per cent of Irish full-time employees state that their jobs require advanced literary skills. This is above the EU average of 50 per cent and ranks Ireland fifth highest out of 28 countries, behind Austria, Italy, Germany and Luxembourg. A similar pattern emerges when we look at numeracy skills (Figure 2), with 39 per cent of full-time employees in Ireland stating that their job requires advanced numeracy skills, the fifth highest of 28 countries. However, just 17 per cent of Irish employees report that their job requires advanced ICT skills (Figure 3), putting Ireland below the EU average, ranking 13th highest out of 28 countries. Figure 4 shows the proportion of jobs that are highly skill intensive across all three areas, numeracy, literacy and ICT. Just over 10 per cent of employees in Ireland rate their job as highly skill intensive across all three measures, which is the tenth highest of 28 countries.

---

[56]   A variable is created which equals one if employees state their job requires advanced skills and zero if employees state that basic skills are required or that the question is not applicable / skills not required.

FIGURE 1   EMPLOYEES REPORTING THAT THEIR JOB REQUIRES ADVANCED LITERACY SKILLS (%)[57]
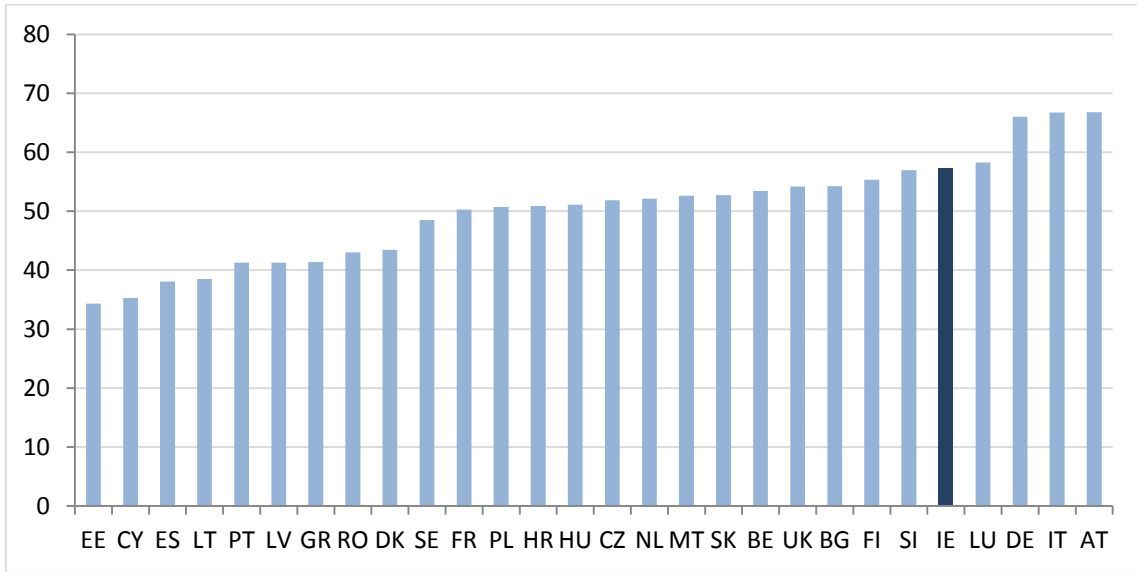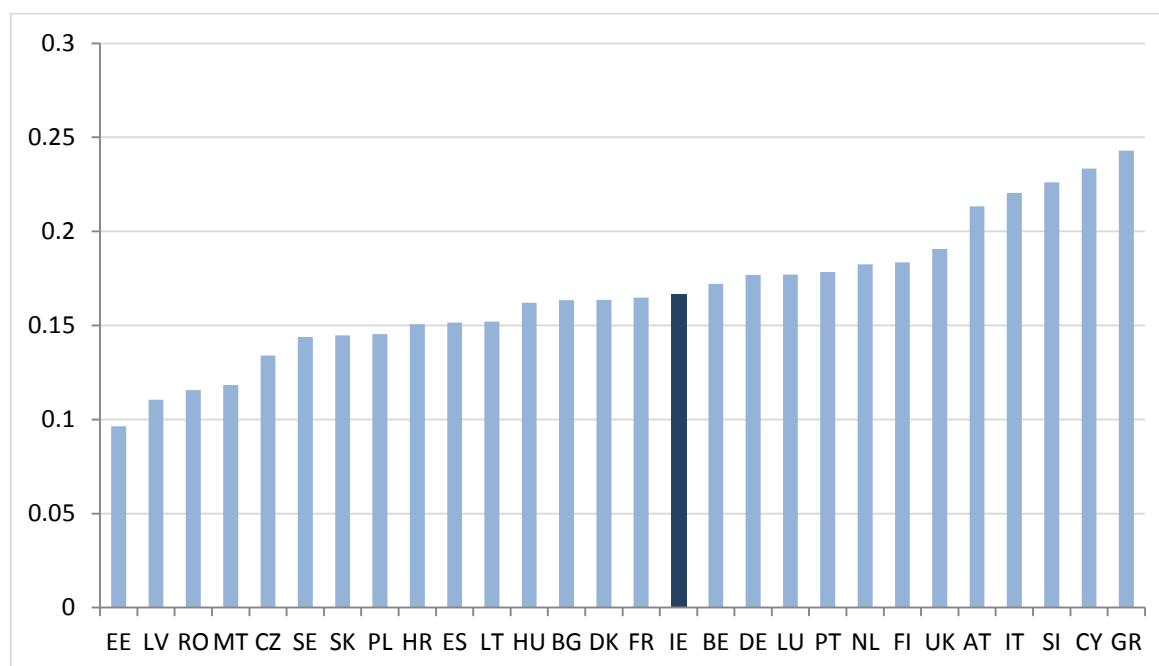

Source: Cedefop European Skills and Jobs Survey, 2014.

**FIGURE 2   EMPLOYEES REPORTING THAT THEIR JOB REQUIRES ADVANCED NUMERACY SKILLS (%)**
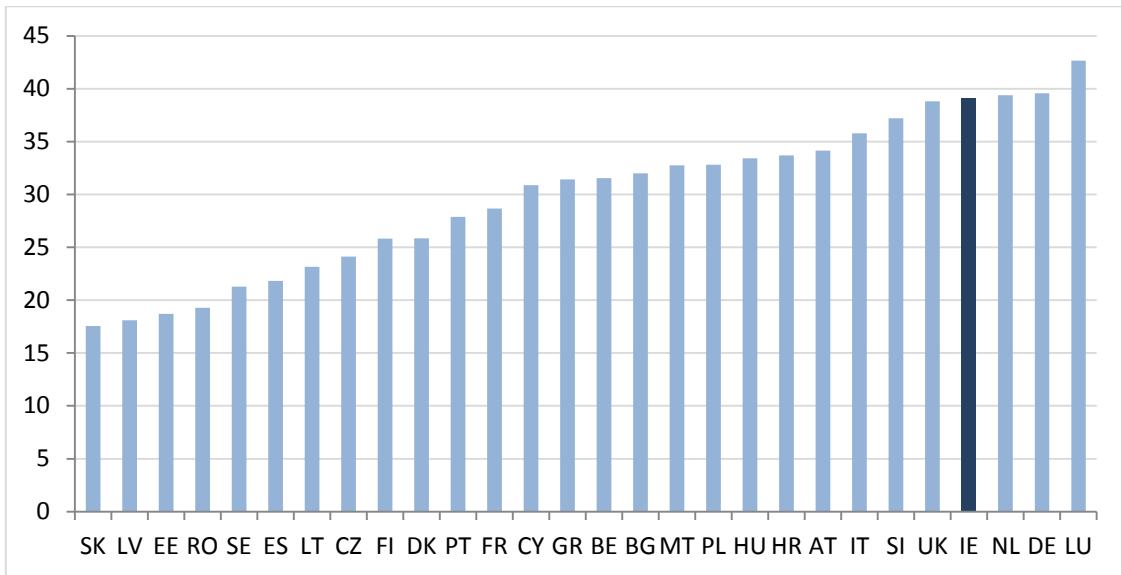
Source: Cedefop European Skills and Jobs Survey, 2014.

---

[57]   The EU28 refers to the following countries: Belgium [BE], Bulgaria [BG], Czech Republic [CZ], Denmark [DK], Germany [DE], Estonia [EE], Ireland [IE], Greece [GR], Spain [ES], France [FR], Croatia [HR], Italy [IT], Cyprus [CY], Latvia [LV], Lithuania [LT], Luxembourg [LU], Hungary [HU], Malta [MT], Netherlands [NL], Austria [AT], Poland [PL], Portugal [PT], Romania [RO], Slovenia [SI], Slovakia [SK], Finland [FI], Sweden [SE], and United Kingdom [UK].

FIGURE 3   EMPLOYEES REPORTING THAT THEIR JOB REQUIRES ADVANCED ICT SKILLS (%)

Source: Cedefop European Skills and Jobs Survey, 2014.

FIGURE 4   EMPLOYEES REPORTING THAT THEIR JOB REQUIRES ADVANCED NUMERACY, LITERACY AND ICT SKILLS (%)
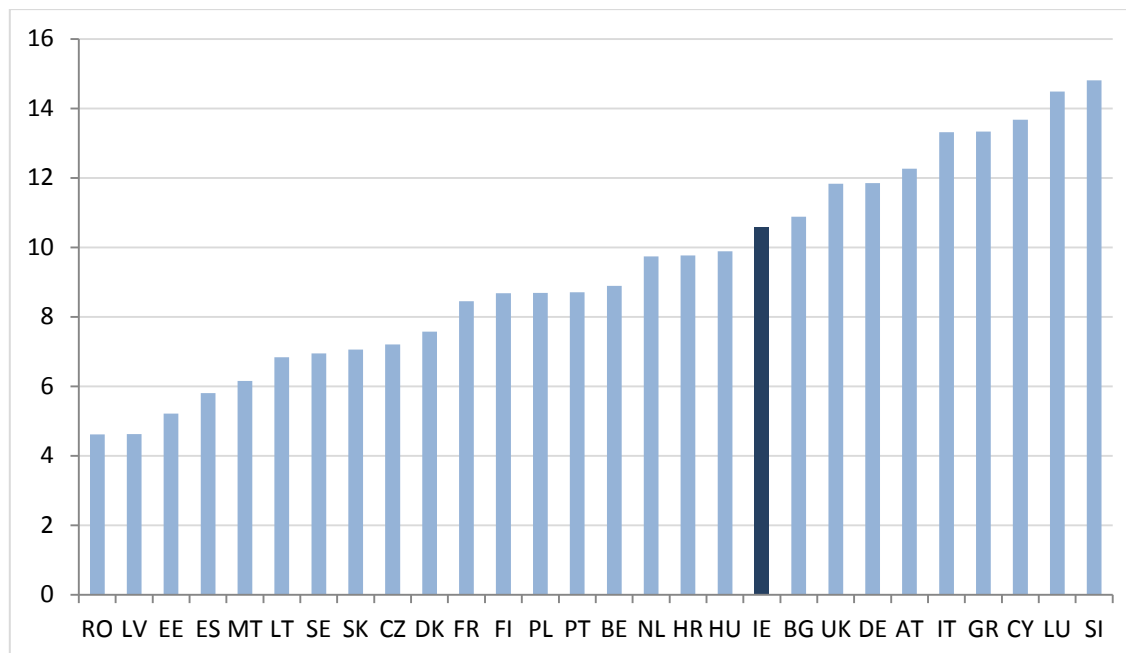
Source: Cedefop European Skills and Jobs Survey, 2014.

It is important to note that that the definition of 'advanced skills' is subjective and may vary across countries. For example, what employees in one country consider to be advanced skills may be considered basic in another country. Nonetheless, the data are informative as they capture intensity of skill use relative to a country

specific benchmark. For example, it could be the case that what employees in Ireland consider advanced ICT skills are of a higher level than other countries. Therefore, when answering the question, employees in each country are applying their own benchmark as to what they consider to be advanced skills. The fact that just 17 per cent of Irish employees consider their jobs to require advanced ICT skills may point to skills underutilisation, whereby employees find their ICT related work tasks to be relatively easy.

We can further investigate the issue of skill underutilisation using a separate question in the ESJS which asks employees, 'Overall, how would you best describe your skills in relation to what is required to do your job?', with employees responding that their skills are either; 1. Higher, 2. Matched or 3. Lower than what is required to do their job. Figure 5 shows the percentage of employees who report that their skills are underutilised in their job across all 28 countries. A relatively high percentage of Irish employees consider themselves to be overskilled. At 46 per cent, this is the fourth highest rate of skill underutilisation out of 28 EU countries, behind Greece, Austria and the United Kingdom.

The literature highlights a number of costs to the individual associated with skills underutilisation. These individuals are found to suffer a wage penalty relative to individuals with similar skill levels in matched employment (see, e.g., McGuinness and Sloane, 2011; Sánchez-Sánchez and McGuinness, 2015; Sloane, 2014). Similarly, as discussed in the introduction, individuals whose education is not fully utilised suffer a wage penalty relative to individuals with the same level of education in matched employment, (see, e.g., McGuinness and Sloane, 2011). However, these types of workers earn a wage premium relative to their lower educated counterparts doing the same type of job (see, e.g., Lindley, 2009). Therefore, the wage returns to each additional year of education, while lower than those for matched employees, are still positive for individuals who find themselves in jobs whereby their education and skills are not fully utilised.

There is also evidence that individuals who are mismatched have lower levels of job satisfaction (Mavromaras et al., 2012; Sloane, 2014; Green and Zhu, 2010; Congregado et al., 2016). Higher incidences of skills underutilisation in an organisation is also associated with lower workplace harmony (Belfield, 2010). In addition, mismatched workers are also more likely to want to quit their job (McGuinness and Wooden, 2009) and experience lower skills development (Cedefop, 2015a). Regarding the persistence of mismatch, the evidence is mixed. Verhaest et al. (2015) and Clark et al. (2014) find that overeducation can be quite persistent. Specifically, Clark et al. (2014) show that 66 per cent of overeducated US workers remained overeducated after one year. However, Frei and Sousa-Poza (2012) find that spells of overeducation in Switzerland are typically short.

Overskilled workers with a higher academic degree tend to have the highest persistence of mismatch, while workers with vocational education are found to exit mismatch more quickly (Mavromaras and McGuinness, 2012).

A study by McGuinness et al. (2017b) finds Ireland to have a relatively high level of overeducation compared to the rest of the EU. They use EU-LFS data to compile a panel dataset of overeducation in Europe. Unlike the subjective approach of measuring overeducation or overskilling, whereby employees are asked directly to compare their education or skill level to their job requirements (as in the ESJS data), they use a statistical measure of overeducation. This involves calculating the modal level of education for each two-digit ISCO occupation code and categorising workers as over (under) educated if their level of education is above (below) the modal education level for their occupation. McGuinness et al. (2017b) find that over the period 2001 to 2011, the rate of overeducation in Ireland, at 33 per cent, far exceeded the EU average of 19 per cent.

FIGURE 5   EMPLOYEES REPORTING THAT THEY ARE OVERSKILLED FOR THEIR JOB (%)
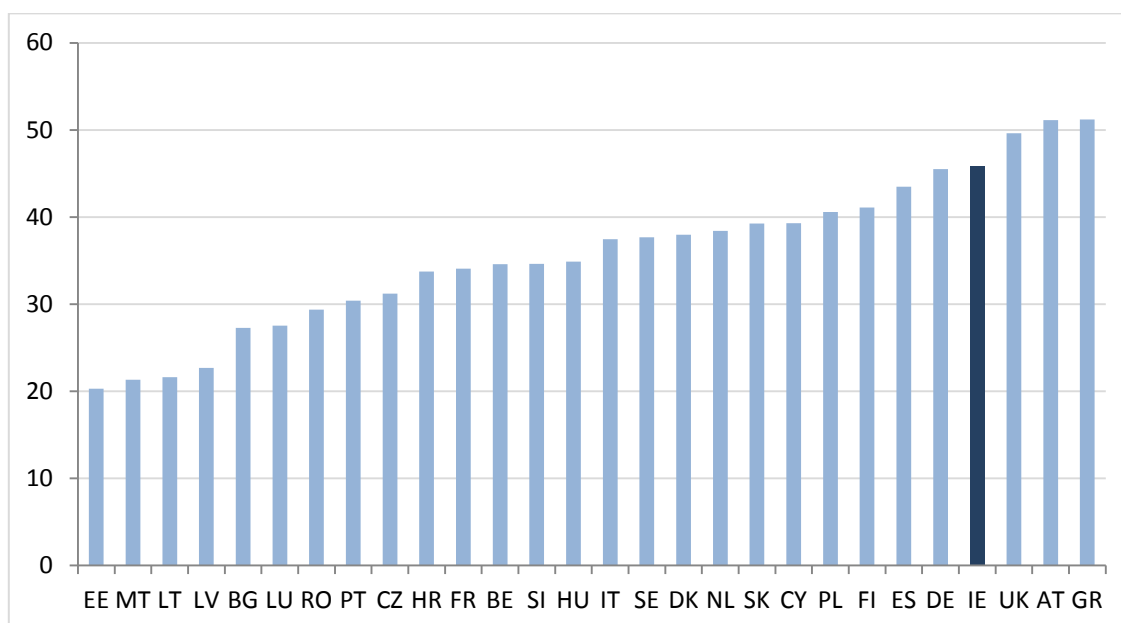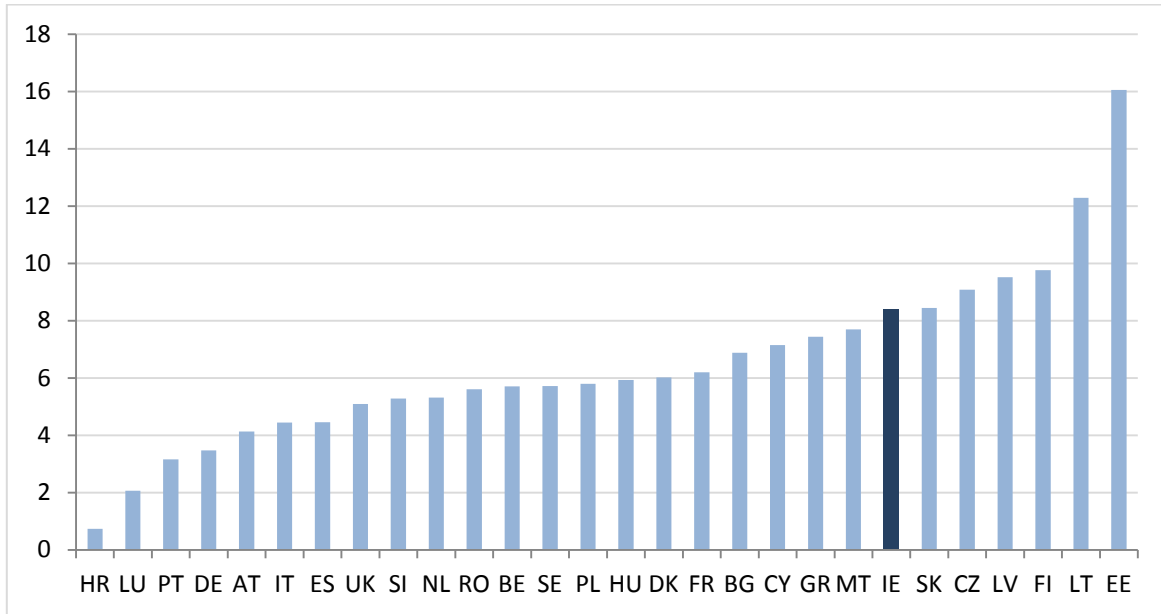

Source: Cedefop European Skills and Jobs Survey, 2014.

The percentage of full-time workers in Ireland who consider themselves to be underskilled, as measured using the ESJS survey, is approximately 8 per cent. While this is considerably lower than the rate of overskilling, it is still relatively high in comparison to other countries, with Ireland having the seventh highest rate of underskilling out of 28 EU Member States (Figure 6). Therefore, given Ireland's relatively high rates of skills mismatch, in terms of both overskilling and underskilling, it is not surprising that Ireland ranks quite poorly in relation to the

percentage of employees who consider their skills to be matched to their job. The percentage of matched employees in Ireland is 46 per cent, the fourth lowest rate in the EU28, with only Greece, Austria and the UK recording lower rates of matched employment (Figure 7).

FIGURE 6   EMPLOYEES REPORTING THAT THEY ARE UNDERSKILLED FOR THEIR JOB (%)

Source: Cedefop European Skills and Jobs Survey, 2014.

FIGURE 7   EMPLOYEES REPORTING THAT THEY ARE MATCHED FOR THEIR JOB (%)
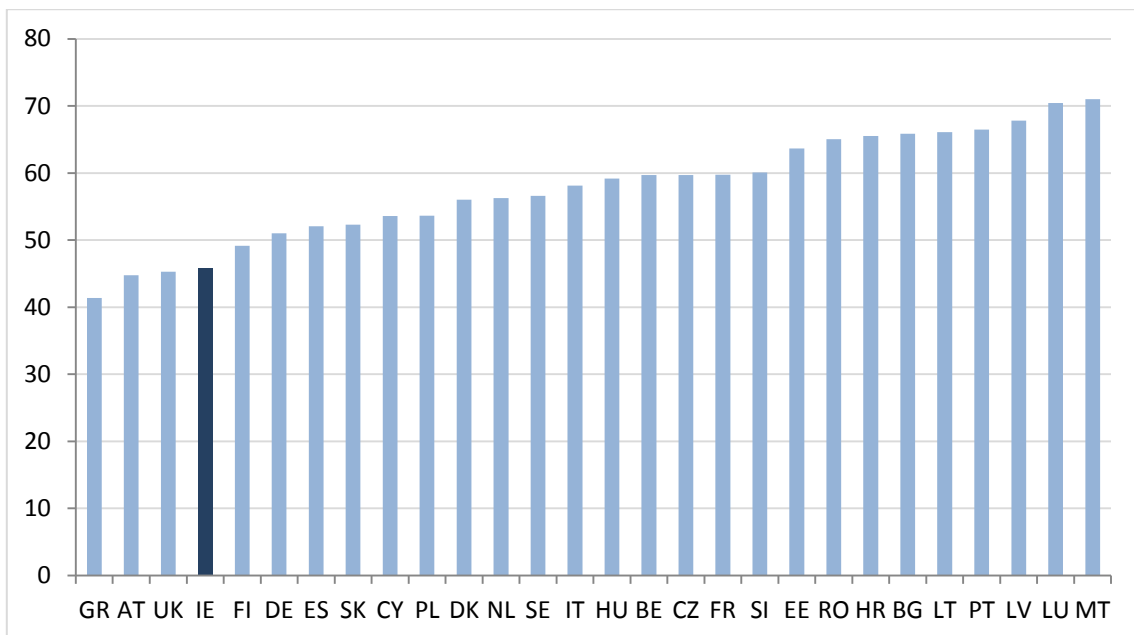
Source: Cedefop European Skills and Jobs Survey, 2014.

4. THE POLICY DEBATE ON SKILLS MISMATCH

The area of skills mismatch attracts a great deal of attention among policymakers. However, as noted by McGuinness et al. (2017a), the policy advice surrounding skills mismatch can sometimes be vague. As mentioned, skills mismatch is a very broad concept and can incorporate a number of different types of mismatch, including vertical mismatch (usually measured in terms of overeducation, undereducation, overskilling and underskilling), skill gaps, skill shortages (usually measured in terms of unfilled and hard-to-fill vacancies), field of study (horizontal) mismatch and skill obsolescence. It is important that policymakers are cognisant of this fact and avoid using the term skills mismatch without specifically stating the type of mismatch in question. For example, while the European Commission's 2016 and 2017 country specific recommendations (CSRs) for Ireland raise the issue of skills mismatch as a potential policy concern, a greater discussion of the precise types of mismatch would be informative.[58]

The policy debate on mismatch often addresses areas of mismatch for which there is the least available evidence, namely skill shortages. The term skill shortage describes a situation whereby employers are unable to fill vacant posts due to a lack of qualified candidates. The evidence on skill shortages is usually based on employer surveys such as the European Business Survey (EBS), the Manpower Talent Shortage Survey and the European Company Survey (ECS). As highlighted by McGuinness et al. (2017a), caution is called for when using these types of employer surveys to inform the policy discussion on skill shortages. This is due to difficulties in disentangling genuine skill shortages, which arise when demand for skills by employers cannot be met by supply at market clearing wage rates, from other types of recruitment difficulties relating to issues such as poor wages, working conditions, or inadequate recruitment and human resource functions within the firm. The percentage of employers facing genuine skill shortages may fall well below the percentage of employers reporting recruiting difficulties (Cedefop, 2015b). Nevertheless, we can look to some of these employer surveys as a guide to assessing the degree of skill shortages across countries. In particular, the 2015 Manpower Talent Shortage Survey asks employers how much difficulty they have filling jobs due to a lack of available talent, while also ranking the types of jobs for which skill shortages are most apparent. It is notable that Ireland is singled out as the country with the lowest level of difficulty (out of 42 countries) filling jobs.

5. POTENTIAL SOURCES OF FUTURE LABOUR SUPPLY

In this section we use data from the Quarterly National Household Survey (QNHS) to examine the potential sources of future labour supply for the growing Irish

---

[58] The 2017 CSR documents can be accessed at: https://ec.europa.eu/info/publications/2017-european-semester-country-specific-recommendations-commission-recommendations_en.

economy. We focus specifically on the composition of three groups; migrant workers, the inactive, and the unemployed. Furthermore, we utilise the EU Labour Force Survey (EU-LFS) and the Cedefop European Skills and Jobs Survey (ESJS) to compare Ireland's position relative to the other EU Member States.

5.1   Migrant workers

After the expansion of the EU in 2004 with the entry of ten new Member States, there was a sharp increase in the flow of migrants to Ireland (Barrett et al., 2011). Ireland was one of only three countries, including Sweden and the UK, that allowed full access to its labour market for the citizens of the new Member States. This, coupled with strong economic growth in Ireland at that time, resulted in large numbers migrating to Ireland. In 2002, immigrants accounted for just 5 per cent of Irish employees. However, by 2007, this had increased to 10 per cent (Barrett et al., 2011). This increased further in subsequent years, with non-Irish nationals currently accounting for 18 per cent of all employees.[59] The ESJS data allow us to compare the percentage of foreign-born employees in Ireland with the EU28.[60] As we can see from Figure 8, Ireland has the third highest percentage of foreign-born employees in the EU.

As noted by González Pandiella (2016), Ireland is very open to international migration flows, with immigration helping to provide the skills required by the Irish economy. The ESJS data reveal that the share of foreign-born workers with tertiary education in Ireland is the third highest in the EU, at 57 per cent (Figure 9). In 2016, a breakdown of immigration by educational attainment for recently arrived immigrants highlighted that more than half (57.1 per cent) of the migrants aged 15 and over had a third-level degree or above (CSO, 2016). These findings highlight the importance of high-skilled migrant workers to the Irish labour force and show that Ireland has a proven capability in attracting highly educated workers. However, the evidence shows that migrants face both a pay gap and an occupational gap, suggesting their skills are not being fully utilised within the Irish labour market (Barrett et al., 2012; Barrett et al., 2016). The ESJS data confirm this by showing that foreign-born workers in Ireland report the second highest level of overskilling in the EU, at approximately 50 per cent. Therefore, while migration represents an important source of skilled labour supply, there is scope for better utilising the skills of migrant workers.

[59] The European Migration Network, using data from the Quarterly National Household Survey, publish statistics relating to Non-Irish nationals. See http://emn.ie/index.jsp?p=128&n=138.
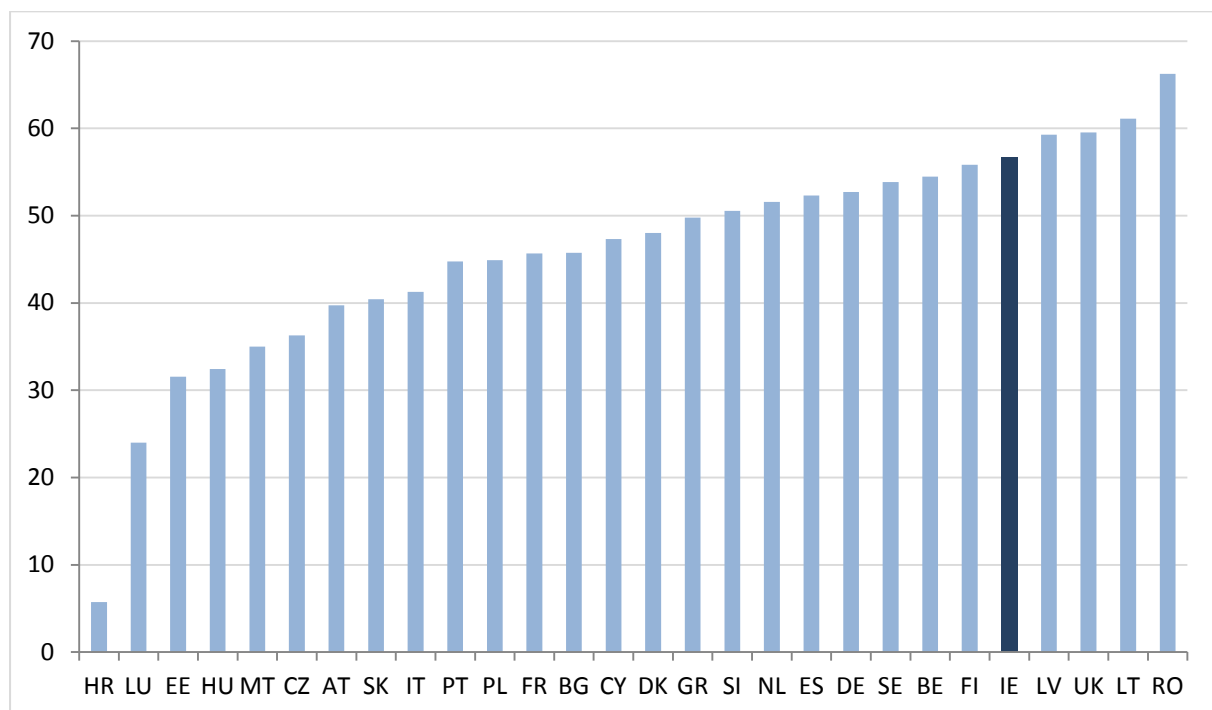[60] There is a question in the ESJS data which asks the employee whether they were born in the country in which they are currently working.

FIGURE 8   PERCENTAGE OF FOREIGN-BORN EMPLOYEES, 2014 (%)
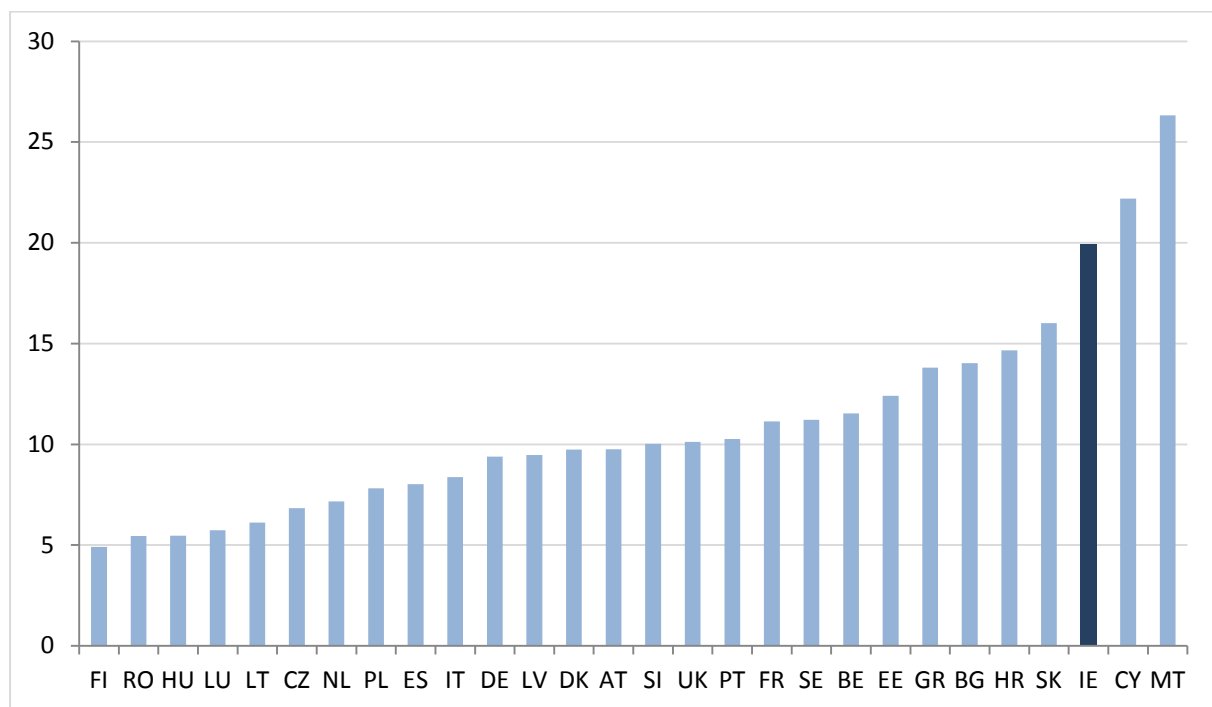
Source: Cedefop European Skills and Jobs Survey, 2014.

FIGURE 9   SHARE OF MIGRANTS IN EMPLOYMENT WITH TERTIARY EDUCATION, 2014 (%)


Source: Cedefop European Skills and Jobs Survey, 2014.

5.2   Inactive

Next we focus on labour force participation rates and the composition of those currently classified as 'inactive' in the labour market as another potential source of labour supply. In terms of participation rates, female participation increased substantially in the decade before the economic crisis and, following a decline at the onset of the crisis in 2008, has since stabilised. This can be seen in Figure 10 which shows participation rates for males and females aged 15-74 years. While the female participation rate in Ireland is below the EU average, the male participation rate is slightly higher and, consequently, the overall participation rate for Ireland is quite similar to the EU average, at approximately 65 per cent. Bercholz and Fitzgerald (2016) find that the economic crisis had a particularly significant impact on women under 30, who remained in education in their 20s for a longer period than before the crisis. Bercholz and Fitzgerald (2016) suggest that the educational attainment among women aged 30 and over will continue to increase in Ireland for at least a decade, with a corresponding increase in female labour force participation among this cohort. They predict that as older women retire and are replaced with younger women with more education, this may have a positive productivity effect on the economy.

FIGURE 10   PARTICIPATION RATES, 2001 -2016 (%)
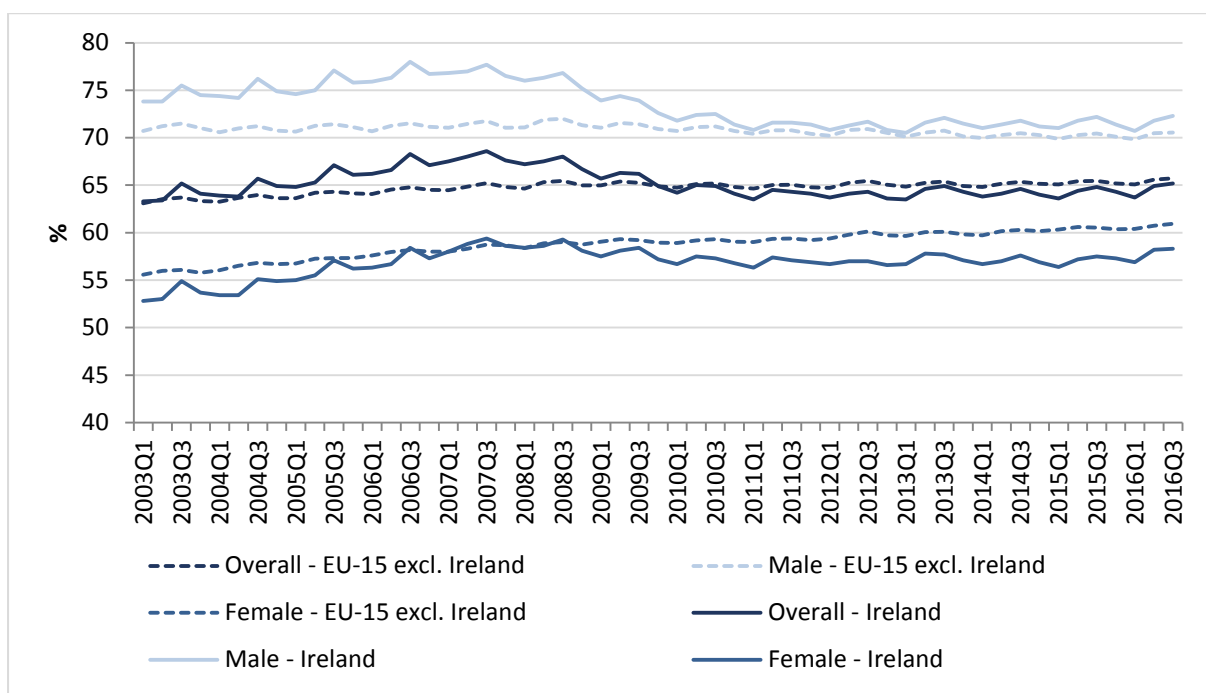
Source: EU Labour Force Survey.
Notes: Expressed as a percentage of the population aged 15-74.

Table 2 shows the composition of the inactive as predominately female (59 per cent), over 45 years of age (56 per cent) with lower secondary or less education (51 per cent). In the second quarter of 2017, those classified as 'not in the labour

force' totalled 1,477,000 individuals. Some of these individuals have a stronger attachment to the labour force than others and are classified by Eurostat as potential additional labour force (PALF). This group includes 'persons seeking work but not immediately available' and 'persons available for work but not seeking'. Of the 1,477,000 individuals who are 'not in the labour force' in Ireland, 33,900 are classified as potential additional labour force (CSO, 2017). Therefore, despite the large number of individuals currently classified as 'inactive', the potential implications for labour supply appear relatively weak given their composition and the small proportion classified as being in the potential additional labour force. There is also the additional difficulty and complexity associated with attempting to design policies that impact on labour force participation rates and reduce inactivity. Very little is known in this regard, especially when compared to the greater body of research relating to policies aimed at reducing unemployment.

TABLE 2   COMPOSITION OF THE INACTIVE (QUARTER 2, 2017)

|	%
By Age	
15-19	20.3
20-24	7.3
25-34	7.4
35-44	9.6
45-54	10.5
55-64	16.0
64-74	29.0
By Gender	
Male	41.2
Female	58.8
By Education Level	
Lower Secondary (& below)	50.7
Upper Secondary	24.1
Post Secondary	8.4
Tertiary	16.8

Source: Quarterly National Household Survey, Q2, 2017.

5.3   Unemployed

The steady pace of employment creation and the corresponding reduction in unemployment since 2012 can be seen in Figure 11, with the unemployment rate now fast approaching the pre-crisis level. In 2017, most sectors of the economy are experiencing employment growth, with the construction sector and the information and communications sector registering the largest recent increases. We examine the composition of those currently classified as unemployed in the

labour market to further examine their potential as an additional source of future labour supply.

FIGURE 11   UNEMPLOYMENT RATES, 1998 – 2017 (%)
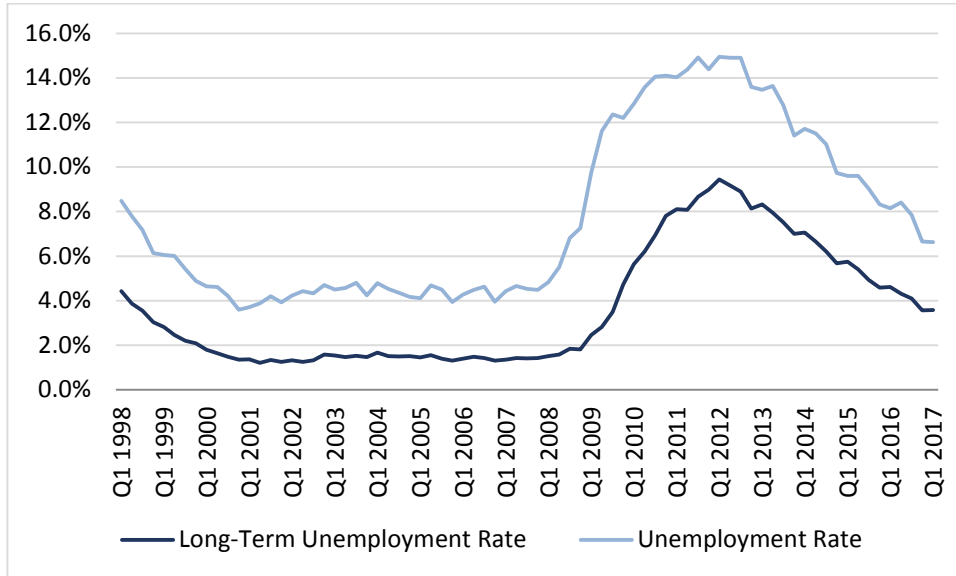
Source: Quarterly National Household Survey.
Notes: Expressed as a percentage of the population aged 15-74.

In the second quarter of 2017, the seasonally-adjusted unemployment rate for Ireland reached 6.2 per cent, compared to the Euro Area seasonally-adjusted unemployment rate of 9.1 per cent.[61] The lowest unemployment rates in August 2017 were in the Czech Republic (2.9 per cent), Germany (3.6 per cent) and Malta (4.2 per cent), with the highest unemployment rates in Greece (21.2 per cent) and Spain (17.1 per cent). From August 2016 to August 2017, the absolute magnitude of the decrease in the unemployment rate in Ireland was among the largest in Europe, declining by 1.6 percentage points (from 7.9 to 6.3 per cent). Other countries which experienced large declines were Spain (2.2 percentage points), Croatia (2.1 percentage points), Cyprus (2.4 percentage points) and Slovakia (2.1 percentage points). The seasonally-adjusted youth unemployment rate for Ireland was 12.7 per cent in August 2017, a significant drop compared to a rate of 17.2 per cent recorded in August 2016. The most recent figures for the EU28 in August 2017 show the seasonally-adjusted youth unemployment rate was 16.7 per cent with the lowest rate observed in Germany (6.4 per cent) and the highest rates in Greece (43.3 per cent), Spain (38.7 per cent) and Italy (35.1 per cent). While the scale of the problems confronting the Greek, Spanish and Italian labour markets and economies is clearly evident, Ireland's

---

[61]   Please see Eurostat, 2017. Available at:
         http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics.

performance is improving significantly and is now more closely aligned with the EU average.

The composition of the unemployed is shown in Table 3. The unemployed are found to be predominately male (62 per cent) and, compared to the inactive, unemployed individuals are younger in age (particularly the short-term unemployed) and have relatively high levels of education; 24.9 per cent of unemployed individuals have tertiary education compared to 16.8 per cent of the inactive. In the second quarter of 2017, the seasonally-adjusted number of persons unemployed was 141,500 and this was the first quarter since Q3 2010 that long-term unemployment (one year or more) accounted for less than 50 per cent of total unemployment. In terms of the ability of activation programmes to reintegrate the unemployed into the labour market, recommendations have been made for strengthening policy in this area (McGuinness et al., 2014; Martin, 2014; Kelly et al., 2015).

TABLE 3   COMPOSITION OF THE UNEMPLOYED (QUARTER 2, 2017)

	All (%)	Short-Term Unemployed (%)	Long-Term Unemployed(%)
By Age			
15-19	9.3	14.1	
20-24	16.2	20.1	14.9[62]
25-34	23.5	24.2	23.0
35-44	20.2	19.6	21.8
45-54	17.7	12.0	23.3
55-74	13.2	10.1	17.0
By Gender			
Male	62.4	54.5	69.3
Female	37.6	45.5	30.7
By Education Level			
Lower Secondary (& below)	28.2	21.8	33.4
Upper Secondary	32.7	34.5	30.1
Post Secondary	14.2	12.0	17.2
Tertiary	24.9	31.8	19.3

Source: Quarterly National Household Survey, Q2, 2017.
Note: The 65-74 age category is omitted because of the small sample size

6.   CONCLUSION

The self-reported skill intensity of jobs among Irish employees is relatively high in terms of literacy and numeracy, but lower in terms of ICT skills. Just over 10 per

---

[62]   The figure of 14.9 per cent refers to ages 15-24. Two age categories, 15-19 and 20-24, are combined due to small sample sizes.

cent of employees in Ireland rate their job as highly skill intensive across all three measures. Ireland is also shown to have a relatively high degree of skill underutilisation, as measured by the rates of both overeducation and overskilling, with Ireland recording some of the highest rates of skill underutilisation in Europe.

Despite the high rates of skill underutilisation and a vast body of literature documenting the negative consequences associated with this type of skills mismatch, the policy debate in Ireland and across Europe typically focuses on the area of skill shortages. There is a concern, especially in a tightening labour market, that skill shortages may pose significant problems. However, as reported by the 2015 Manpower Talent Shortage Survey, the incidence of hard-to-fill vacancies due to a lack of suitably skilled candidates reported by Irish employers is the lowest out of 42 countries. Therefore, while skill shortages may be problematic in certain specific sectors, it appears that a more prevalent issue relates to the fact a large number of Irish employees are not fully utilising their skills and education in their current employment. While over 45 per cent of full-time employees in Ireland say that their skills are in excess of what is required to do their job, just 8 per cent say their skills are inadequate for their job.

While there appears to be scope to better harness the skills of existing employees as the economy continues to improve and the labour market tightens, another consideration relates to the additional sources of labour supply in the future. Our findings suggest the level and composition of those currently experiencing unemployment, when compared to the inactive, show greater potential for providing future sources of labour supply for Ireland's growing economy. However, it is unlikely that this group alone can fully meet the increased labour demands. As such, a key source of future labour supply for Ireland may be immigration. This has been an important source of labour supply in Ireland in recent decades. In 2002, immigrants accounted for just 5 per cent of employees in Ireland. However, by 2016 this figure had increased to 18 per cent. Moreover, a large proportion of immigrants are highly skilled. The ESJS data show that the share of foreign-born workers with tertiary education in Ireland is the third highest in the EU, at 57 per cent.

Finally, while not the focus of this study, it is important to highlight the uncertainties surrounding Brexit and its potential impact on the Irish labour market. Garcia Rodriguez (2017), building on previous work by Bergin et al. (2017), estimates that a 'hard Brexit' will lead to higher unemployment in Ireland. Furthermore, while strong migration links exist between Ireland and the UK (Barrett et al., 2015), the implications of Brexit on migration flows to Ireland have yet to be established.

REFERENCES

Barrett, A., A. Bergin and E. Kelly (2011). 'Estimating the impact of immigration on wages in Ireland', *The Economic and Social Review* 42(1): 1-26.

Barrett, A., S. McGuinness and M. O' Brien (2012). 'The Immigrant Earnings Disadvantage across the Earnings and Skills Distributions: The Case of Immigrants from the EU's New Member States,' *British Journal of Industrial Relations*, 50(3): 457-481.

Barrett, A., A. Bergin, J. Fitzgerald, D. Lambert, D. McCoy, E. Morgenroth, I. Siedschlag and Z. Studnicka (2015). *Scoping the Possible Economic Implications of Brexit on Ireland*, Research Series Number 48, Dublin: ESRI.

Barrett, A., A. Bergin, E. Kelly and S. McGuinness (2016). 'Ireland's Recession and the Immigrant/Native Earnings Gap', in: Martin Kahanec and Klaus F. Zimmermann (eds), *Labor Migration, EU Enlargement, and the Great Recession*. Berlin - Heidelberg: Springer (2016), 103-122. DOI: 10.1007/978-3-662-45320-9.

Belfield, C. (2010). 'Over-education: What Influence does the Workplace Have?' *Economics of Education Review*, 29 (2): 236-245.

Bercholz, M. and J. Fitzgerald (2016). 'Recent trends in female labour force participation in Ireland', Special Article in *Quarterly Economic Commentary,* Autumn 2016.

Bergin, A., N. Conroy, A. Garcia Rodriguez, D. Holland, N. McInerney, E. Morgenroth and D. Smith (2017). 'COSMO: A new COre Structural MOdel for Ireland', ESRI Working Paper, No. 553. Dublin: ESRI.

Cedefop (2014). European Centre for the Development of Vocational Training. *Cedefop European skills and jobs survey* (ESJS), Wave 1, Spring 2014 [computer file], 1st edition, Thessaloniki: Greece, Downloaded from: www.cedefop.europa.eu/en/events-and-projects/projects/analysing-skill-mismatch.

Cedefop (2015a). *Skills, Qualifications and Jobs in the EU: The Making of a Perfect Match?: Evidence from Cedefop's European Skills and Jobs Survey*, Cedefop Reference Series 3072.

Cedefop (2015b). 'Skill Shortages and Gaps in European Enterprises', Cedefop Reference Series 3071.

Central Statistics Office (2016). 'Population and Migration Estimates'. Dublin: CSO. Available from: http://pdf.cso.ie/www/pdf/20160905091115_Population_and_Migration_Estimates_April_2016_full.pdf [Accessed 3 October 2017].

Central Statistics Office (2017). 'Quarterly National Household Survey, Q1 2017'. Dublin: CSO. Available from: http://pdf.cso.ie/www/pdf/20170523085100_Quarterly_National_Household_Survey_Quarter_1_2017_full.pdf [Accessed 6 October 2017].

Chiswick, B. and P. Miller (2010). 'Does the Choice of Reference Levels of Education Matter in the ORU Earnings Equation?', *Economics of Education Review,* 29 (6): 1076-1085.

Clark, B., C. Joubert and A. Maurel (2014). 'The career prospects of overeducated Americans'. IZA Discussion Paper 8313.

Congregado, E., J. Iglesias, J.M. Millán and C. Román (2016). 'Incidence, Effects, Dynamics and Routes out of Overqualification in Europe: A Comprehensive Analysis Distinguishing by Employment Status', *Applied Economics*, 48 (5): 411-445.

EGSFN (2016). 'National Skills Bulletin 2016: A Report by the Skills and Labour Market Research Unit (SLMRU) in SOLAS for the Expert Group on Future Skills Needs'. Dublin: SOLAS.

European Commission (2017a). 'Council Recommendation on the 2017 National Reform Programme of Ireland and delivering a Council opinion on the 2017 Stability Programme of Ireland'. Brussels: European Commission. Available at: https://ec.europa.eu/info/sites/info/files/2017-european-semester-country-specific-recommendations-commission-recommendations_-_ireland_0.pdf.

European Commission (2017b). 'Country Report Ireland Including an In-Depth Review on the prevention and correction of macroeconomic imbalances'. Brussels: European Commission. Available at: https://ec.europa.eu/info/sites/info/files/2017-european-semester-country-report-ireland-en.pdf.

Eurostat (2017). 'Unemployment Statistics'. Available online at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics [Accessed 3 October 2017].

Frei, C. and A. Sousa-Poza (2012). 'Overqualification: Permanent or transitory?' *Applied Economics* 44: 1837-1847.

Garcia Rodriguez, A. (2017). 'The Impact of Brexit on Irish Potential Output' in Kieran McQuinn, Daniel Foley, Conor O' Toole (eds.), *Quarterly Economic Commentary*, Summer 2017, Dublin: ESRI.

González Pandiella, A. (2016). 'Migration in Ireland: Challenges, opportunities and policies', OECD Economics Department Working Papers No. 1292.

Green, F. and Y. Zhu (2010). 'Overqualification, Job Dissatisfaction, and Increasing Dispersion in the Returns to Graduate Education', *Oxford Economic Papers*, 62 (4): 740-763.

Kelly, E., S. McGuinness and J. R. Walsh (2015). 'An Evaluation of the Back to Education Allowance', Research Series Number 47, Dublin: ESRI.

Lenton, P. (2012). 'Over-education across British Regions', *Regional Studies,* 46 (9): 1121-1135.

Levels, M., R. Van der Velden and J. Allen (2014). 'Educational Mismatches and Skills: New Empirical Tests of Old Hypotheses', *Oxford Economic Papers*, 66 (4): 959-982.

Lindley, J. (2009). 'The Over-education of UK Immigrants and Minority Ethnic Groups: Evidence from the Labour Force Survey', *Economics of Education Review,* 28 (1): 80-89.

Martin, J. (2014). 'Activation and Active Labour Market Policies in OECD Countries: Stylized Facts and Evidence on their Effectiveness', Geary Paper 6/2014 UCD Geary Institute Discussion Paper Series: WP2014/09, Dublin: UCD.

Mavromaras, K. and S. McGuinness (2012). 'Overskilling dynamics and education pathways'. *Economics of Education Review* 31: 619-628.

Mavromaras, K., P. Sloane and Z. Wei (2012). 'The Role of Education Pathways in the Relationship between Job Mismatch, Wages and Job Satisfaction: A Panel Estimation Approach', *Education Economics*, 20 (3): 303-321.

McGuinness, S. and M. Wooden (2009). 'Overskilling, Job Insecurity, and Career Mobility', *Industrial Relations*, 48 (2): 265-286.

McGuinness, S. and P. Sloane (2011). 'Labour Market Mismatch among UK Graduates: An Analysis Using REFLEX Data', *Economics of Education Review*, 30 (1): 130-145.

McGuinness, S., P. O' Connell and E. Kelly (2014). 'The Impact of Training Type and Duration on the Employment Chances of the Unemployed in Ireland', *The Economic and Social Review* 45 (3): 425-450.

McGuinness, S., K. Pouliakas and P. Redmond, P. (2017a). 'How useful is the concept of skills mismatch?' International Labour Organisation, Employment Policy Department. ILO, Geneva.

McGuinness, S., A. Bergin and A. Whelan (2017b). 'Overeducation in Europe: Trends, Convergence and Drivers', IZA Discussion Paper 10678.

McGuinness, S., A. Whelan and A. Bergin (2016). 'Is there a Role for Higher Education Institutions in Improving the Quality of First Employment?'. *The B.E. Journal of Economic Analysis & Policy*. Available online: https://doi.org/10.1515/bejeap-2016-0174, December 2016.

OECD (2016). 'Education at a Glance 2016: OECD Indicators, A Country Profile for Ireland'. OECD Publishing: Paris. Available online at: www.education.ie/en/Publications/Statistics/International-Statistical-Reports/Education-at-a-Glance-OECD-Indicators-2016-Briefing-Note.pdf [Accessed 6 October 2017].

Robst, J. (2007). 'Education and job match: The relatedness of college major and work', *Economics of Education Review*, Vol. 26, No. 1, pp. 397-407.

Sánchez-Sánchez, N. and S. McGuiness (2015). 'Decomposing the Impacts of Overeducation and Overskilling on Earnings and Job Satisfaction: An Analysis using REFLEX Data', *Education Economics*, 23 (4): 419-432.

Sloane, P. (2014). 'Overeducation, Skill Mismatches, and Labor Market Outcomes for College Graduates', IZA World of Labor.

Verhaest, D., T. Schatteman and W. Van Trier (2015). 'Overeducation in the early career of secondary education graduates: An analysis using sequence techniques'. *Young* 23: 336-356.

ESRI | ECONOMIC & SOCIAL
RESEARCH INSTITUTE