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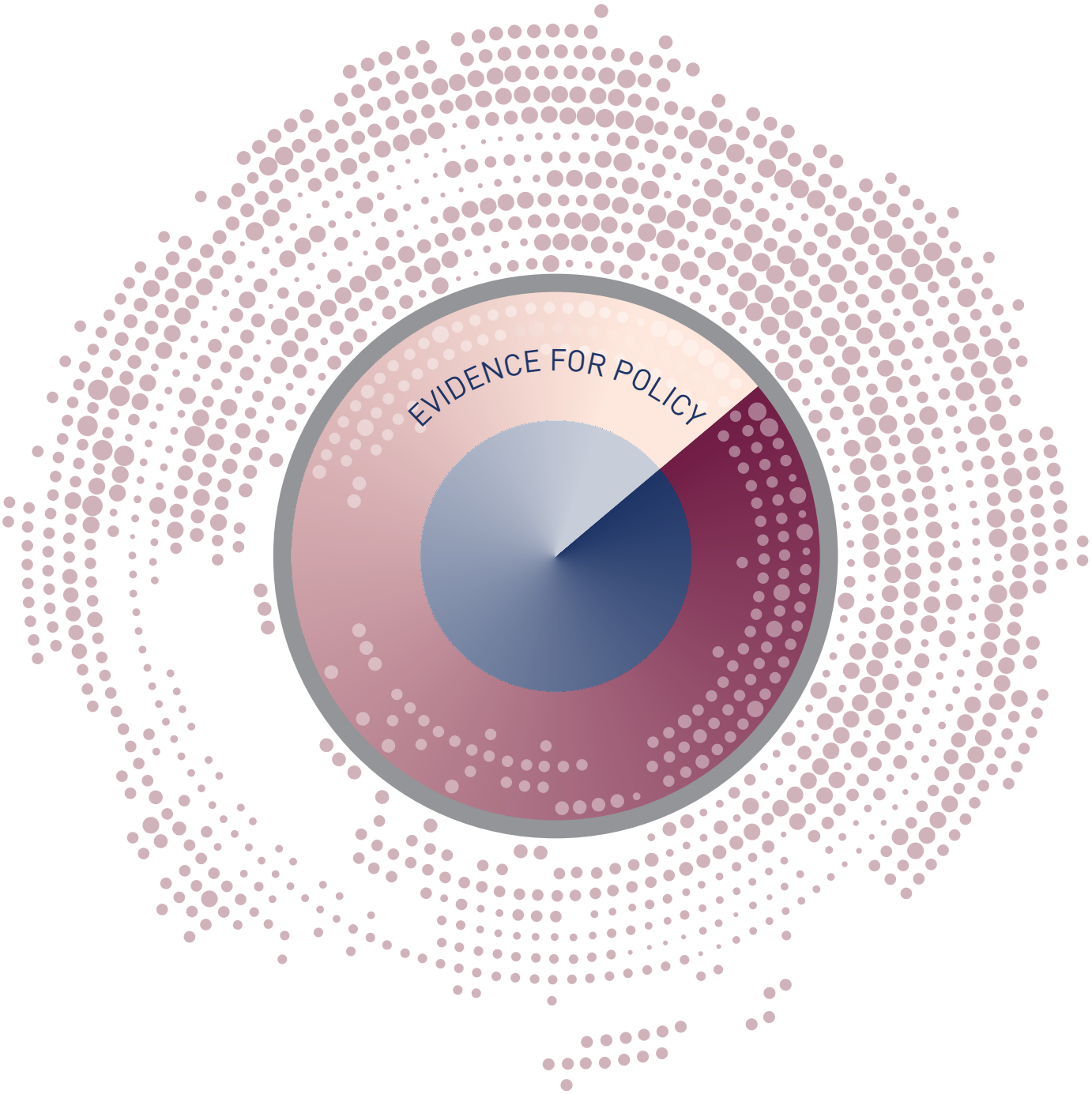
QUARTERLY ECONOMIC COMMENTARY

WINTER 2018

KIERAN MCQUINN, CONOR O'TOOLE, MATTHEW ALLEN-COGHLAN AND PHILIP ECONOMIDES



ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

QUARTERLY ECONOMIC COMMENTARY

Kieran McQuinn
Conor O'Toole
Matthew Allen-Coghlan
Philip Economides

Winter 2018

The forecasts in this *Commentary* are based on data available by 20 November 2018

Draft completed on 26 November 2018

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Research Notes are short papers on focused research issues. They are subject to refereeing prior to publication.

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.

The Quarterly Economic Commentary has been accepted for publication by the Institute, which does not itself take institutional policy positions. It has been peer reviewed by ESRI research colleagues prior to publication. The authors are solely responsible for the content and the views expressed.

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SUMMARY TABLE

	2015	2016	2017	2018	2019
Output (Real Annual Growth %)					
Private Consumer Expenditure	3.6	4.0	1.6	2.6	2.3
Public Net Current Expenditure	1.4	3.5	3.9	4.5	5.0
Investment	50.8	51.7	-31.0	-6.3	9.8
Exports	39.3	4.4	7.8	8.7	5.2
Imports	33.2	18.5	-9.4	1.7	6.3
Gross Domestic Product (GDP)	25.1	5.0	7.2	8.2	4.2
Gross National Product (GNP)	13.8	11.5	4.4	7.8	3.8
Prices (Annual Growth %)					
Consumer Price Index (CPI)	-0.3	0.0	0.3	0.6	1.1
Growth in Average Hourly Earnings	2.8	2.5	1.5	2.6	2.9
Labour Market					
Employment Levels (ILO basis ('000))	2,057	2,132	2,194	2,258	2,331
Unemployment Levels (ILO basis ('000))	226	195	158	142	118
Unemployment Rate (as % of Labour Force)	10.0	8.4	6.7	5.7	5.1
Public Finance					
General Government Balance (€bn)	-4.9	-1.5	-0.8	-1.5	-2.4
General Government Balance (% of GDP)	-1.9	-0.5	-0.4	-0.5	-0.7
General Government Debt (% of GDP)	76.8	73.4	68.4	64.3	62.0
External Trade					
Balance of Payments Current Account (€bn)	11.6	-11.4	24.9	38.4	36.3
Current Account (% of GNP)	5.8	-5.1	10.7	15.2	13.6

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

NATIONAL ACCOUNTS 2017

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2016	2017	Change in 2017		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	96.6	99.9	3.1	1.3	1.6
Public Net Current Expenditure	27.8	29.6	6.5	2.5	3.9
Gross Fixed Capital Formation	97.6	69.0	-29.3	2.4	-31.0
Exports of Goods and Services	328.2	352.6	7.4	-0.3	7.8
Physical Changes in Stocks	6.4	3.5			
Final Demand	**557.0**	**554.6**	**-0.4**	**0.5**	**-0.9**
less:					
Imports of Goods and Services	271.1	263.3	-7.9	1.6	-9.4
Statistical Discrepancy	2.1	2.8			
GDP at Market Prices	**273.2**	**294.1**	**7.6**	**0.4**	**7.2**
Net Factor Payments	-51.1	-61.0			
GNP at Market Prices	**222.2**	**233.1**	**4.9**	**0.5**	**4.4**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2016	2017	Change in 2017	
	€ bn	€ bn	€ bn	%
Agriculture	3.3	4.2	0.9	27.0
Non-Agriculture: Wages, etc.	81.8	85.7	3.9	4.7
Other	102.2	113.3	11.1	10.8
Adjustments: Stock Appreciation	1.1	0.0		
Statistical Discrepancy	0.5	-2.8		
Net Domestic Product	**236.7**	**250.6**	**13.9**	**5.9**
Net Factor Payments	-51.1	-61.0	-9.9	19.3
National Income	**185.6**	**189.6**	**4.0**	**2.2**
Depreciation	63.9	72.0	8.1	12.6
GNP at Factor Cost	**249.5**	**261.6**	**12.1**	**4.8**
Taxes less Subsidies	-27.4	-28.4	-1.1	3.9
GNP at Market Prices	**222.2**	**233.1**	**11.0**	**4.9**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2016	2017	Change in 2017
	€ bn	€ bn	€ bn
X – M	42.4	89.3	46.9
F	-49.9	-59.8	-9.9
Net Transfers	-3.8	-4.6	-0.8
Balance on Current Account	**-11.4**	**24.9**	**36.3**
as % of GNP	-5.1	10.7	15.6

NATIONAL ACCOUNTS 2018

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2017	2018	Change in 2018		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	99.9	104.0	4.1	1.5	2.6
Public Net Current Expenditure	29.6	31.8	7.5	2.9	4.5
Gross Fixed Capital Formation	69.0	67.0	-3.0	3.6	-6.3
Exports of Goods and Services	352.6	383.5	8.8	0.0	8.7
Physical Changes in Stocks	3.5	3.0			
Final Demand	**554.6**	**589.3**	**6.3**	**0.9**	**5.3**
less:					
Imports of Goods and Services	263.3	269.1	2.2	0.5	1.7
Statistical Discrepancy	2.8	-0.1			
GDP at Market Prices	**294.1**	**320.2**	**8.9**	**0.6**	**8.2**
Net Factor Payments	-61.0	-67.1			
GNP at Market Prices	**233.1**	**253.1**	**8.6**	**0.7**	**7.8**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2017	2018	Change in 2018	
	€ bn	€ bn	€ bn	%
Agriculture	4.2	4.3	0.1	2.5
Non-Agriculture: Wages, etc.	85.7	90.7	5.0	5.8
Other	113.3	117.0	3.7	3.3
Adjustments: Stock Appreciation	0.0	0.0		
Statistical Discrepancy	-2.8	0.1		
Net Domestic Product	**250.6**	**273.2**	**22.7**	**9.0**
Net Factor Payments	-61.0	-67.1	-6.1	10.1
National Income	**189.6**	**206.1**	**16.5**	**8.7**
Depreciation	72.0	74.8	2.8	3.9
GNP at Factor Cost	**261.6**	**280.9**	**19.3**	**7.4**
Taxes less Subsidies	-28.4	-27.8	0.6	-2.1
GNP at Market Prices	**233.1**	**253.1**	**19.9**	**8.6**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2017	2018	Change in 2018
	€ bn	€ bn	€ bn
X – M	89.3	114.4	25.1
F		-70.8	-11.1
Net Transfers	-4.6	-5.1	-0.6
Balance on Current Account	**24.9**	**38.4**	**13.5**
as % of GNP	10.7	15.2	5.3

NATIONAL ACCOUNTS 2019

A: EXPENDITURE ON GROSS NATIONAL PRODUCT

	2018	2019	Change in 2019		
	€ bn	€ bn	Value	Price	Volume
Private Consumer Expenditure	104.0	108.2	4.0	1.7	2.3
Public Net Current Expenditure	31.8	33.9	6.6	1.5	5.0
Gross Fixed Capital Formation	67.0	75.5	12.8	2.7	9.8
Exports of Goods and Services	383.5	407.1	6.2	1.0	5.2
Physical Changes in Stocks	3.0	3.0			
Final Demand	**589.3**	**627.8**	**6.5**	**1.3**	**5.1**
less:					
Imports of Goods and Services	269.1	289.4	7.6	1.2	6.3
Statistical Discrepancy	-0.1	-0.1			
GDP at Market Prices	**320.2**	**338.3**	**5.7**	**1.4**	**4.2**
Net Factor Payments	-67.1	-71.7			
GNP at Market Prices	**253.1**	**266.6**	**5.3**	**1.5**	**3.8**

B: GROSS NATIONAL PRODUCT BY ORIGIN

	2018	2019	Change in 2019	
	€ bn	€ bn	€ bn	%
Agriculture	4.3	4.3	0.1	1.4
Non-Agriculture: Wages, etc.	90.7	96.0	5.3	5.9
Other	117.0	120.1	3.1	2.6
Adjustments: Stock Appreciation	0.0	0.0		
Statistical Discrepancy	0.1	0.1		
Net Domestic Product	**273.2**	**289.4**	**16.2**	**5.9**
Net Factor Payments	-67.1	-71.7	-4.6	6.8
National Income	**206.1**	**217.7**	**11.6**	**5.6**
Depreciation	74.8	77.5	2.7	3.6
GNP at Factor Cost	**280.9**	**295.2**	**14.3**	**5.1**
Taxes less Subsidies	-27.8	-28.6	-0.7	2.6
GNP at Market Prices	**253.1**	**266.6**	**13.5**	**5.3**

C: BALANCE OF PAYMENTS ON CURRENT ACCOUNT

	2018	2019	Change in 2019
	€ bn	€ bn	€ bn
X – M	114.4	117.7	3.3
F	-70.8	-75.7	-4.8
Net Transfers	-5.1	-5.7	-0.6
Balance on Current Account	**38.4**	**36.3**	**-2.2**
as % of GNP	15.2	13.6	-0.8

The Irish Economy – Forecast Overview

The Irish economy looks set to register another very strong year of growth in 2018, with the outlook remaining positive as well for 2019. While difficulties persist with the interpretation of the National Accounts, it is fair to say that the growth performance in 2018 has been broadly based with both domestic and external factors contributing significantly to the growth performance.

Overall, while headline GDP suggests a growth rate of over 8 per cent for the economy, underlying economic activity grew somewhere in the region of 4.5 to 5 per cent.

While the outlook for 2019 is also positive for the Irish economy, next year will see a number of significant challenges mainly from an international perspective. The outcome of the Brexit process is particularly important. A relatively benign UK exit such as the establishment of a European Economic Area agreement would see the Irish economy grow by 3 per cent in 2019, compared to a 4 per cent outcome where the UK remains in the EU. If the United Kingdom were to leave under a WTO style agreement, then Irish economic activity in 2019 would grow by just over 2.5 per cent in 2019. The forecasts of the *Commentary* assume the UK's continuation of effective membership within the EU.

Notwithstanding the challenges posed by international developments, the persistently strong growth rate of the domestic economy does lead to questions as to the sustainability of economic performance going forward. In a Research Note to the *Commentary*, McQuinn addresses the implications of increased residential activity in terms of the labour market and the financial sector. Overall, while both credit and employment levels associated with construction are quite low at present, a significant increase in housing supply would likely see a sizeable increase in both the balance sheets of the Irish banking sector and the rate of inward net migration.

Budget 2019 saw both current and capital expenditure set to increase considerably over the next year. The scale of the increased expenditure has inevitable implications for the public finances with a deficit now likely in 2019. Prior to the Budget, a surplus had seemed a likely outcome. Some of this increased expenditure is due to budget overruns in the key health portfolio. Another key feature of the public finances in 2018 is the significant increase in corporation tax receipts.

In another Special Article to this *Commentary*, Roantree et al. (2018) examine the budgetary package from a distributional perspective. Their analysis suggests that relative to a neutral benchmark, where all thresholds, duties and benefit payments rose in line with forecast wage growth, the budget resulted in households' disposable income being 0.66 per cent less than the benchmark level. The difference between the benchmark level and actual incomes were largest, on average, for lone parents, retirees, and lower-income households.

The International Economy

International developments in 2018 have been largely shaped by increased global trade tensions, uncertainties around Brexit and the Federal Reserve's continued interest rate increases in response to growing inflationary pressure. As 2018 progresses, economic headwinds have reduced growth relative to 2017. These pressures include increased financial stress, heightened trade barriers and increased debt levels among emerging market nations. These growing concerns are reflected in recent updates to the IMF's global economic outlook, downgrading world output growth to 3.7 per cent for both 2018 and 2019.[1]

According to preliminary estimates of year-on-year real GDP growth, economic activity in the European Union continues to slow, falling from 2.1 per cent in Q2 2018 to 1.9 per cent Q3 2018. This slowdown is felt most strongly in Italy, with a 0.8 per cent growth rate, far below the EU average. As of September 2018, unemployment has fallen to 8.1 per cent for the Euro Area with rates ranging from a low of 2.3 per cent in the Czech Republic to a high of 19.0 per cent in Greece. As of October 2018, the ECB has tapered quantitative easing to €15 billion per month and is likely to end net purchases in January 2019. Interest rate increases are expected to be introduced after the summer of 2019. Inflation in the Euro Area averaged 2.1 per cent in Q3 2018, reaching 2.2 per cent as of October 2018.

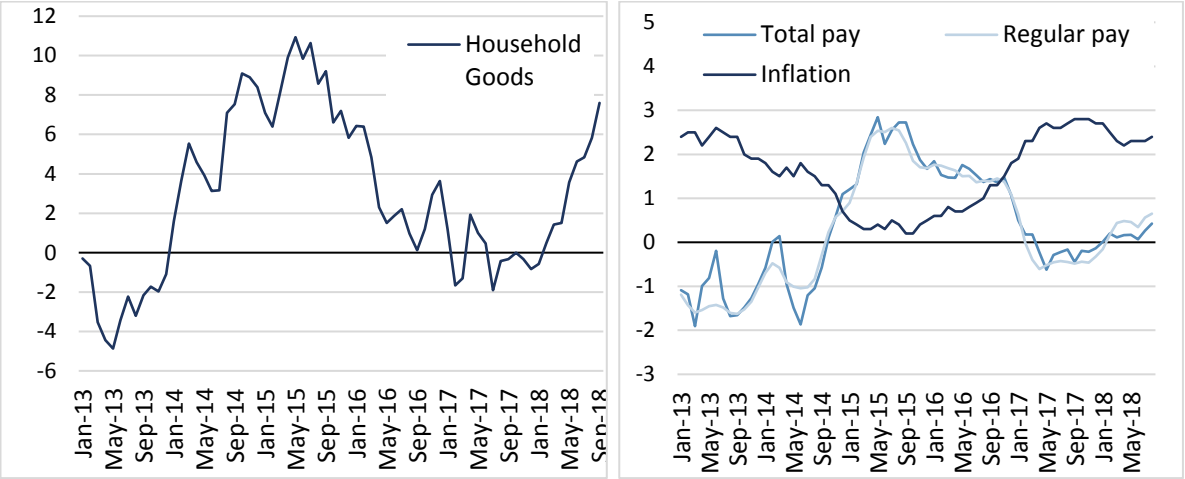
While real GDP growth in the UK has trended downwards since Q1 2015, the past two quarters of activity suggest the economy has recently gained momentum. Real GDP grew by 1.5 per cent in Q3 2018 relative to the same period last year. Figure 1 details recent activity in both the labour market and domestic sales. Retail sales of household goods have recovered in 2018, with seasonally-adjusted values averaging an increase of 7.6 per cent between July and September. Unemployment has continued to remain low throughout the year, most recently averaging 4.1 per cent between July and September.

However, strong inflationary pressure has caused real earnings to decline since November 2016. While British incomes have stalled, Figure 1 suggests expenditure is rising both in terms of volume and through increased prices. According to a recent ONS article, expenditure outweighed personal incomes by

[1] International Monetary Fund, 2018. *World Economic Outlook: Challenges to Steady Growth*, Washington, D.C.: International Monetary Fund, October 2018.

an average of £900 per UK household in 2017, making households net borrowers for the first time since 1988.[2]

FIGURE 1 KEY ECONOMIC INDICATORS OF UK, YEAR-ON-YEAR (%)

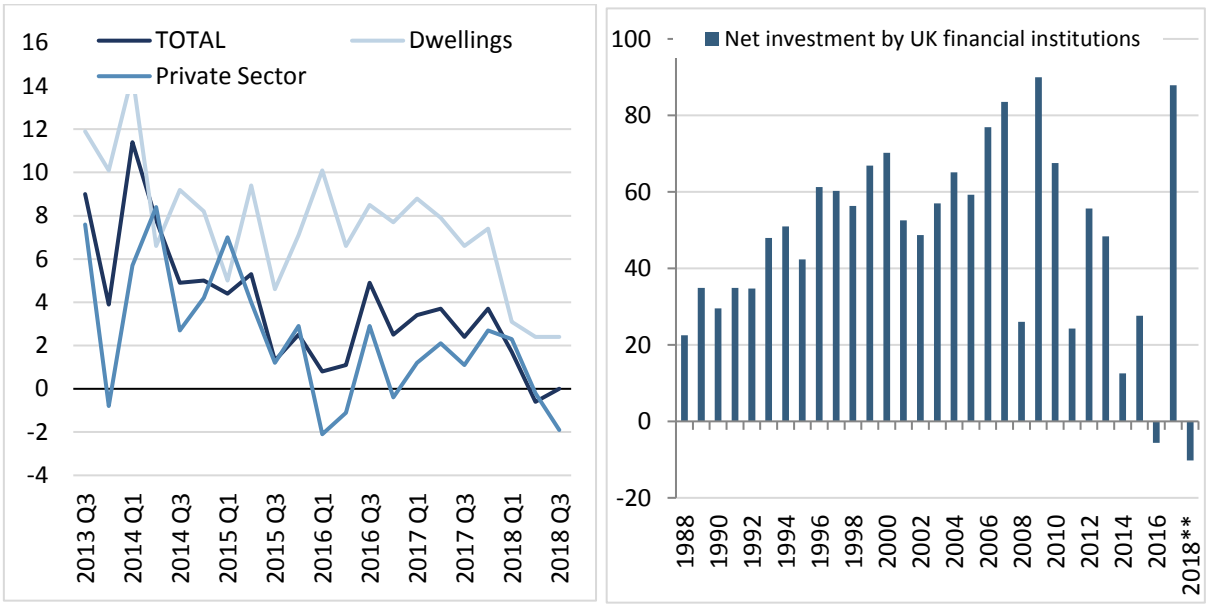


Sources: ONS, Retail sales, Great Britain: September 2018 (LHS), ONS database, UK labour market: October 2018 (RHS).
Note: Total pay includes bonuses while regular pay excludes bonus payments. Chained Volume of Retail Sales using seasonally-adjusted index numbers of sales per week and percentage increase on a year earlier.

Investment in the UK continues to decline in 2018, which is likely due to the ongoing uncertainty concerning key Brexit negotiations. As displayed in Figure 2, growth rates in total, private and construction investment have trended downwards over the past five years, and are now experiencing negative growth rates. The large surge in investment among UK financial institutions in 2017 appears to have reversed in recent quarters. This surge included the UK's highest annual acquisition of short-term assets since 2007, a common sign of uncertain investors shifting towards liquid portfolios. While the UK has a history of net investment over the last three decades, recent data for Q1 and Q2 of 2018 suggest the UK could experience a historically high level of disinvestment among domestic financial institutions.

[2] Office of National Statistics, 2018. 'Making ends meet: are households living beyond their means?', July 2018.

FIGURE 2 UK BUSINESS INVESTMENT YEAR-ON-YEAR GROWTH (%) AND UK FINANCIAL INSTITUTION NET INVESTMENT (£MILLION)



Source: ONS, Business investment real-time database (LHS),
ONS, Investment by insurance companies, pension funds and trusts: April to June 2018 (RHS).

As of late November 2018, the European Council has endorsed the Agreement on the withdrawal of the United Kingdom from the European Union. While the proposed Withdrawal Agreement has been met with mixed reception in British Parliament, a meaningful vote on the potential deal will not occur until December 11th 2018. The draft proposes a transition period until the end of 2020. During this period the UK will be able to continue participating in the EU Customs Union and the Single Market, enabling all four freedoms of movement.

As part of this agreement, the Protocol on Ireland and Northern Ireland, commonly referred to as the Irish backstop agreement, will be effective from the end of the transition period onwards. Until a subsequent agreement is negotiated between Europe and the UK, the backstop would enable a 'single EU-UK customs territory'.[3] The UK's National Institute of Economic and Social Research (NIESR) has published a report detailing the estimated effects of the proposed Brexit deal through use of their global macroeconomic model, NiGEM.[4] Relative to the most beneficial scenario of the UK staying in the EU, all other scenarios result in

[3] A Singles Customs Territory would require the UK to align with EU tariffs and regulations. There would be no trade barriers such as tariffs, quotas or checks on rules of origin excluding cases for fishing and aquaculture products. The UK would be unable to lower customs tariffs below the EU Common Customs Tariff. Under this arrangement, Northern Ireland's businesses may export products to EU's internal market without restriction. Products from outside of Northern Ireland would require that the processes provided for in the Union Customs Code would have to be applied.

[4] Hantzsche, A., A. Kara and G. Young (2018). 'The Economic Effects of the Government's Proposed Brexit Deal', the National Institute of Economic and Social Research (NIESR).

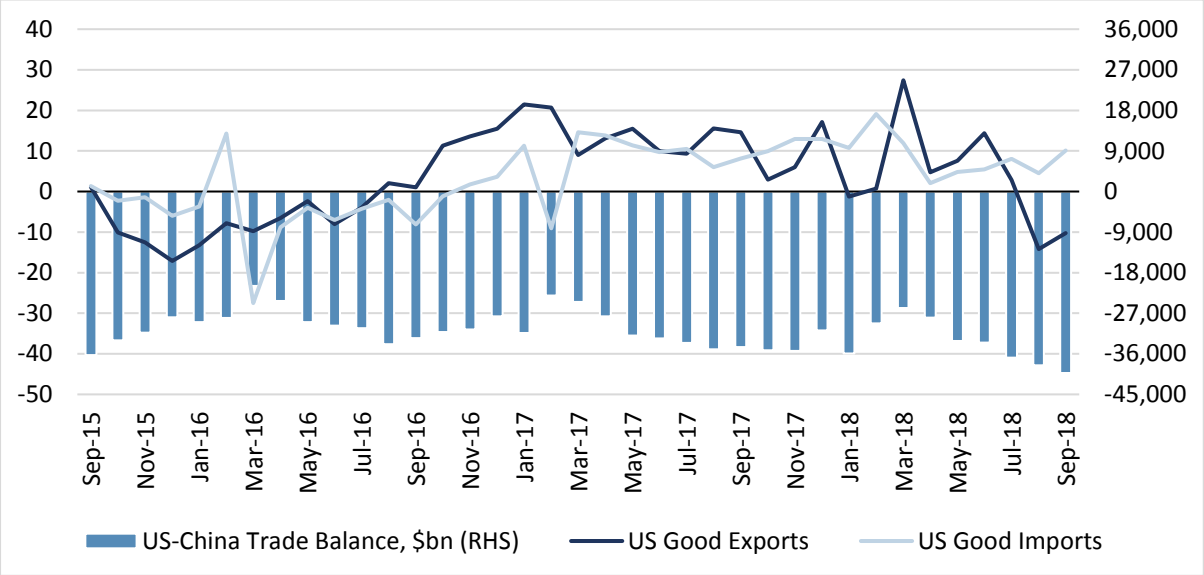
economic losses. The currently proposed deal strikes a middle-ground of losses, wedged between potential upsides of an Irish backstop scenario and downsides of an orderly no-deal outcome. By 2030, the report estimates the proposed deal will result in GDP losses of £1,090 per head (overall GDP down 3.9 per cent) relative to a 'stay' scenario. In a separate study, the London School of Economics (LSE), King's College London and the Institute for Fiscal Studies have jointly modelled the consequences of the proposed Brexit deal relative to a baseline of continued EU membership.[5] Between 2020 and 2030, the report estimates lower GDP per capita, ranging from 1.9 per cent to 5.5 per cent, relative to continued EU membership. In the Output section of the *Commentary* we examine the implications for the short-run domestic forecast of different Brexit scenarios.

The US economy grew at an annual rate of 3.5 per cent in Q3 2018. Personal consumption contributed 2.7 percentage points towards this increase. As of October 2018, the US unemployment rate declined to 3.7 per cent, a level consistent with full employment. The outlook for inflation remains on target following the Federal Reserve raising the official US interest rate to a range of 2 to 2.25 per cent in September 2018. Given the strong inflationary pressure introduced by a combination of stimulatory fiscal policy, tightened labour market conditions and rising trade protectionism throughout 2018, a fourth increase in the official US interest rate range to 2.25-2.5 per cent in December 2018 seems likely.

Trade performance for the US weakened in Q3 2018, following a 7 per cent year-on-year decline in the export of goods and a 9 per cent increase in imports. Between January and September, the US trade deficit in 2018 expanded by 9.5 per cent relative to the same period last year. Following the implementation of bilateral trade tariffs between July and September, Figure 3 highlights a significant decline in US exports. The overall impact on US-China trade has resulted in a 10 per cent rise in the trade deficit between January and September of 2018 relative to the same period last year. This extends the US-China trade deficit to a record high of $40 billion.

[5] Levell, P., A. Menon, J. Portes and T. Sampson, (2018). 'The Economic Consequences of the Brexit Deal', Centre of Economic Performance Brexit Analysis, the London School of Economics and Political Science.

FIGURE 3 US-CHINA SEASONALLY-ADJUSTED IMPORTS AND EXPORTS, Y-O-Y GROWTH (%)



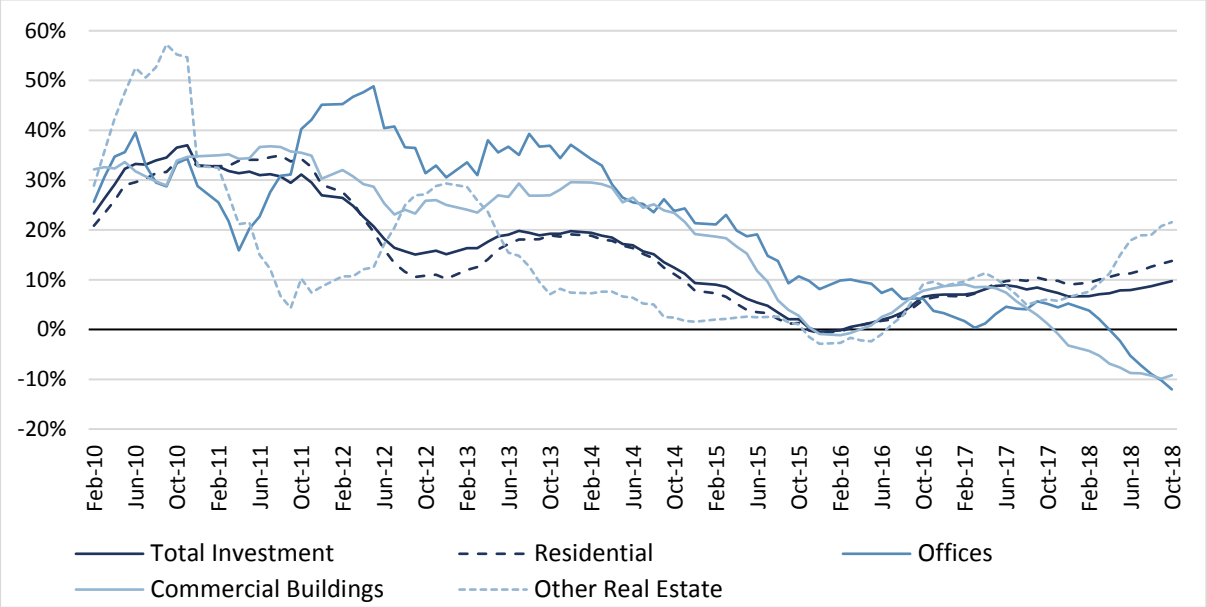
Source: United States Census Bureau, US Export and Import data for goods.

Real GDP in China grew year-on-year by 6.5 per cent in Q3 2018, its lowest increase since early 2009. Pressures in the banking sector, potential US tariff rate increases in January and attempts at curtailing growth in the real estate market appear to be impacting on growth in the Chinese economy.

China's National Bureau of Statistics' most recent release of housing data reveals the annual moving average of real estate investment increased by 9.7 per cent, year-on-year, in October 2018. As Figure 4 highlights, activity has been primarily focused on residential property (+13.7 per cent) while offices and houses for business[6] both continued to experience significant declines in investment. A recent moderation of activity in the Chinese real estate market comes in tandem with the introduction of price caps on new apartments and limitations on the resale of real estate purchases.

6 This is a term used by China's national statistics office. 'Houses for business' represent four times the value of offices in China thus are a significant and unique component of commercial real estate in the sector.

FIGURE 4 US-CHINA SEASONALLY-ADJUSTED IMPORTS AND EXPORTS, Y-O-Y GROWTH (%)



Source: National Bureau of Statistics of China.

Real GDP in Japan grew year-on-year by 0.4 per cent for Q3 2018, following poor export performance and continued declines in private residential investment. Other developments in the Japanese economy include record levels of job availability, a decline in the unemployment rate to 2.3 per cent and low annual inflation of 0.4 per cent in September. This labour shortage is likely to contribute towards poor economic activity. With Japan and six other nations having ratified the 'Comprehensive and Progressive Agreement for Trans-Pacific Partnership' (CPTPP),[7] the agreement is due to come into effect at year end. This promising trade relationship combined with Japan's success in forestalling potential automobile tariffs are targeted at boosting growth.

Developments in oil prices

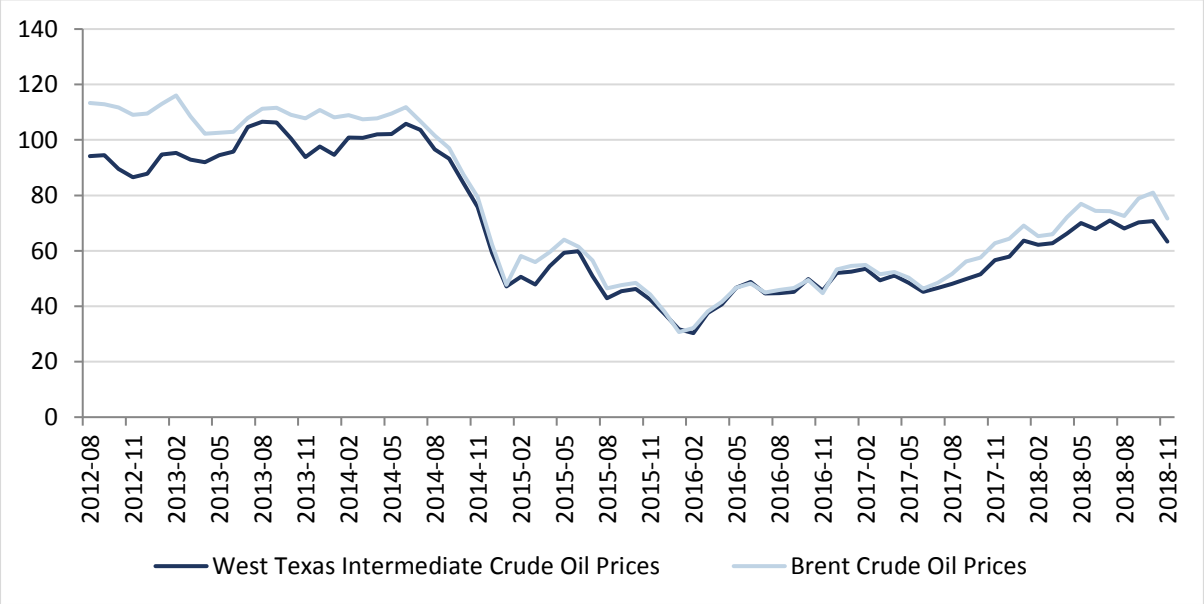
As displayed in Figure 5, trends in global oil prices suggest a recent softening of inflationary pressure. Average oil prices from January to early November had increased between 33 and 37 per cent for Brent crude and WTI crude, respectively, relative to the same period last year. Although sanctions on the Iranian economy came into effect on 4 November, this restriction on supply was

[7] The CPTPP was originally known as TPP, as Trans-Pacific Trade Agreement that had been signed in 2016 but never entered into force as a result of the US withdrawing. The remaining 11 nations held a formal signing ceremony for CPTPP, which no longer requires the participation of the US. Since agreement has been ratified by the majority of signatory nations, CPTPP will be effective from December 30th 2018 onwards.

largely outweighed by an OPEC pact formed in June 2018, which strongly boosted global oil production.[8]

While concerns of a global slowdown rise and fears of an oil supply gap subside, both Brent and WTI crude oil prices have fallen by approximately 15 per cent between early October and November of 2018. Prices may fall further during the remainder of the year as risks of greater US-Chinese trade tensions and currency volatility among emerging markets threaten global demand. From an Irish perspective, low oil prices may lead to an extended period of low inflation and reduced pressures on household expenses.

FIGURE 5 CRUDE OIL PRICES, NOT SEASONALLY-ADJUSTED ($ PER BARREL)

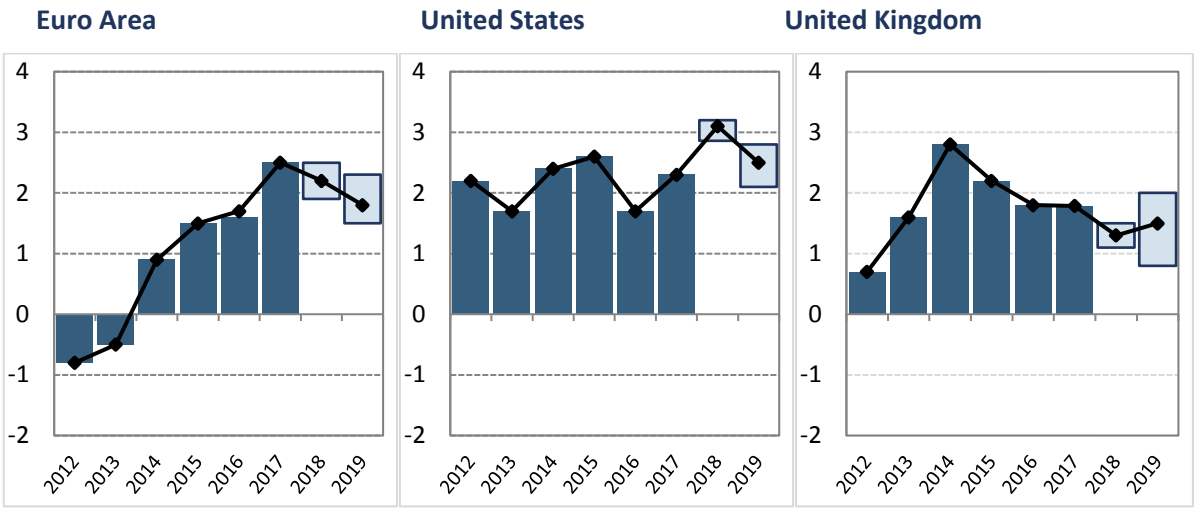


Sources: Federal Reserve Bank of St. Louis.
Note: Q4 2018 uses average of daily prices between October 1 and November 5.

Figure 6 summarises the forecasts for GDP growth produced by the major institutions of their respective economies. These forecasts signal a broad-based expectation of economic moderation across the majority of developed economies.

[8] According to October's Reuters survey of OPEC supply, oil production rose by 390,000 barrels per day relative to September 2018.

FIGURE 6 REAL GDP GROWTH (% CHANGE, YEAR-ON-YEAR)



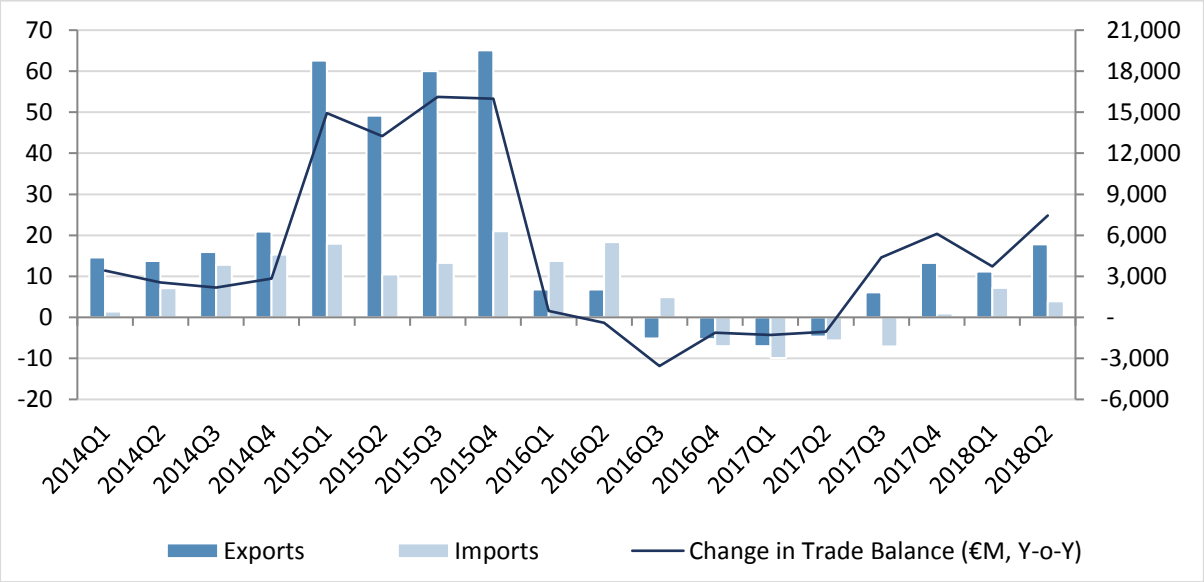
Sources: FocusEconomics, IMF, OECD, HM Treasury and Federal Reserve.

IMPLICATIONS FOR IRISH EXPORTS, IMPORTS AND THE BALANCE OF PAYMENTS

Goods

Net exports of Irish goods contributed €7.4 billion to the trade surplus for Q2 2018. In Figure 7, goods trade in Q2 2018 saw Irish exports grow at an annual rate of 17.8 per cent while imports increased by 3.9 per cent. Over the past four quarters, for every €1 worth of goods Ireland imported, the economy exported €2.24 worth of goods.

FIGURE 7 ANNUAL GROWTH RATE (%) IN TOTAL IRISH EXPORTS AND IMPORTS OF GOODS

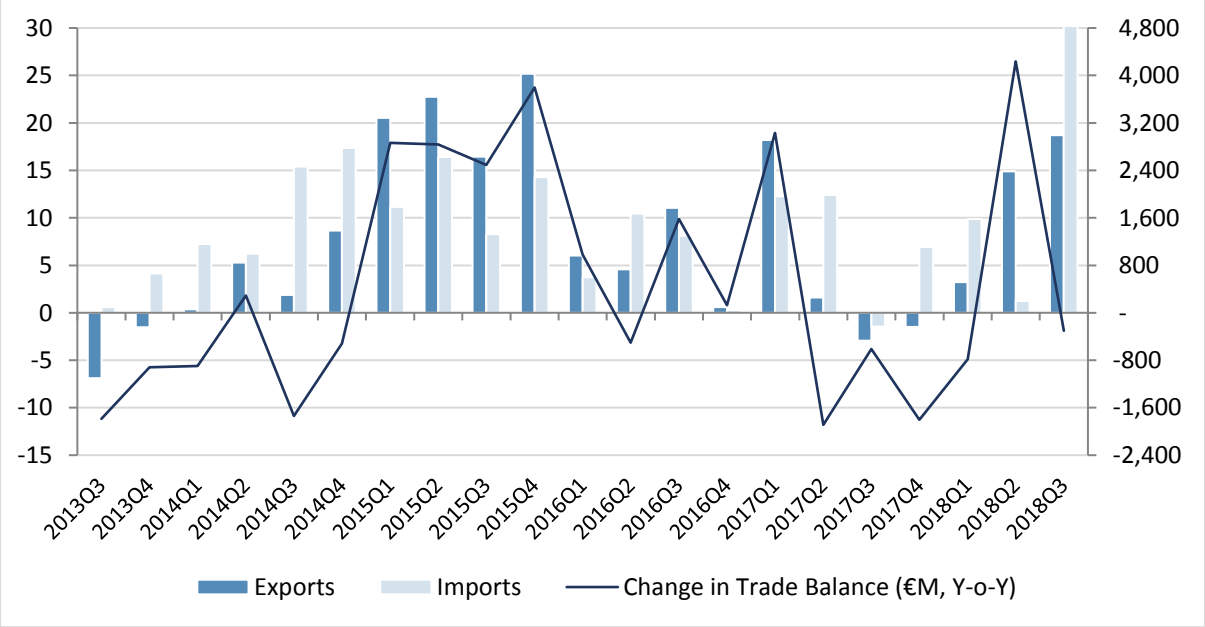


Source: Central Statistics Office.
Note: Export and Import growth rates feature on the LHS whereas € million changes in trade are highlighted by the RHS.

While these traded goods are owned by Irish resident firms, some of these goods may never physically cross the Irish border. When examining the trade of goods, foreign-owned Irish resident firm activities such as processing and merchanting must be taken into account.[9] Cross-border trade captured through monthly merchandise-related trade statistics effectively excludes the trade of ownership goods (e.g. contract manufacturing, merchanting). Isolating and analysing cross-border trade arguably enhances our understanding of domestic exporter activity.[10]

In Q3 2018, seasonally-adjusted cross-border imports of goods increased by 31 per cent relative to the same period last year. Exports increased by 18.7 per cent, bolstered by trade in medicinal and pharmaceutical products. Figure 8 highlights how the surplus experienced in the previous quarter largely outweighs recent negative contributions to the trade balance.

FIGURE 8 ANNUAL GROWTH RATE (%) IN CROSS-BORDER IRISH EXPORTS AND IMPORTS



Source: Central Statistics Office.

Increased cross-border exports in 2018 stem largely from chemical products, which grew year-on-year by 37 per cent in Q3 2018. Of these chemical products, medicinal and pharmaceutical exports also increased by 37 per cent. Chemical products accounted for two-thirds of total exports between January and

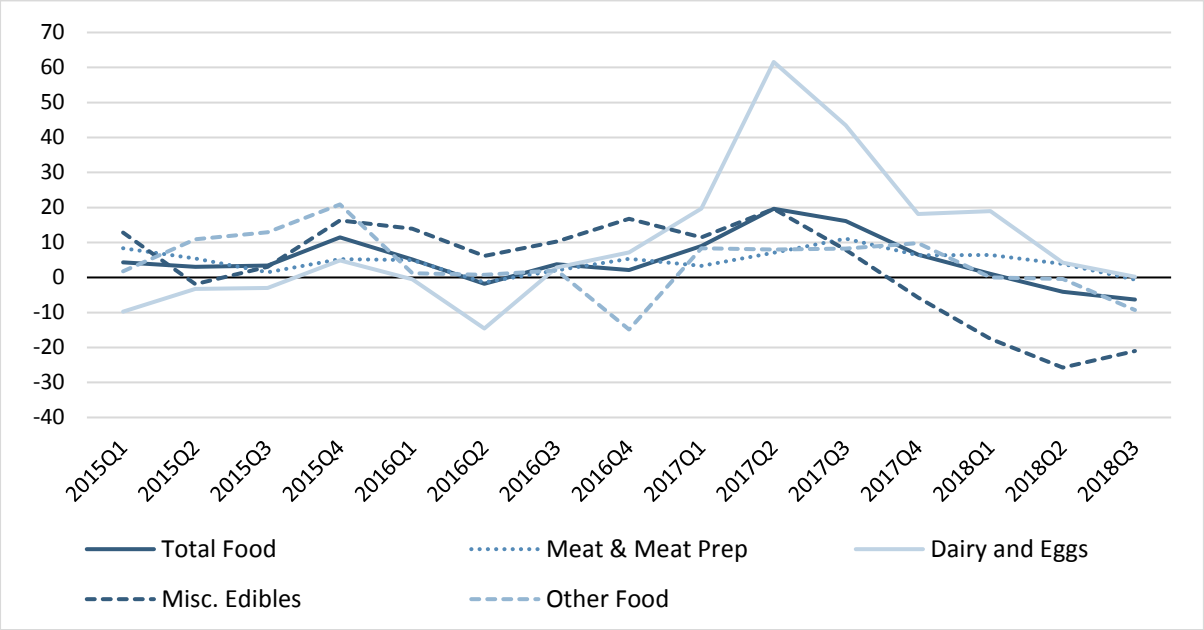
9 'Goods for processing' is dominated by 'Contract Manufacturing', a process in which multinational companies residing in Ireland issue contracts to foreign firms to produce goods. Although these goods never enter the Irish economy, due to ownership of these goods pertaining to Irish resident firms, sales are recorded as an Irish export. 'Merchanting' consists of the buying and selling of completed goods abroad which at no stage enter or leave Ireland.

10 For further details on ownership trade, see CSO's 'Explaining Goods Exports and Imports 2012-2016'.

September 2018. Exports of machinery and equipment, largely represented by electrical machinery and office machines, have been consistently declining since mid-2017.

Given the vulnerability of the domestic agricultural sector to Brexit, the fall in total food and live animal exports by 6.3 per cent relative to Q3 2017 is of note. Figure 10 splits food into four major sub-components, highlighting a broad-based decline in exports occurring across all food item types. While both the UK and EU contributed towards modest growth in Irish food exports, the remainder of the world's demand for Irish food products declined by 16.9 per cent relative to the January-September period of 2017.

FIGURE 9 ANNUAL GROWTH RATE (%) IN CROSS-BORDER FOOD EXPORTS



Source: Central Statistics Office.

In Q3 2018, total cross-border imports of goods rose year-on-year by 30 per cent. This marks the highest rate of growth since Q1 2006. For the year to date, machinery and transport equipment products and chemicals products represented 40 and 24 per cent of total imports, respectively. Machinery imports fell by 3.3 per cent and chemicals by 0.3 per cent for the same period.

Table 1 displays changes in exports and imports between regions for the year up to September 2018. Relative to 2017, Ireland's three-quarter cumulative trade deficit with the UK increased by 60 per cent to €2.7 billion. Bilateral trade in chemicals and related products experienced a 15 per cent decline compared to the same period last year. Imports from the UK rose by 4 per cent, largely driven

by a 40 per cent increase in the import of gas products (natural and manufactured).

While trade in chemical products fell with the UK, trade with Europe and the US appears to have increased significantly. Excluding the UK, total exports and imports of goods with the EU yielded double-digit growth. Imports of medicinal products from Germany increased by 425 per cent, up from €0.9 billion in 2017 to €5 billion in 2018. Overall trade with the US saw the greatest improvement compared to the January-September period of 2017, causing the trade surplus with the US to increase by 40.5 per cent (+€5.2 billion). The 15 per cent rise in exports was driven almost entirely by medicinal products and organic chemicals, with the combined value of these two items representing 66 per cent of total Irish goods exports to the US, relative to 55 per cent in 2017.

TABLE 1 JANUARY-SEPTEMBER ANNUAL CHANGE (%) IN GOODS EXPORTS AND IMPORTS

	Exports	Imports
Total – UK	**-5**	**4**
Food and live animals	1	7
Chemicals and related products	-15	-15
Machinery and transport equipment	-12	7
Miscellaneous manufactured articles	3	3
Total – Rest of EU	**16**	**26**
Food and live animals	3	6
Chemicals and related products	29	104
Machinery and transport equipment	-17	5
Miscellaneous manufactured articles	6	-1
Total – US	**15**	**-12**
Food and live animals	-39	19
Chemicals and related products	37	-45
Machinery and transport equipment	-42	8
Miscellaneous manufactured articles	3	0

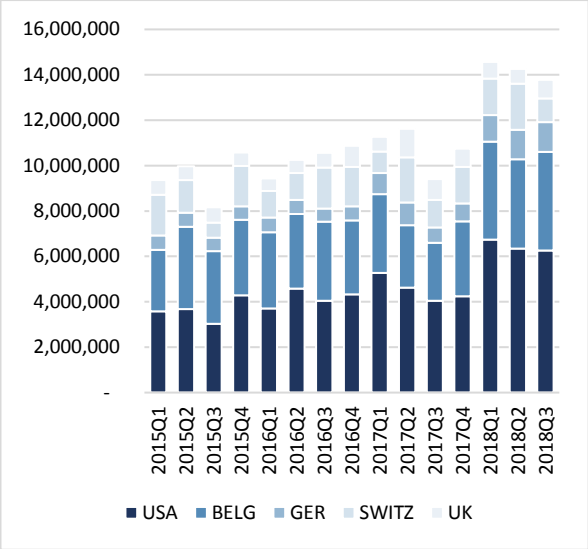
Source: Central Statistics Office.

While the Irish trade balance for goods is currently at a surplus of €38 billion over the past three quarters of 2018, the surplus increases to €48 billion when focusing solely on chemical and related products. Given the importance of chemical products to Ireland's trade surplus in goods, it is important that recently volatile changes in chemical trade patterns are examined in greater detail. Though these products are numerous in variety, medicinal products and organic chemicals represented 84 per cent of exported and 77 per cent of imported chemical and related products. Figure 10 combines these two items, displaying

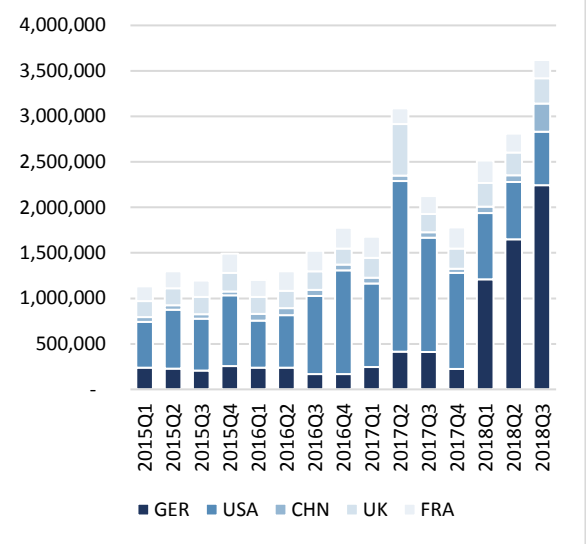
recent quarterly exports by destination and imports by origin. Demand for chemical exports to Belgium and the US have grown rapidly in 2018, now representing 60 per cent of medicinal and organic chemical export demand. Growth in German imports have significantly outpaced the US for three consecutive quarters in 2018, contributing to the 425 per cent growth rate previously noted.

FIGURE 10 TOTAL MEDICINAL AND ORGANIC CHEMICAL TRADE BY TOP FIVE COUNTRIES

A. Exports by Destination (€'000)



B. Imports by Origin (€'000)

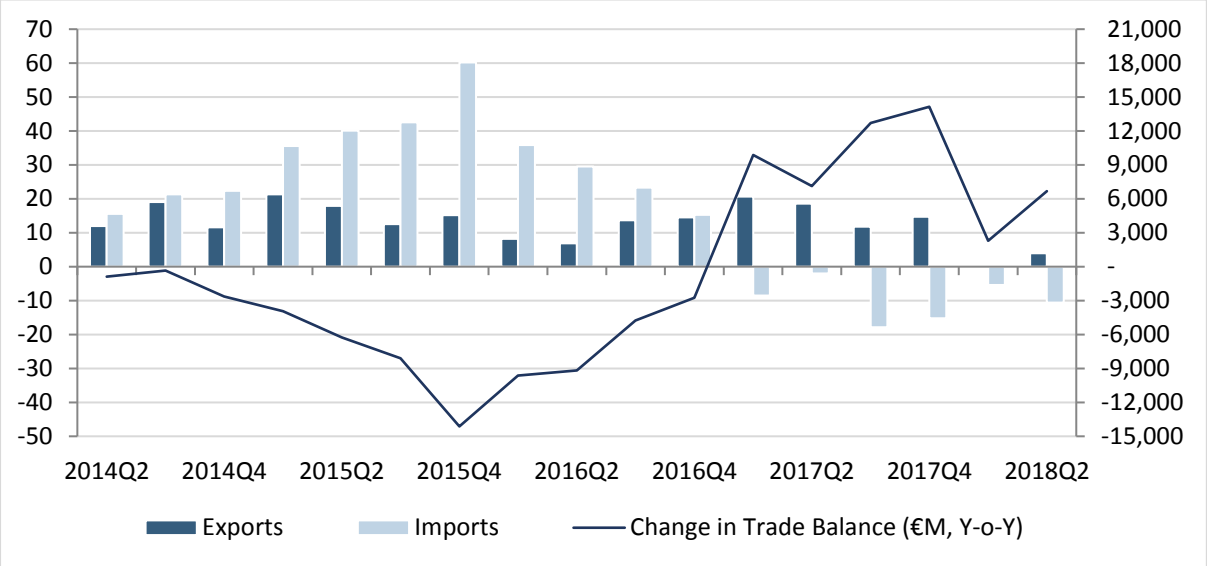


Source: Central Statistics Office, QEC calculations.

Services

Given that two-thirds of total Irish imports are based on the purchase of foreign services, even marginal declines in service growth can have a significantly positive effect on the trade surplus. Service exports grew year-on-year by 6.7 per cent in Q2 2018. Imports of services declined by 10.2 per cent in Q2 2018, relative to the same period last year.

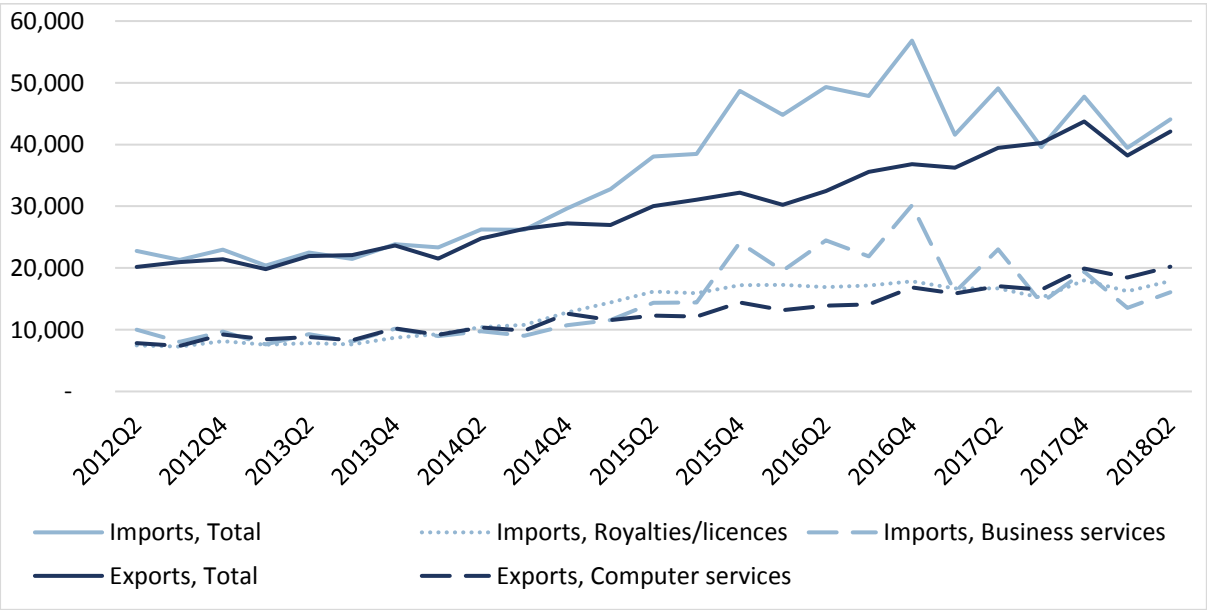
FIGURE 11 ANNUAL GROWTH RATE (%) IN IRISH SERVICE EXPORTS AND IMPORTS



Source: Central Statistics Office.

Exports of computer services in Q2 2018 increased by 18.6 per cent relative to the same period last year. Significant and consecutive declines in business services since Q2 2017 have moderated overall growth rates in service exports. Royalties & licenses and business services formed 71 per cent of services imports in Q2 2018. Successive year-on-year reductions in both items have resulted in six consecutive quarters of import declines, as reflected in Figure 12. Imports of research and development services experienced the largest annual decrease, falling by 68 per cent in Q2 2018.

FIGURE 12 EXPORTS AND IMPORTS OF SERVICES (€ MILLION)



Source: Central Statistics Office.

In terms of the overall impact on headline GDP, movements in certain elements of imports are expected to be offset by related movements in investment. Table 2 highlights the relationship over the past four years between R&D service imports and investment into R&D. For 2018, forecasts of service imports reflect the *Commentary*'s outlook on R&D investment, in that a one-for-one investment-import ratio is assumed in terms of the relationship between the annual values for fixed capital and services imports. If movements in, say, fixed capital R&D are not fully offset in a particular year by developments in the services imports of R&D, then this can cause significant fluctuations in GDP.

TABLE 2 GROSS DOMESTIC PHYSICAL CAPITAL FORMATION AND SERVICE IMPORTS (€ MILLION)

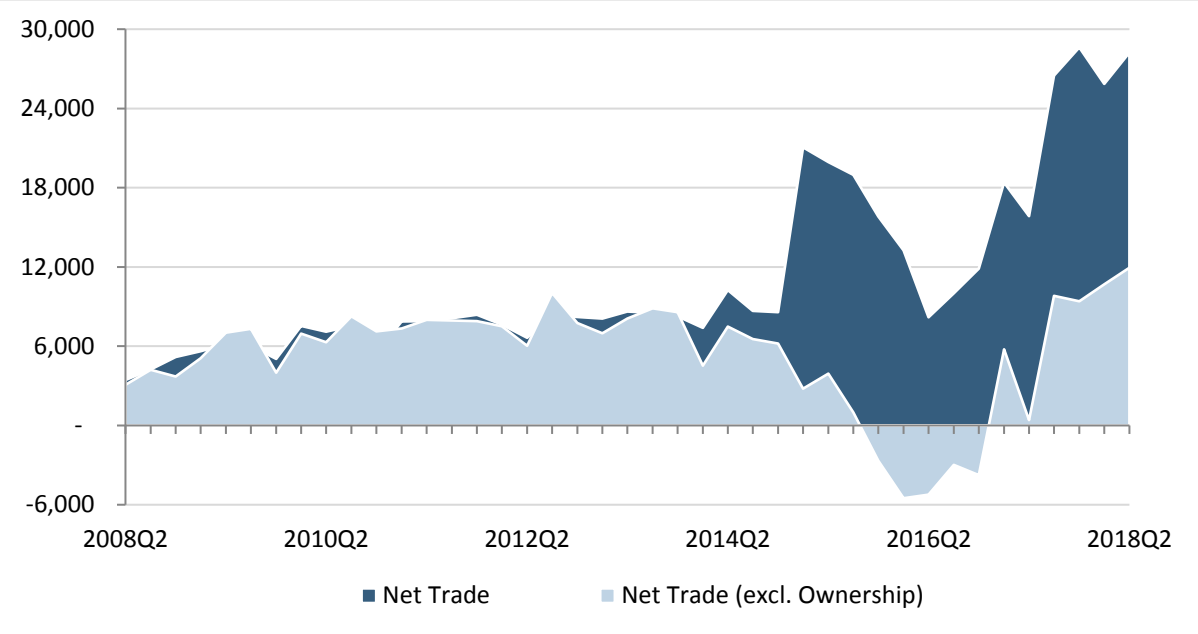
	2014	2015	2016	2017
Fixed Capital – R&D	9,944	30,553	58,137	26,810
Service Imports – R&D	8,704	28,158	58,052	26,832
Inv-Imp Ratio	0.87	0.92	1.00	1.00

Source: Central Statistics Office.

Trade Balance

The value of goods and service exports in Q2 2018 increased at an annual rate of 11 per cent to €94 billion while imports fell by 6 per cent to €67 billion. This resulted in a €27 billion contribution to the Irish trade surplus, 35 per cent of nominal GDP for Q2 2018. Comparing cross-border trade with National Accounts data reveals estimates of ownership trade in the overall trade balance. Figure 13 highlights these differences, facilitating the assessment of domestic trade activity and Ireland's international competitiveness over the past ten years. Most notably, due to the inclusion of ownership trade, a domestic trade deficit in 2016 (-6.4 per cent of GDP) was transformed into a major trade surplus (15.9 per cent of GDP).

FIGURE 13 CROSS-BORDER AND ADJUSTED NET EXPORTS OF GOODS AND SERVICES (€ MILLION)



Source: Central Statistics Office, QEC calculations.
Note: Adjustment to net trade accounts for ownership trade of goods. This includes, but is not limited to, forms of goods for processing such as contract manufacturing, and merchanting, i.e. purchase and resale of goods which do not enter the merchant's economy.

Due to the volatile nature of ownership trade in goods as well as services, forecasts in the *Commentary* continue to be based on trends in trade patterns linked to underlying Irish economic activity. QEC forecasts of exports are now 8.7 per cent and 5.2 per cent growth in 2018 and 2019 respectively. Imports are expected to fall marginally by 1.7 per cent in 2018, increasing by 6.3 per cent in 2019. The year-end current account is expected to reach €35.3 billion (14.1 per cent of GNP) in 2018 before falling somewhat to €32.9 billion (12.5 per cent of GNP) in 2019.

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.

Given the ongoing uncertainty concerning the outcome of the Brexit process, in the box below we illustrate the manner in which the different potential Brexit outcomes may impact the short-term forecast for the Irish economy.

BOX 1 ASSESSING THE IMPACTS OF DIFFERENT BREXIT TYPE SCENARIOS ON THE SHORT-TERM FORECAST OF THE IRISH ECONOMY

One particular challenge in assessing the domestic implications of Brexit is to examine the magnitude of the impact on short-term forecasts of the Irish economy. An increasing literature has sought to address the implications of Brexit on the Irish economy from a number of perspectives. Bergin et al. (2017) assess the implications from a macroeconomic perspective using COSMO – the large structural model of the Irish economy. The model links to an international network of models 'NiGEM' at the National Institute for Economic and Social Research (NIESR) in the United Kingdom and as such focusses on the impact of Brexit through trade channels. Using a similar framework, Conefrey and Walsh (2018) assess the implications for Irish growth rates of the UK Government Brexit White Paper. Other work by Lawless (2018a; 2018b) and Lawless and Morgenroth (2018) assesses the implications of Brexit on the domestic economy at a more sectoral level. In particular, this work focusses on the impact through trade on intermediate goods and services.

This box seeks to map the impacts of Brexit on the short-term forecasts of the domestic economy using results presented in Bergin et al. (2017). As COSMO utilises projections of key external variables from the NIESR NiGEM model, the model scenarios on Brexit produced by the NIESR are used in COSMO to model the impact of Brexit in Ireland. The scenarios considered are those in Ebell and Warren (2016) and comprise an EEA style agreement, a Switzerland/EU style of agreement (EFTA) where merchandise trade would be free but where EU financial services markets are not accessible to UK based institutions, and a WTO style agreement. The magnitudes of the impacts on trade, FDI and tariffs are derived by NIESR with reference to the international literature (see Ebell

and Warren, 2016), while the UK contribution to the EU budget is taken from HM Treasury and the EU.

When these simulations are performed on the Irish economy, the potential long-term impact of Brexit on Ireland is severe. While the three scenarios considered include a whole set of international variables that are linked to COSMO, the strongest effect is a reduction in the trade-weighted demand or Irish exports compared to what it otherwise would have been. Table A summarises the impacts on the domestic economy in 2027 of the different scenarios. In each of the scenarios, the same mechanisms are at play but the impacts are weakest for the 'EEA' scenario and strongest in the 'WTO' scenario. In COSMO, this shock is initially transmitted to the Irish economy through the traded sector. The shock to foreign demand would reduce the volume of output in the traded sector and exports over the medium- to long-run below their baseline values. The fall in traded sector output leads to labour demand being below base, which has knock-on effects for employment and the unemployment rate.

TABLE A THE IMPACTS OF BREXIT ON THE IRISH ECONOMY OVER THE MEDIUM TERM (2027)

Scenario	% Deviation from Baseline
EEA	-2.3
EFTA	-2.7
WTO	-3.8

Given the assessment of the longer-term impact, the question is how to relate this to shorter-term forecasts of the Irish economy? This is achieved by taking the changes from the baseline from the macroeconometric model and applying them to the short-term forecasts in the *Commentary*. The short-term forecast for the Irish economy in the absence of Brexit indicates GDP growth in 2019 of 4.2 per cent. We now take the percentage change from the baseline and apply it to the baseline GDP forecast for 2019 in the *Commentary*. We then calculate the growth rate between the 2018 GDP level and the new adjusted 2019 GDP level in the case of the three scenarios. The results are presented in Table B. Note we only present the results for the EEA and the WTO scenarios, as the difference in Year 1 between the EEA and FTA scenarios are trivial.

TABLE B THE IMPACTS OF BREXIT ON THE SHORTER-TERM COMMENTARY FORECASTS

Scenario	Year	GDP Level (€bn)	% Growth Rate 2019/2018
Estimate	2018	318.8	
Baseline	2019	331.5	4.2
EEA	2019	328.6	3.2
WTO	2019	327.1	2.8

As can be seen from the Table, in both scenarios the outlook is still positive for the Irish economy in 2019; GDP is set to increase by 3.2 under the EEA agreement and 2.8 per cent under a WTO style agreement. However, even over a one-year horizon, almost

1.0 percentage points has been knocked off the growth rate under the relatively benign EEA agreement with respect to a no Brexit baseline. Under the WTO, this reduction is almost 1.4 percentage points.

From a practical perspective it is worth noting that EEA membership is only possible for countries that are members of the EU or the EFTA. If the UK does leave the EU in March 2019, the EEA scenario implies that the UK will have to apply for EFTA membership. The application process could take up to 12 months. Therefore, the EEA option is unlikely to impact on either Irish or UK GDP in 2019.

It can be argued that the results presented in Table B are somewhat benign in nature as they assume a smooth adjustment over the long run, which is probably unrealistic. This is because Bergin et al. (2017) ultimately captures the long-run trade effects of Brexit. A variety of short-run effects such as heightened consumer and producer uncertainty, disruptions in financial markets and lack of access to international supply chains are not controlled for. However, these could be quite significant in magnitude resulting in a more substantial impact on the short-term outlook than suggested here.

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Bergin, A., A. Garcia-Rodriguez, E.L.W. Morgenroth and D. Smith (2017). 'Modelling the Medium- to Long-Term Potential Macroeconomic Impact of Brexit on Ireland', *The Economic and Social Review*, Vol 48(3), pp 305-316.

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This box was prepared by Kieran McQuinn.

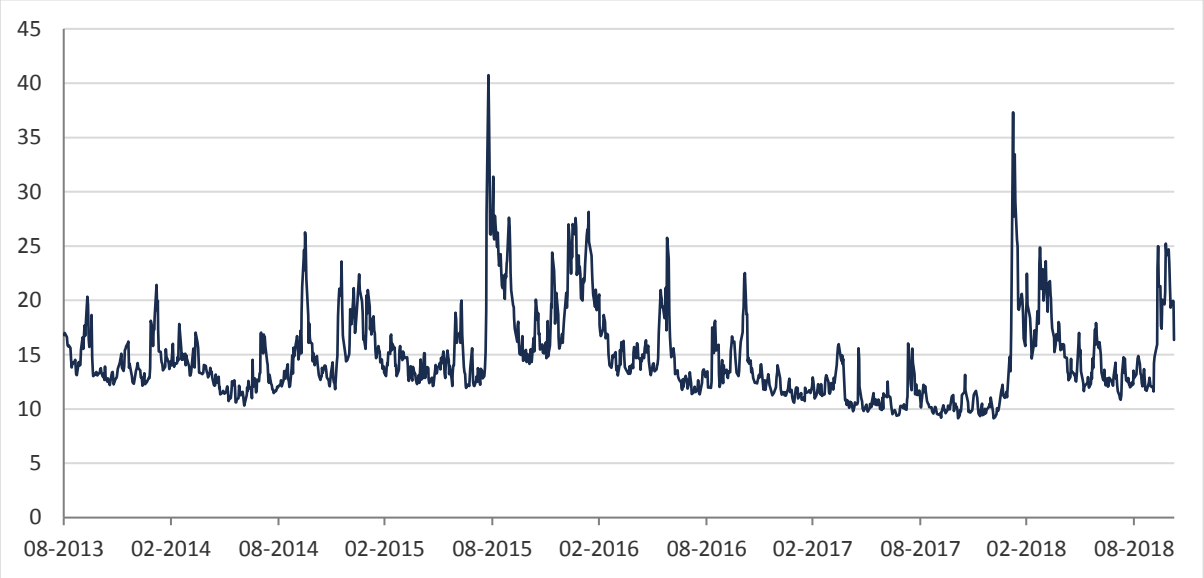
MONETARY AND FINANCIAL CONDITIONS

International monetary environment

Financial market volatility increased in Q3 2018 as stock market tensions contributed to an increasingly uncertain outlook. Brexit and the ongoing discussions with the European Commission concerning the Italian budgetary

position were some of the reasons for the uncertainty in a European context. Figure 14 outlines the CBOE VIX Index, the market standard measure of volatility. A discernible increase in volatility since the summer is evident.

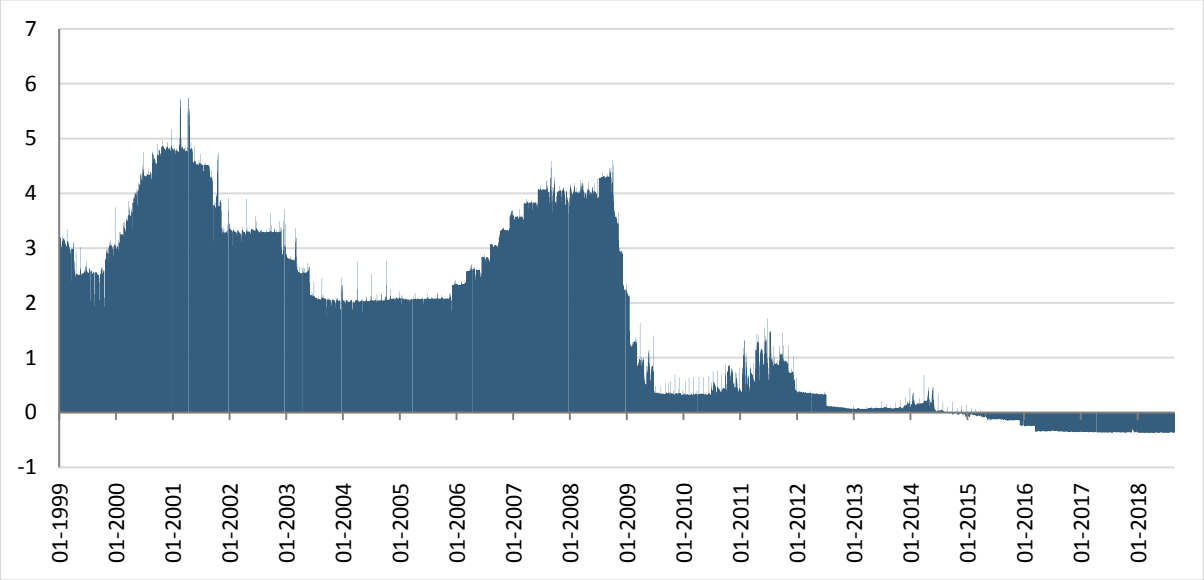
FIGURE 14 VIX VOLATILITY INDEX (%)



Source: St Louis Fed Database, from Chicago Board Options Exchange.

From a European perspective, monetary policy continues to provide a stabilising backstop to an increasingly uncertain environment. The Eonia rate (Figure 15) remains anchored at -0.4 per cent in line with the stated ECB policy of maintaining a negative overnight rate. Despite being committed to a removal of the extraordinary measures (asset purchases) from the end of 2018, the ECB continues to signal that policy rates will remain low into the middle of next year.

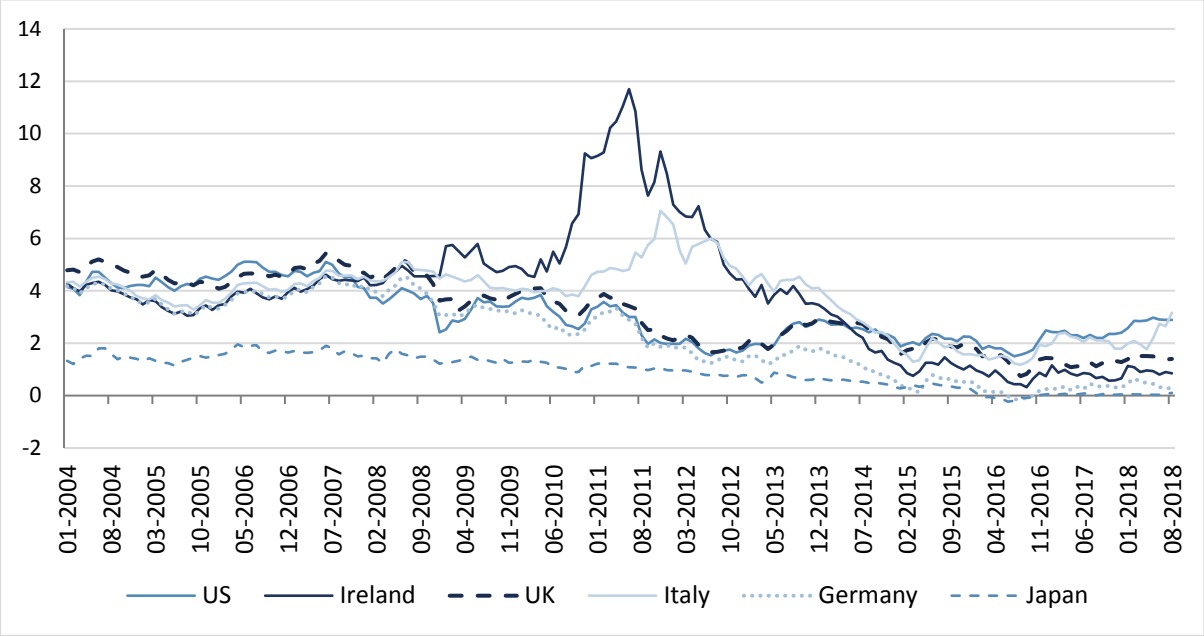
FIGURE 15 EURO OVERNIGHT INDEX AVERAGE, EONIA (%)



Source: European Central Bank, Statistical Data Warehouse.

Figure 16 presents the ten-year government bond yields for a selected group of economies. As of August 2018, Irish ten-year bond yields stood at 0.85 percentage points which was below the Eurozone average. Importantly, despite a peak in the first months of this year, the cost of borrowing has continued to trend downwards into the third quarter of 2018. This is in contrast to financing costs for other economies such as Italy where political tensions have led to uncertainty around debt sustainability. The decoupling of Ireland from other peripheral economies is a particular success and points towards increasing market confidence in Ireland's prospects. Given the historically low Euro Area interest rates at present, the highly indebted position of the Irish economy suggests that as much low cost long-term financing as possible should be secured by the authorities.

FIGURE 16 TEN-YEAR GOVERNMENT BOND YIELD (%)

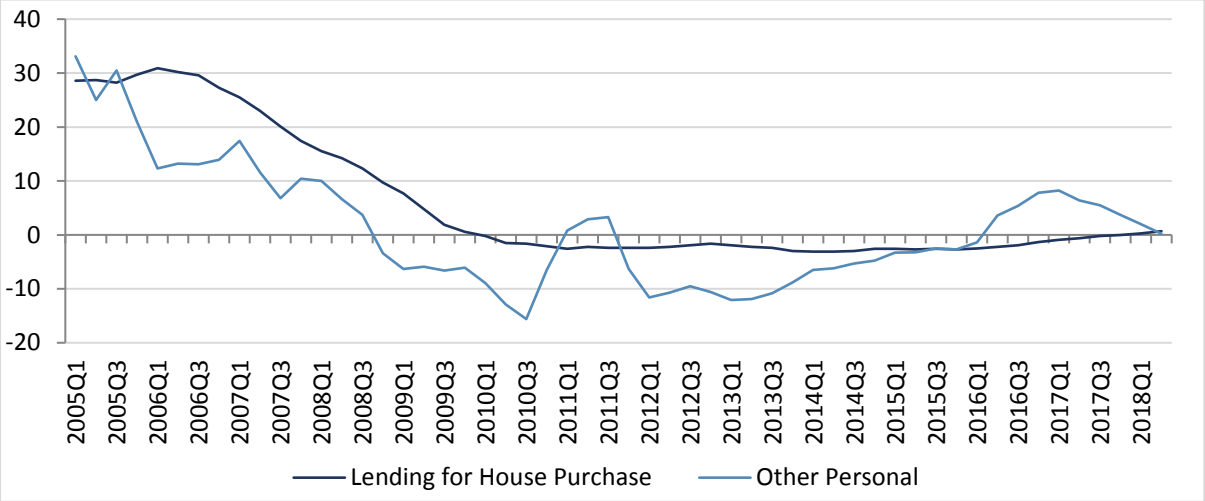


Source: St. Louis Fed. database.

Household credit and mortgage market

In Q1 2018, for the first time since 2009, the stock of outstanding mortgage lending as new lending outstripped repayments. This has continued into Q2 as mortgage lending continued to rise. Figure 17 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.). On an annualised basis, outstanding mortgage lending grew by 0.7 per cent to Q2 2018. Non-mortgage credit also continued to expand in Q2 2018 at an annualised rate of 2.1 per cent. However, this represents a decline in the growth rate when compared with similar rates in 2017.

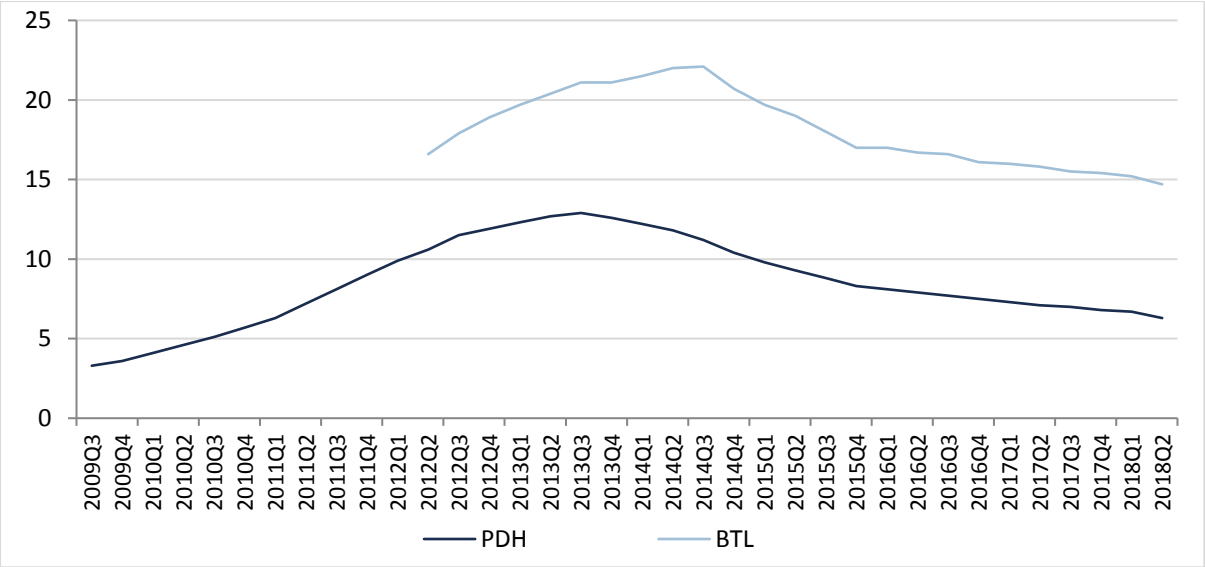
FIGURE 17 GROWTH RATES OF CREDIT TO HOUSEHOLDS (%)



Source: 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.

An important measure of the sustainability of activity in the mortgage market is the payment arrears rate. As of Q2 2018, the share of principal dwelling home loans in arrears stood at 6.3 per cent, down marginally on the previous quarter and down from 7.1 per cent year-on-year. This constitutes a total of 9.7 per cent of the balance of outstanding PDH mortgages. The default rate on buy-to-let (BTL) loans has also reduced but remains at 14.7 per cent of accounts.

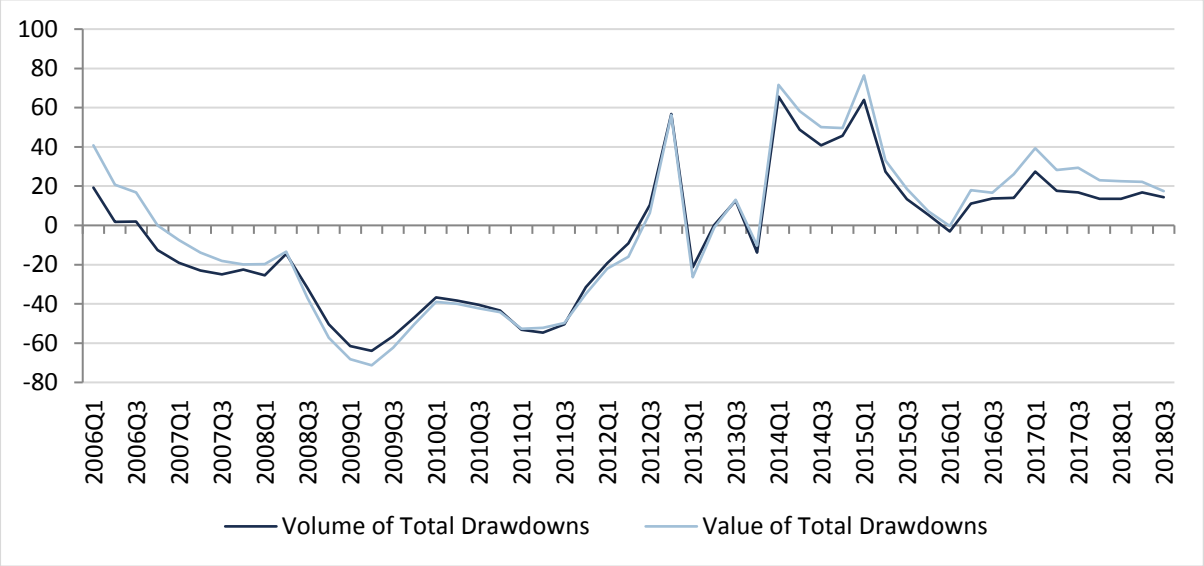
FIGURE 18 IRISH HOUSEHOLD MORTGAGE ACCOUNTS IN ARREARS BY TYPE OF LOAN (%)



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.

In Q3 2018, the volume of new mortgage drawdowns increased by 14.4 per cent year-on-year and the value of mortgages increased by 17.5 per cent year-on-year. This represents a moderate deceleration in the rate of growth of the volume of loans. Annualised growth of close to 20 per cent was very high for any mortgage market, despite the fact that the number of new loans was rising from a low base. The slowdown noted between Q2 and Q3 2018 is to be welcomed if it signals a normalisation of the sector's activity. In terms of the average loan size for mortgages, it was €226,250 in Q3 2018 which is marginally higher than the level in Q2.

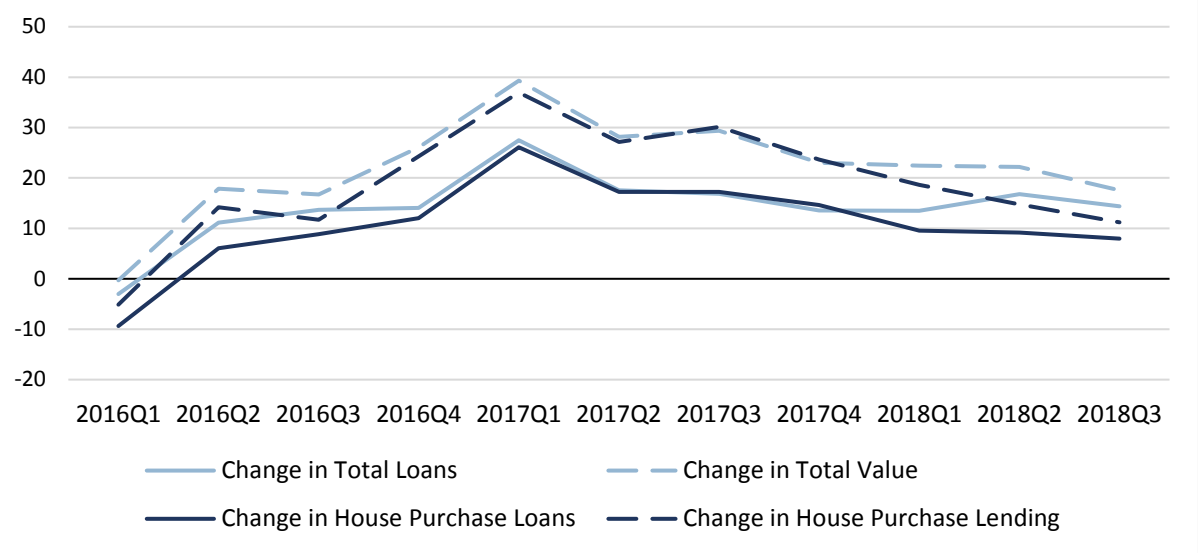
FIGURE 19 YEAR-ON-YEAR GROWTH RATE OF NEW MORTGAGE DRAWDOWNS (%)



Source: Banking and Payments Federation Ireland.

One interesting feature of the mortgage market has been an increase in 'switcher' activity as banks have increasingly vied for increases in market share through refinancing activity. In a sense, as these refinancing loans do not represent new exposures in the market, and often provide borrowers with a lower cost of financing when they refinance, they do not carry the same financial stability risks as new loans. In fact these loans are exempt from compliance with the macroprudential framework if there is no increase in the loan balance. When these are removed from the new lending data, growth rates are lower and are decelerating at a significant rate. For example, in Q3 2018 the growth rate for loans for new house purchases excluding refinancing only stood at 8 per cent, with an 11 per cent annualised growth for the value of lending. This suggests that new mortgage lending for house purchase is softening at a quicker pace than suggested by the aggregate drawdown figures.

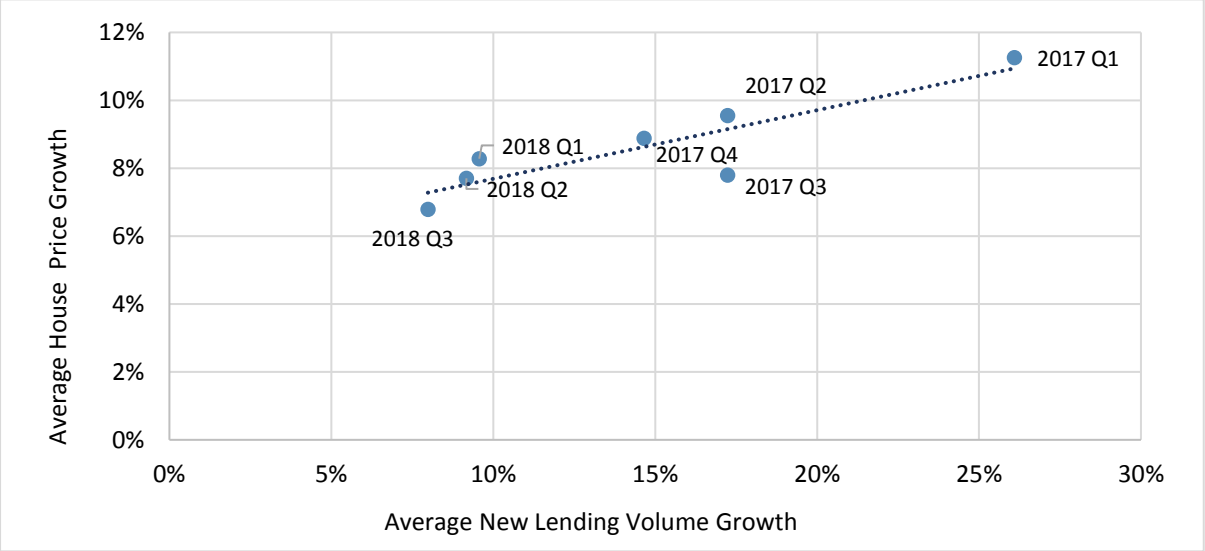
FIGURE 20 COMPARISON OF ANNUALISED GROWTH RATES FOR ALL LOANS VERSUS HOUSE PURCHASE LOANS (%)



Source: Banking and Payments Federation Ireland.

Part of this softening is linked to a slowdown in recent house price growth, which has declined on an annualised basis over recent quarters. This is evident in the scatter plot below which focuses on the narrow window of 2017 and 2018. Looking at this trend, while house prices and new lending growth are positively correlated (depicted in the growth as the upward sloping trend line), the rates of both house price growth and average new lending volume growth have been steadily declining over time, with the lowest points on the charts representing the most recent data.

FIGURE 21 CORRELATION BETWEEN HOUSE PRICE GROWTH AND AVERAGE NEW LENDING VOLUME GROWTH (%)



Source: Banking and Payments Federation Ireland.

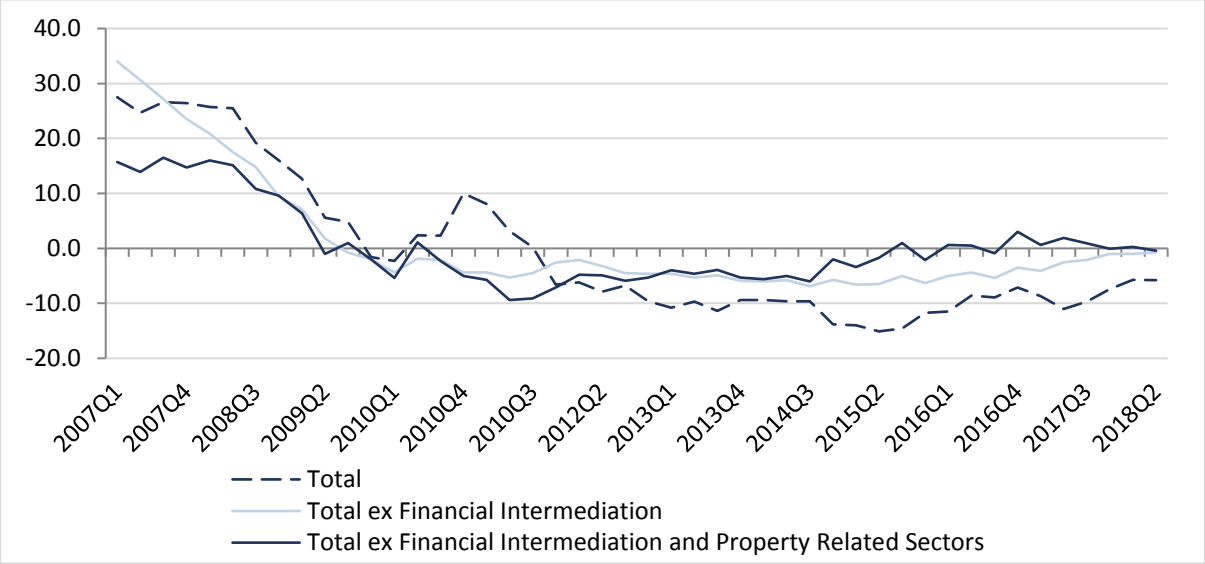
In late November 2018, the Central Bank of Ireland (CBI) released their annual review of the macroprudential rules in the mortgage market.[11] These rules are aimed to boost the resilience of both banks and borrowers to adverse shocks as well as prevent house price-credit spirals from forming like we saw in Ireland between 2003 and 2007. The CBI reaffirmed the current regulations and made no changes to the present framework. At this particular juncture, and given the critical supply shortages in the housing market, it is certainly prudent not to loosen credit conditions and risk any credit-based stimulus to house prices. The importance of these measures cannot be overstated in terms of their ability to provide a safe and sustainable mortgage market over the medium term.

Trends in SME and corporate credit market

Turning to the provision of credit to non-financial corporations, in Q2 2018 the overall stock of credit continued to fall with deleveraging an ongoing phenomenon in the sector. While the overall stock fell by 5.8 per cent on an annualised basis, when property and financial intermediation sectors are excluded the declines were more modest, at -0.7 per cent and -0.4 per cent respectively. These figures highlight that, while considerable deleveraging has occurred following the financial crisis, significant levels of debt remain. This could point towards potential vulnerabilities if the ultra-low interest rate environment were to rapidly unwind.

11 Central Bank of Ireland (2018). Mortgage Measures - *Review of Residential Mortgage Lending Requirements*.

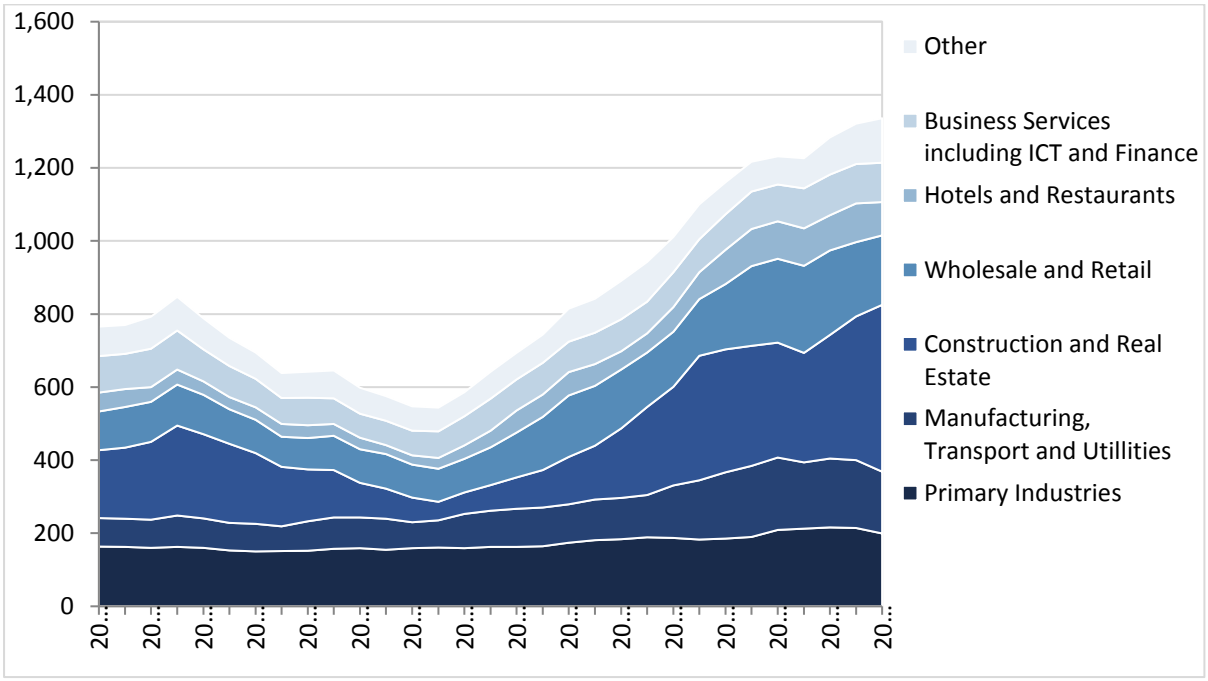
FIGURE 22 GROWTH RATES OF CREDIT TO PRIVATE SECTOR ENTERPRISES (%)



Source: 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.

Often the aggregate figures conceal the difference in financing conditions between Irish SMEs and larger corporates operating in the Irish market. To understand the financing environment for SMEs, we plot the trend in new lending to SMEs on a quarterly rolling average basis. New lending has increased steadily since the middle of 2013 and continues to expand. Relative to the first three quarters of 2017, the level of credit to SMEs has increased for the first three quarters of 2018 by 11 per cent.

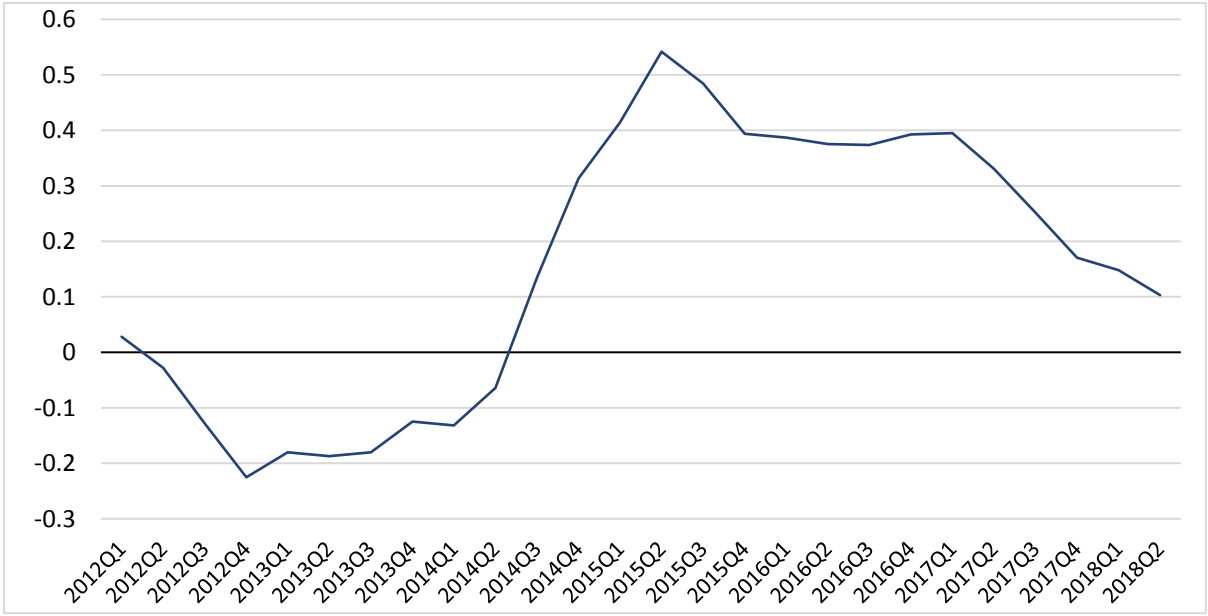
FIGURE 23 QUARTERLY NEW LENDING TO IRISH SMES BY SECTOR (FOUR-QUARTER ROLLING AVERAGE)



Source: Central Bank of Ireland, SME Credit Series, Table A.14.1.

Figure 24 presents the four-quarter rolling average of SME credit growth to the second quarter of 2018. This suggests that the increase in credit has been slowing rapidly as the economy has recovered and the SME sector has returned to more normal operating conditions.

FIGURE 24 TREND GROWTH RATE FOR SME CREDIT (FOUR-QUARTER ROLLING AVERAGE)

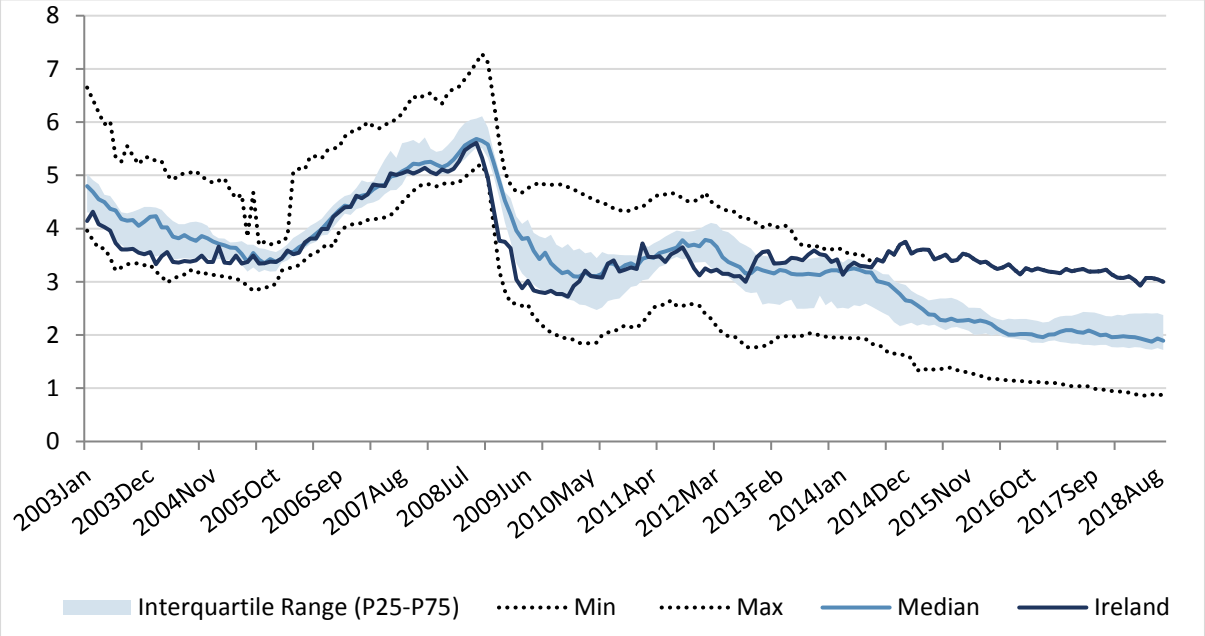


Source: Central Bank of Ireland, SME Credit Series, Table A.14.1.

Interest rates and the cost of finance

The cost of finance in Ireland for both corporate and household credit remains high by European standards. More recently, in line with the rest of Europe, some reductions in lending rates are occurring. The standard variable rate on new mortgage loans in Ireland stood at 3.13 per cent as of Q3 2018; this is down slightly year-on-year from 3.41 in Q3 2017. The market for fixed rates has become more competitive and the average rate on one- to three-year fixed rate products stood at 2.82 per cent in Q3 2018. However, comparing Irish new house purchase loans relative to other Eurozone economies, it can be seen that interest rates on mortgages in Ireland remain the highest of comparator countries (Figure 25).

FIGURE 25 INTEREST RATES ON NEW HOUSE PURCHASE LOANS TO HOUSEHOLDS (%)

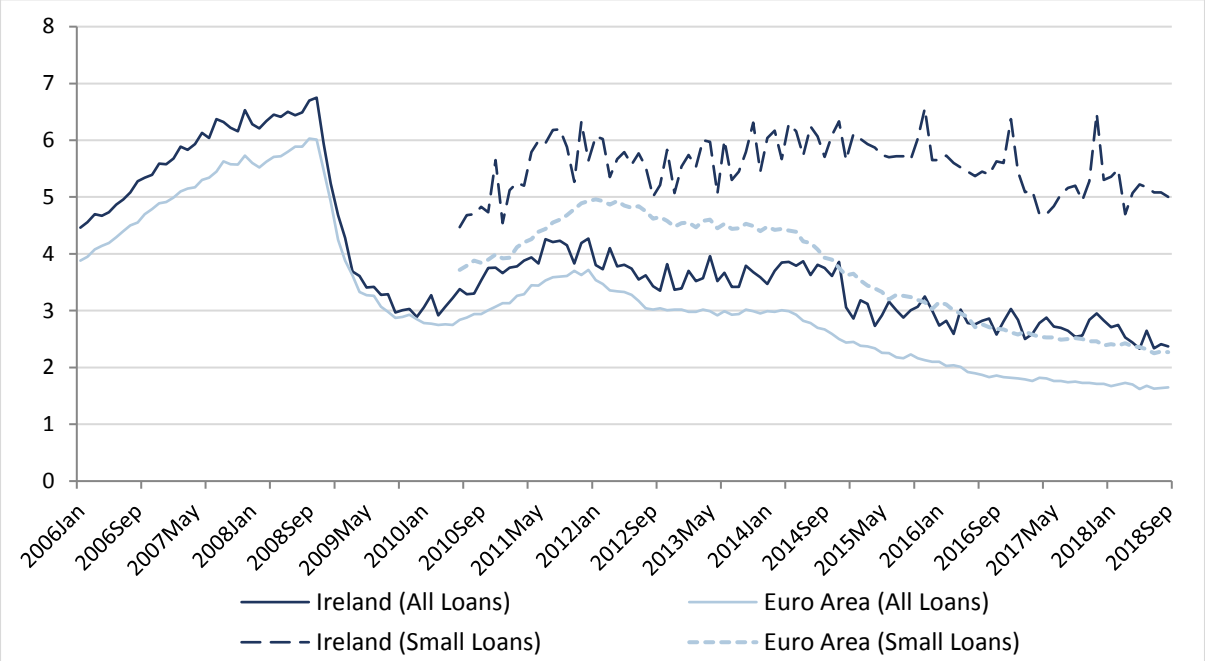


Source: Central Bank of Ireland, SME Credit Series, Table A.14.1.
Notes: Countries included are: AT, BE, EE, ES, FI, FR, IE, IT, LT, NL, PT, SI. These countries are selected due to data availability. Data differ between this chart presented and the text, as the ECB comparison data include restructured mortgages whereas the new business standard variable rate (SVR) is only for new drawdowns.

A similar picture emerges in relation to corporate interest rates. Figure 26 presents the interest rates on new business loans for non-financial corporates in Ireland relative to the average for the Eurozone. Two series are presented: 1) covering all loans and 2) capturing loans of less than €250,000 in value, which is used as a proxy for loans for SMEs. In September 2018, the average rate on new loans for all Irish corporates was 2.37 per cent, down marginally on the previous quarter. The Eurozone average was 1.65 per cent, approximately 70 basis points lower than the Irish rate. For small Irish corporate loans, the interest rate in September 2018 was 5 per cent compared to the Eurozone average of 2.27 per cent, a full 270 basis points higher than the Eurozone figure. Ongoing policy

measures to reduce the cost of financing for Irish SMEs, and to improve competition in the banking and other financing sectors, should continue apace.

FIGURE 26 INTEREST RATES ON NEW CORPORATE LOANS – EUROPEAN COMPARISON (%)



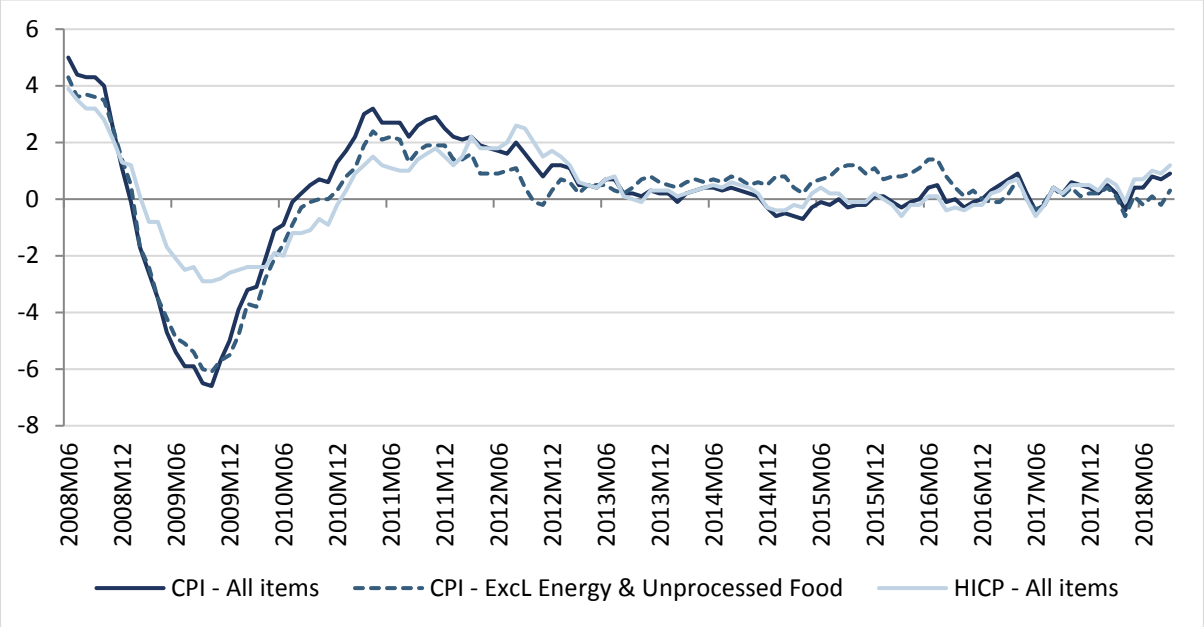
Source: ECB MFI data. Small loans refer to loans less than €250,000.

Inflation outlook

While the early months of 2018 had seen a moderation in inflation, both the overall CPI and the HCPI have begun to rise into the second and third quarters of 2018. Figure 27 presents the inflation rate for these series and the CPI excluding energy and unprocessed foods. While increasing inflationary pressures are evident from the CPI and HCPI, core inflation which excludes energy and unprocessed foods is much weaker and suggests a more muted inflation outlook for the domestic economy.

It is interesting to explore the variation across different groups of products and services. In the year to October 2018, increasing prices were evident in the following areas: housing, water, electricity, gas and other fuels (+5.5 per cent), alcoholic beverages and tobacco (+2.6 per cent), transport (+3.3 per cent), and restaurants and hotels (+2.1 per cent) and education (+1.7 per cent). Other goods in the economy continue to experience declines in price with furnishings, household equipment and routine household maintenance down 4.3 per cent, miscellaneous goods and services down 3.1 per cent, food and non-alcoholic beverages down 2.2 per cent and communications down 1.0 per cent.

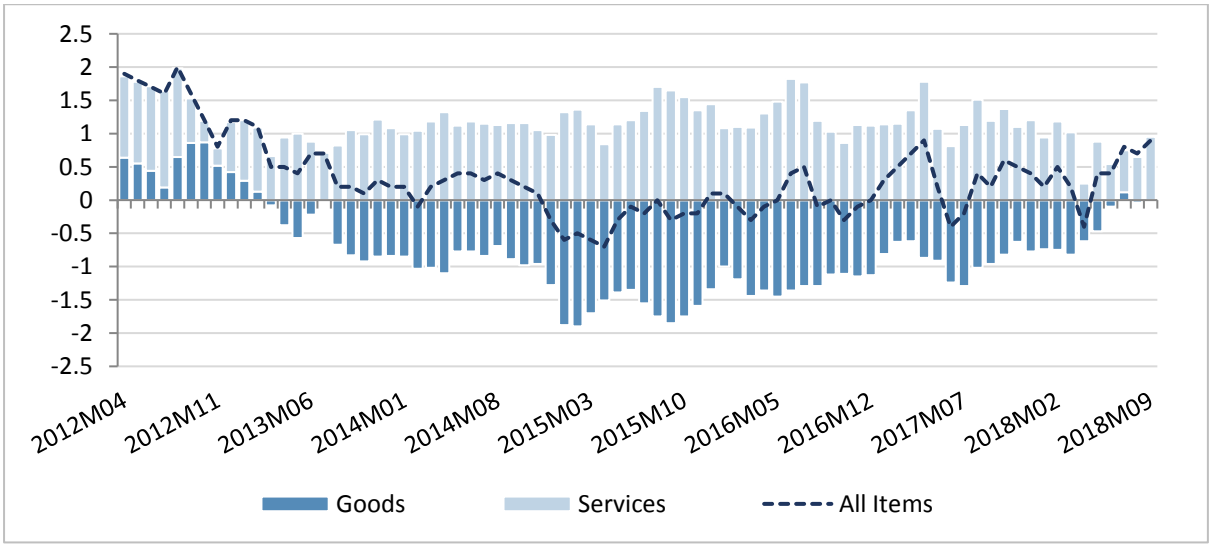
FIGURE 27 ANNUAL GROWTH IN INFLATION (%)



Source: Central Statistics Office.

The difference in price trends between the goods and services sectors is quite apparent. The underlying trends in the CPI (Figure 28) up to October 2018 indicates service prices have been accelerating. It is notable that the persistent decline of goods prices evident from 2013 to Q2 2018 have moderated with goods prices only falling marginally at present.

FIGURE 28 DECOMPOSITION OF ANNUAL (%) CPI GROWTH INTO GOODS AND SERVICES GROWTH

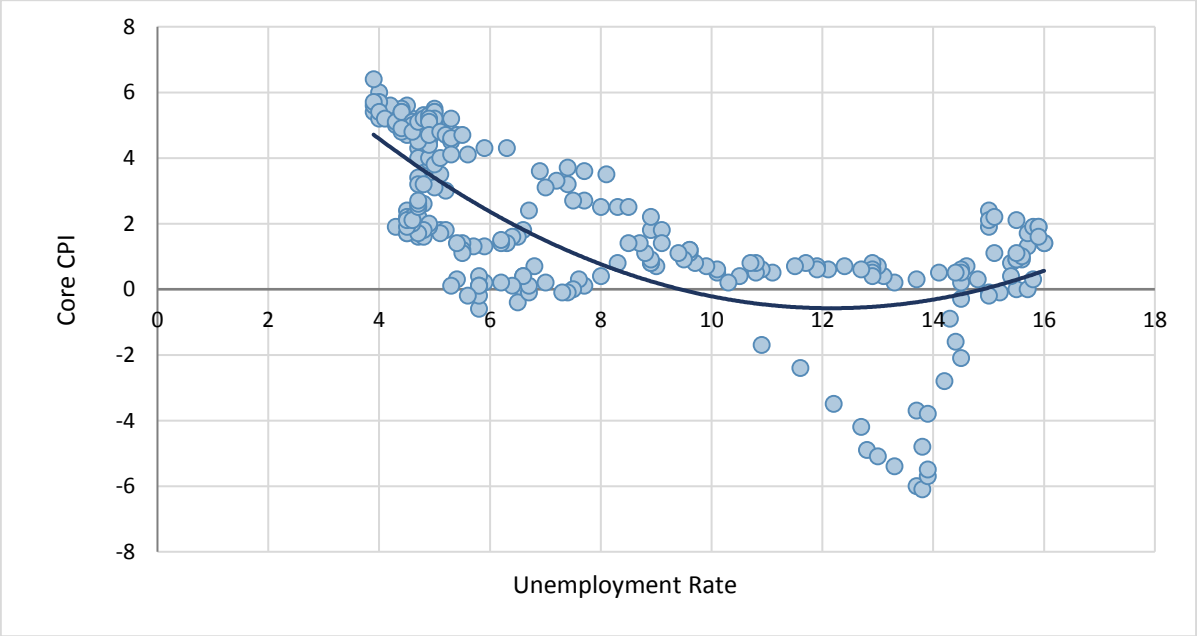


Source: Central Statistics Office.

Given the exceptionally rapid growth in the Irish economy, and the robust improvement in the labour market, inevitably questions arise as to whether the

economy will begin to overheat, leading to upward pressure on prices and wages. In an accompanying note to this *Commentary*, McQuinn (2018) finds that while resources are becoming tighter in Ireland, the open nature of the economy should provide some spare capacity to accommodate further growth. The current lack of pressure on core inflation despite the rise in employment demonstrates the highly non-linear relationship between Irish prices and unemployment that would be expected by traditional relationships such as the NAIRU (Ball and Mankiw, 2002).[12] The exposure of the Irish economy to global prices through the exceptionally high share of traded activity (for both exports and imports) provides for a much more muted reaction of prices to unemployment. However, as Figure 29 displays, periods where the Irish unemployment rate has previously approached 4 per cent have been correlated with rising core inflation. As the economy continues to expand robustly, and if it reaches a point of near full employment, price rises will be much more likely.

FIGURE 29 CORRELATION BETWEEN CORE CPI AND UNEMPLOYMENT RATE (1998 M01-2018 M10)



Source: Central Statistics Office.
Note: The fitted line is a simple quadratic fit function between the two series.

In light of the *Commentary*'s forecast of strong domestic demand and the continued positive developments in the labour market performance, prices are expected to increase over the next two years. Consumer prices are expected to increase moderately by 0.6 per cent in 2018, followed by 1.1 per cent in 2019.

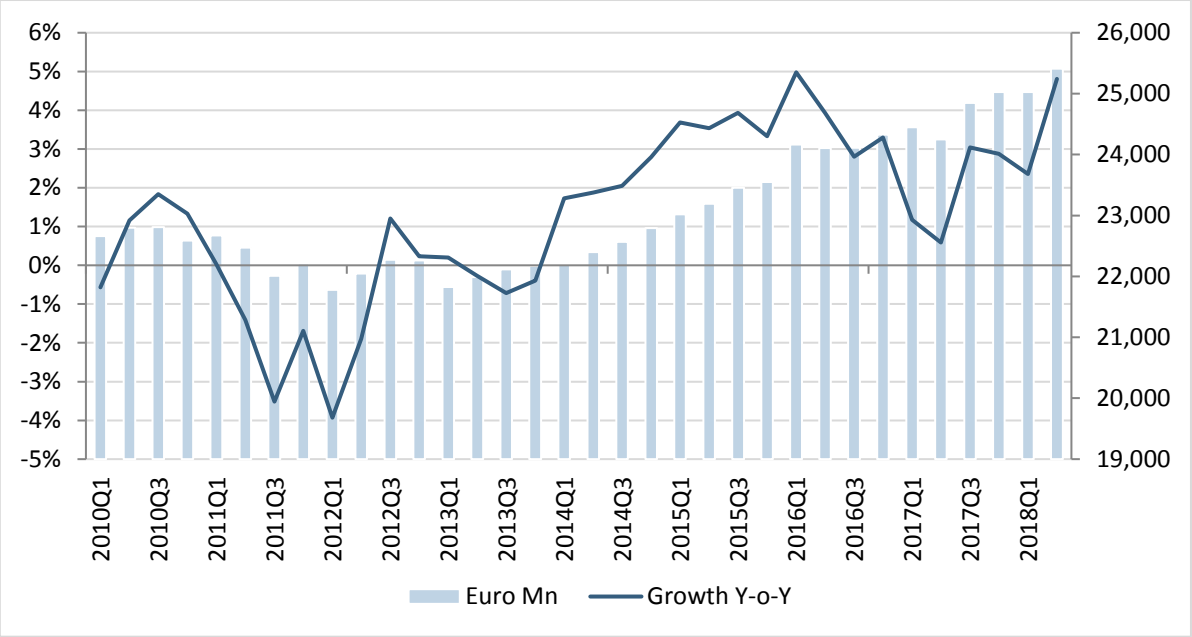
12 Ball, L. and G. Mankiw (2002). 'The NAIRU in Theory and Practice', *Journal of Economic Perspectives*, 16 (4), pp. 115-136.

DEMAND

Household sector consumption

Growth in personal consumption has continued apace in the Irish economy through the first half of 2018. The most up to date Quarterly National Accounts show that, on an annualised basis, personal consumption expenditure increased by 4.8 per cent in Q2 2018. The persistent fall in unemployment, increases in disposable incomes and an improvement in household balance sheets have all contributed to the growth in household spending.

FIGURE 30 QUARTERLY PERSONAL CONSUMPTION ON GOODS AND SERVICES – CONSTANT MARKET PRICES AND SEASONALLY-ADJUSTED



Source: Central Statistics Office.

Retail sales can be used as a leading indicator of consumption. These indicators provide a snapshot of what goods and services households are purchasing and what sectors are driving consumption growth in the country. Table 3 presents retail sales for selected items in terms of the annual growth rate in the volume of sales in Q3 2018. Overall retail business is up 4.6 per cent year-on-year with a positive growth rate in each of the retail business sectors. When the motor trade is excluded, sales are up by 4.3 per cent. Furniture and lighting sales continue to grow rapidly (up 7.7 per cent in Q3) due to the strong growth in the Irish housing market, while department store sales also performed well over this period (up 6.2 per cent in Q3).

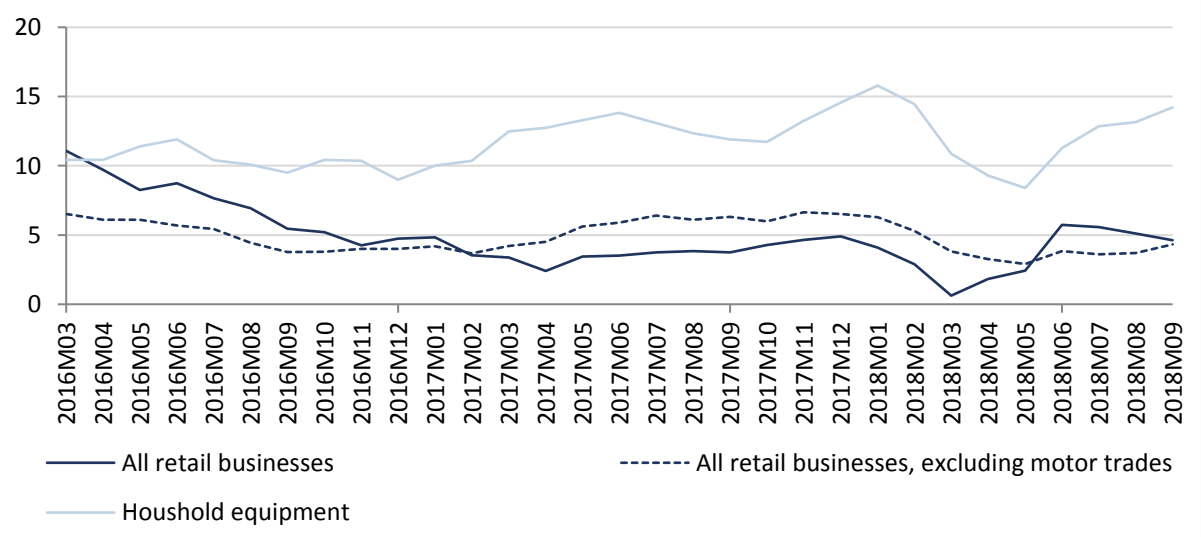
TABLE 3 GROWTH IN SELECT RETAIL SALES (VOLUME) ITEMS (Q3 2018)

Retail Business - NACE REV 2	Volume of Sales
	Annual % change
Motor trades	5.1
Non-specialised stores (excluding department stores)	4.9
Department stores	6.2
Clothing, footwear and textiles	1.9
Furniture and lighting	7.7
All retail businesses	4.6
All retail businesses, excluding motor trades	4.3

Source: Central Statistics Office.

The overall trends in retail sales are displayed in Figure 31. This chart presents a three-month rolling average for total retail sales, retail sales excluding the motor trade, and for household equipment. Following strong growth in Q2 of this year, overall retail sales decelerated month-on-month in Q3. However, growth rates remain strongly positive and as of September 2018 the three-month rolling growth rate was 4.6 per cent. As has been the case for the last two years, growth of housing equipment sales[13] continues to outperform other retail sales (14.2 per cent in September 2018). As the economy continues to expand and household income continues to increase, retail sales are expected to continue growing into 2019.

FIGURE 31 AVERAGE GROWTH (%) IN RETAIL SALES INDEX VOLUME ADJUSTED (BASE 2005=100), THREE-MONTH ROLLING AVERAGE

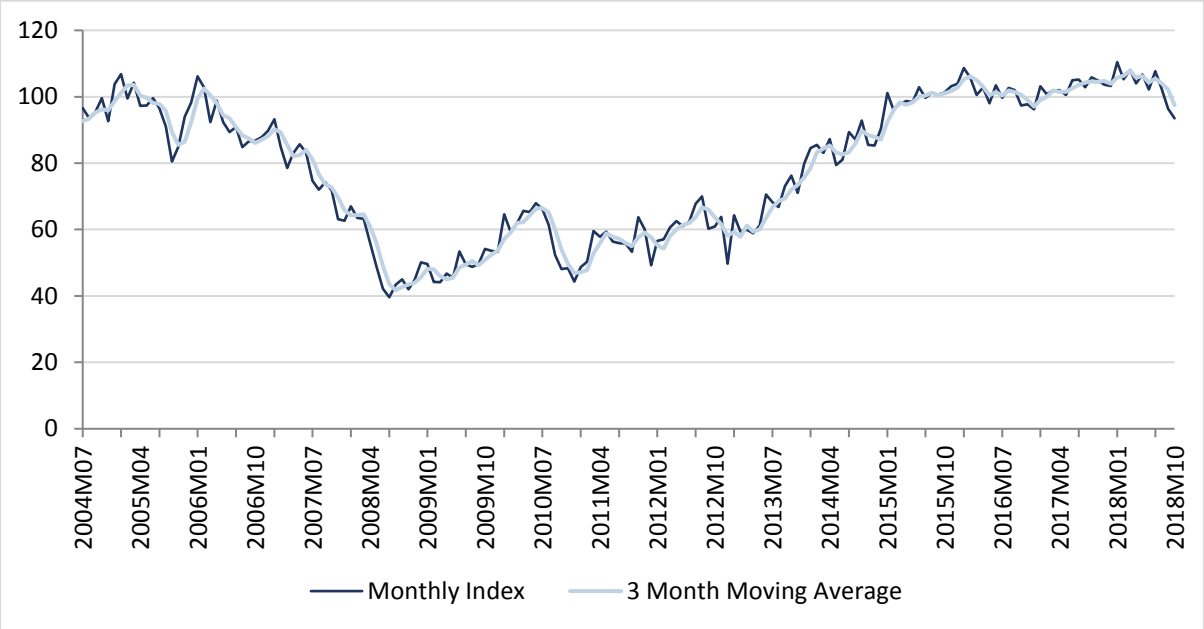


Source: Central Statistics Office.

[13] This includes furniture and lighting; hardware, paints and glass and electrical goods.

Figure 32 presents the ESRI/KBC Consumer Sentiment Index (CSI) which tracks the monthly views of households on their current and future economic perspectives. Following three consecutive months in which the CSI fell, the Index in October was at 93.5 points, which is the lowest level since December 2014. One of the main determinants of this fall has been the negative outlook of consumers on the macroeconomy. Given that this has been a period marked by increasing uncertainty around the outcome of Brexit and escalations of international trade wars, it is unsurprising that consumers' outlook has been impacted adversely.

FIGURE 32 ESRI/KBC CONSUMER SENTIMENT INDICATORS



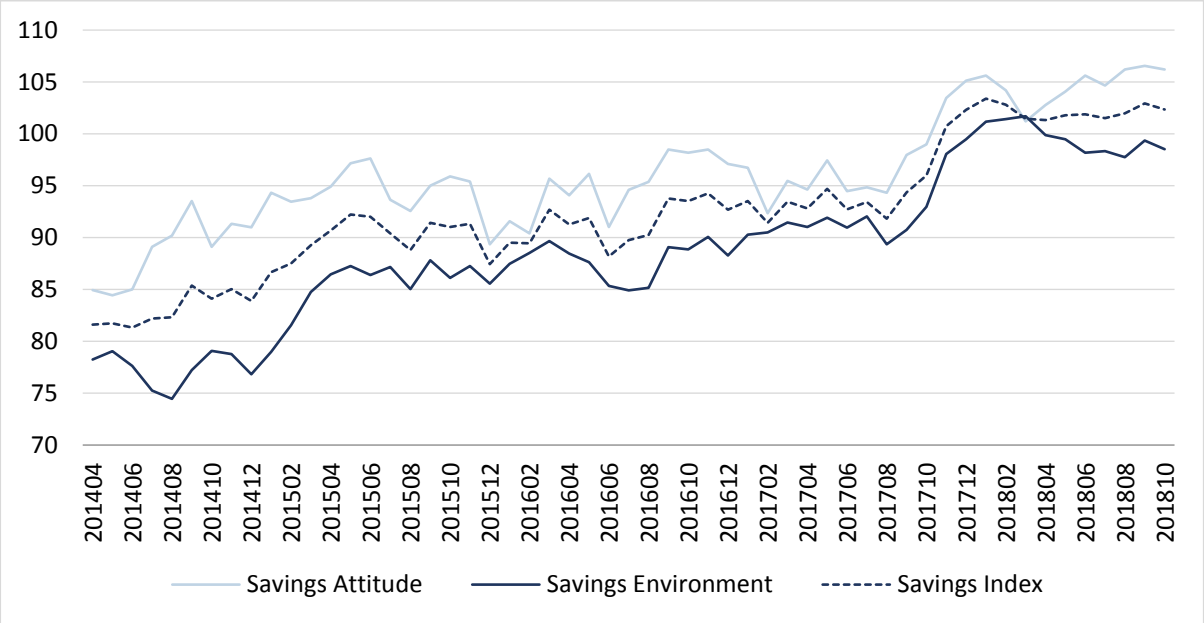
Source: ESRI/KBC Consumer Sentiment Index.

In addition to understanding trends in consumer sentiment, further insight into Irish households' appetite for spending and views on economic activity can be drawn from their savings behaviour. Figure 33 displays the three-month moving average of the ESRI/Bank of Ireland Savings Index, which measures Irish peoples' sentiment towards savings. Overall the Index has been relatively stable in 2018 with the three-month average dipping slightly in October 2018 to 102.4 points from 103.4 points in January.

The two sub-indexes that compose the Savings Index are the Savings Attitudes and the Savings Environment. The stability in the overall index hides the fact that both these sub-indexes have been moving in opposite directions for much of the

year. The three-month rolling average of the Savings Attitudes[14] Index rose to a new high of 106.6 points in September 2018 before decreasing again slightly to 106.2 in October. This increase was mainly driven by a heightened satisfaction with the amount people were saving. The Savings Environment Index[15] on the other hand has been decreasing since the start of Q2 2018 as views towards both the present and future savings landscape have generally been deteriorating.

FIGURE 33 SAVINGS INDEX AND SUB-INDEXES, THREE-MONTH ROLLING AVERAGE



Source: ESRI/Bank of Ireland Savings Index.

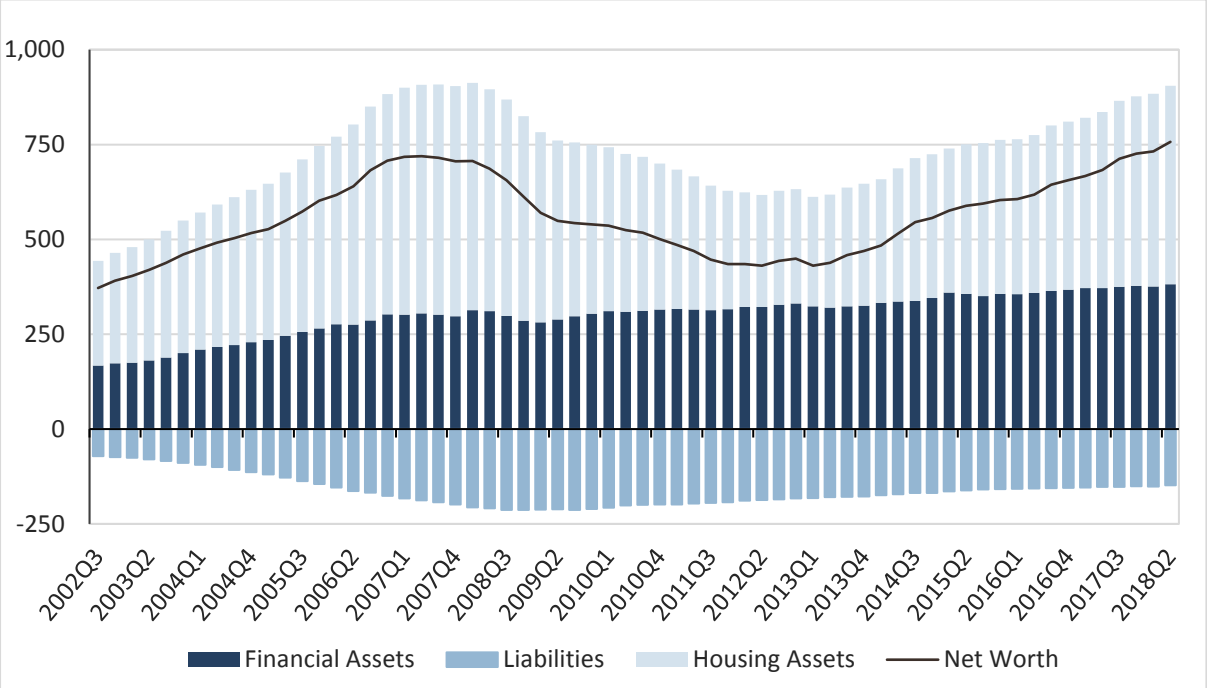
The overall position of Irish households' net worth, which is the stock of financial and housing assets minus the stock of liabilities, is presented in Figure 34. Irish household net worth grew by 10.8 per cent on an annual basis in Q2 2018. This increase was primarily driven by increases in housing assets which have grown by 12.7 per cent year-on-year. Over the same period loan repayments have reduced the stock of outstanding liabilities by 3.1 per cent and financial assets have increased by 2.7 per cent, raising the total value of domestic balance sheets. Household net worth has been rising every quarter since Q1 2013 and now stands at its highest ever level of €757 billion. This marks a considerable turnaround for the country, given the extent to which household net worth fell following the financial crisis. From Q2 2007 to Q1 2013 net worth declined by over €289 billion

14 The Savings Attitude Index is built on two questions which ask respondents about their saving behaviour and how they feel about the amount they save.

15 The Savings Environment Index is built on two questions which ask whether or not respondents believe that the current period is a good time to save and whether or not they believe that in six months' time it will be a good time to save.

or 40 per cent. The primary driver of the growth in household net worth since then has been the rapid recovery of housing assets. Though they are still off peak levels, housing assets have risen by over 80 per cent since the financial crash.

FIGURE 34 IRISH HOUSEHOLD NET WORTH (€ BILLION)



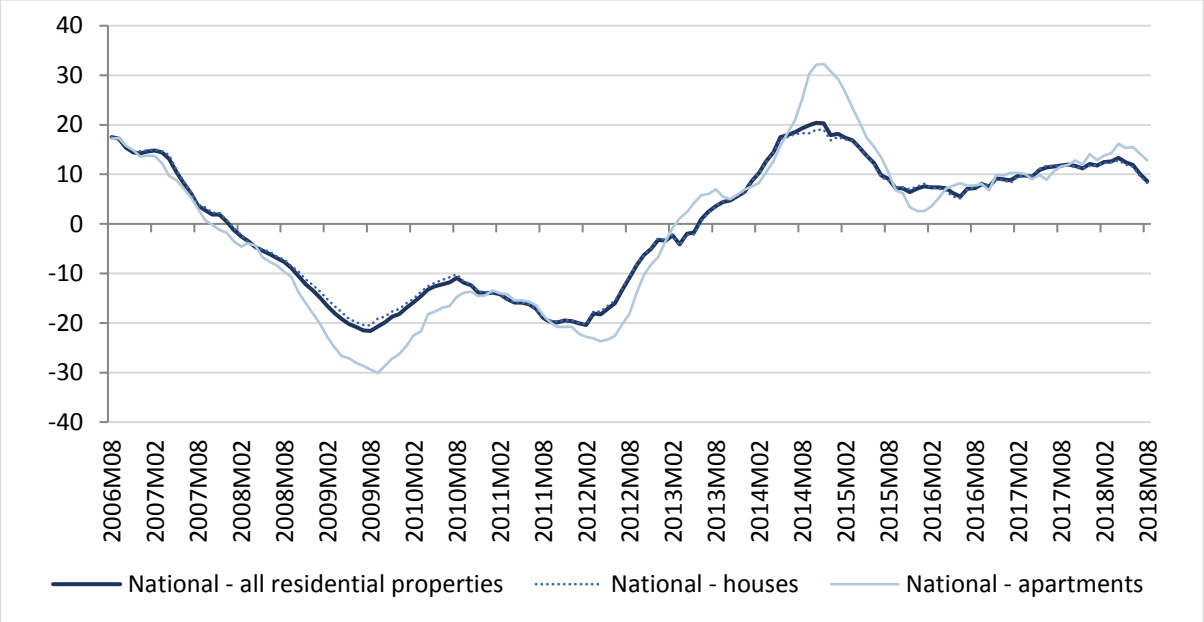
Source: Central Bank of Ireland, Quarterly Financial Accounts.

Looking forward, household consumption is set to continue benefitting from improving labour market conditions and rising incomes. Providing consumer sentiment doesn't continue to deteriorate due to international instability, spending should continue to grow. We expect consumption expenditure to grow by 2.6 per cent this year and at a slightly slower pace of 2.3 per cent in 2019.

Property market developments

Though property price levels continue to increase on an annual basis, the rate of price growth has started to slow down considerably in the second half of 2018. Figure 35 plots the year-on-year changes in residential property prices.

FIGURE 35 ANNUAL RESIDENTIAL PROPERTY PRICE INCREASES (%)



Source: Central Statistics Office.

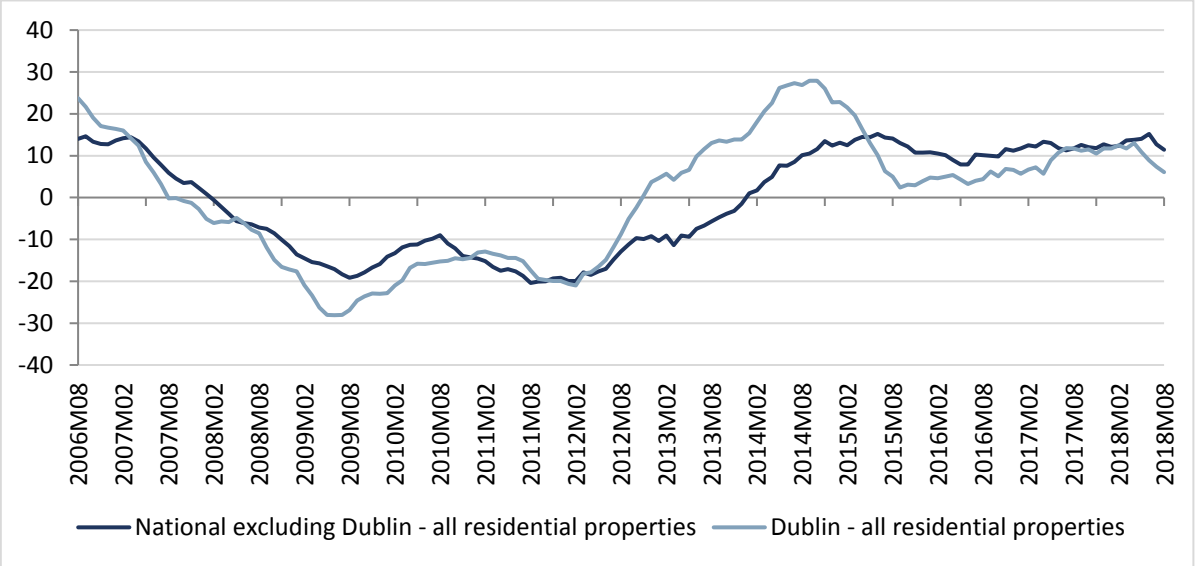
From May 2018 onwards there has been a deceleration in the year-on-year growth rate in overall residential property prices. The annual growth rate of 8.6 per cent in August 2018 marks the first month since April 2017 that the growth rate of residential properties has not been in double figures. This slowdown in price growth comes on the back of a substantial increase in the housing supply over the past year. Figures released by the CSO show there has been an increase of over 23 per cent in the number of new dwelling completions in the state between Q3 2017 and Q3 2018. Despite this, property price levels are still climbing significantly year-on-year and are now just 18.6 per cent below their peak level in May 2007.

Taking a closer look at the different types of dwelling, there is a divergence emerging between the growth rates of house and apartment prices. Growth rates for house prices have decelerated at a greater rate than apartment prices in Q3 2018. In August 2018, national house price growth was at 8.3 per cent, relative to last year, while apartment price growth was at 12.8 per cent.

Property price developments for Dublin and the rest of Ireland are presented in Figure 36. Following a sustained period of deceleration of property price growth in Dublin since May 2018, the rest of the country has started to mirror the slowdown in the capital. With consecutive falls in property price growth in July and August, annual growth outside of Dublin fell to 11.4 per cent in August. This is down from a three-year high of 15.2 per cent in June. However, this rate of price growth remains significantly greater than that in Dublin. As of August 2018,

property prices in Dublin were growing year-on-year at 6.1 per cent. This is less than half the rate they were growing in April 2018 (13 per cent). The increased housing supply in Q3 of this year has been largely focused in the Dublin area with 40 per cent of new housing completions being located in the capital. This increase in supply along with the impact of the macroprudential regulations are likely the main reason why the decline in property price growth has been steeper in Dublin compared with the rest of the country.

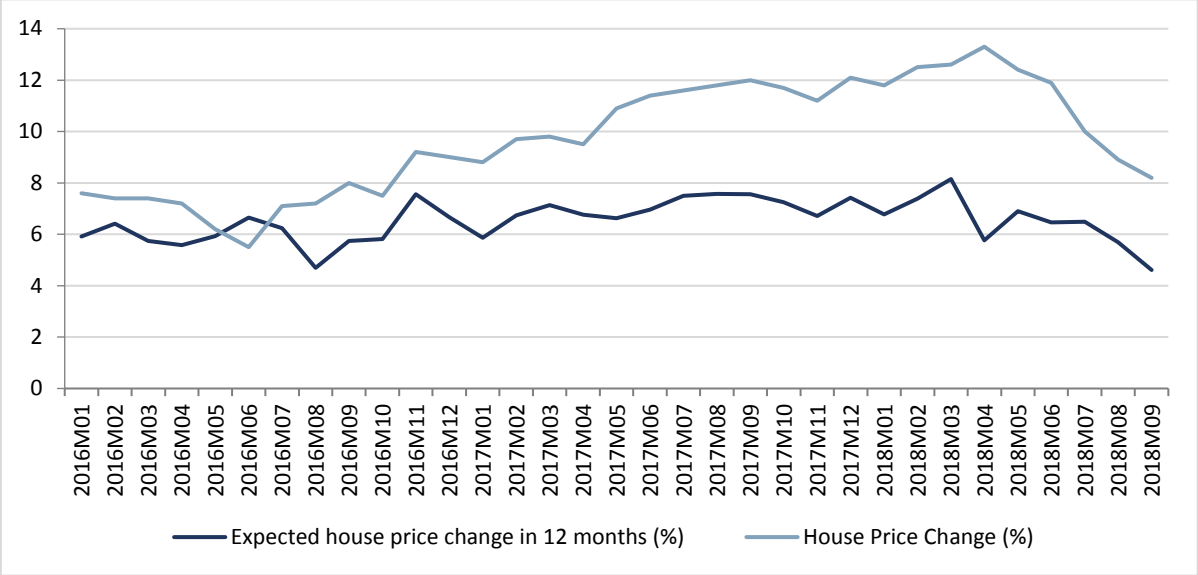
FIGURE 36 RESIDENTIAL PROPERTY PRICE GROWTH (%) BY REGION



Source: Central Statistics Office.

Figure 37 presents the relationship between house price growth and house price expectations since the beginning of 2016. House price expectations are collected from the ESRI House Price Index which, amongst other questions, asks individuals about their outlook for house prices 12 months from now. House prices are published by the CSO with a two-month lag. From October 2016 onwards there is a clear positive correlation between the change in house price expectations and the movement of actual house prices. This relationship is most evident from March 2018 onwards, where a substantial fall in house price growth coincides with a substantial fall in annual house price expectations.

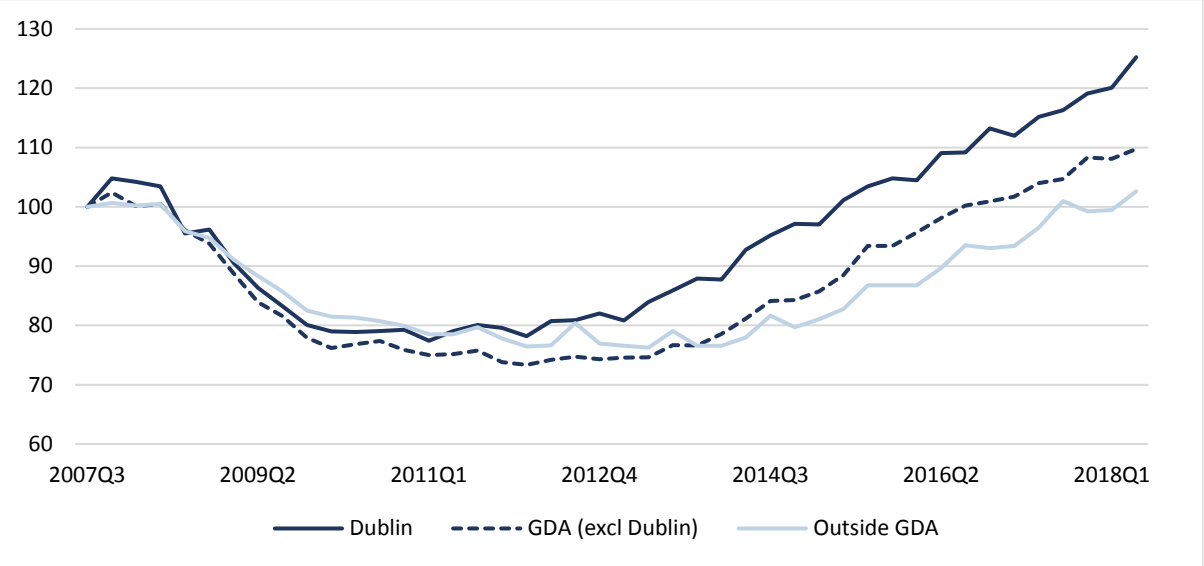
FIGURE 37 RESIDENTIAL PROPERTY PRICE GROWTH (%) AND CONSUMER HOUSE PRICE GROWTH EXPECTATIONS (%)



Source: Central Statistics Office and ESRI survey data.

National level rents increased by 7.6 per cent year-on-year in Q2 2018. This is the twenty-fourth consecutive quarter that the annual rent level in the country has increased. Upward pressure on rents is likely to continue as the level of housing supply fails to meet growing structural demand going forward. The ESRI/RTB Rental Index also produces indicators at a regional level, namely for Dublin, the Greater Dublin Area (GDA) and outside of the GDA. These indexes are presented in Figure 38. Rent levels across all three regions increased in Q2 2018, with Dublin in particular seeing a sharp spike over this period of 4.3 per cent. As rents in Dublin increase, rents in the GDA are also set to increase as people are priced out of the Dublin market and forced to move outside of the capital. Rent levels outside of the GDA are also increasing and have surpassed the previous high set in Q3 2007.

FIGURE 38 RTB RENT INDEX – DUBLIN, GDA (EXCL. DUBLIN) AND OUTSIDE GDA, Q3 2007=100



Source: Residential Tenancies Board (RTB).

Rent levels in both Dublin and the GDA (excluding Dublin) have clearly grown at a faster pace than the rest of the country since 2013. This could reflect the faster pace of economic growth in the capital. Year-on-year, rents increased by 7.8 per cent in Dublin and 6.4 per cent in the GDA (excluding Dublin) in Q1 2018.

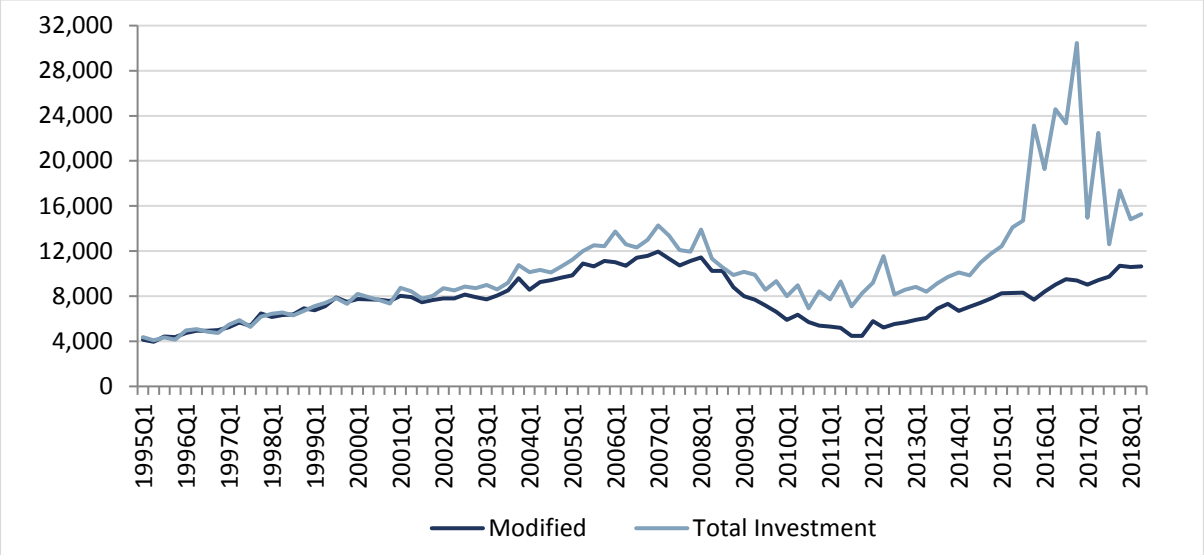
More generally, as the macroprudential regulations are likely to impact on the demand for homeownership in the capital, this will likely result in additional pressures in the rental market.

SUPPLY

Investment

Despite the highly volatile nature of overall investment in Ireland, underlying modified investment (which excludes transactions for aircraft leasing and research and development related intellectual property intangibles), is growing strongly. Total investment has fallen since 2016 as the exceptional increase in the importation of R&D related intellectual capital assets has declined. Figure 39 presents the trends in total and modified investment.

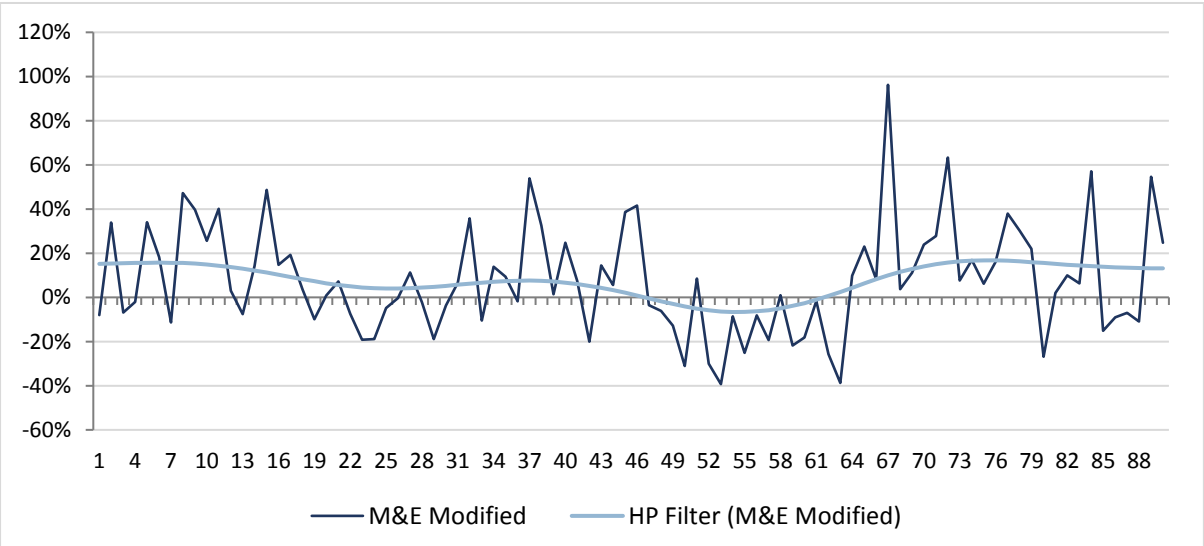
FIGURE 39 COMPONENTS OF INVESTMENT AS A PROPORTION OF TOTAL (€ MILLION)



Source: Central Statistics Office, Quarterly National Accounts Data.

To better understand the investment in capital across the broader economy, it is worthwhile to focus on the trend in machinery and equipment investment and investment in the construction sector. First, Figure 40 presents the annualised quarterly growth rate in investment for modified machinery and equipment. This is an important series as it indicates the real capital assets that firms are accumulating. While investment in these assets is very volatile, it can be seen that the underlying trend growth is still strong, despite some reduction in 2017 and 2018.

FIGURE 40 YEAR-ON-YEAR GROWTH RATE IN MODIFIED M&E INVESTMENT AND UNDERLYING TREND



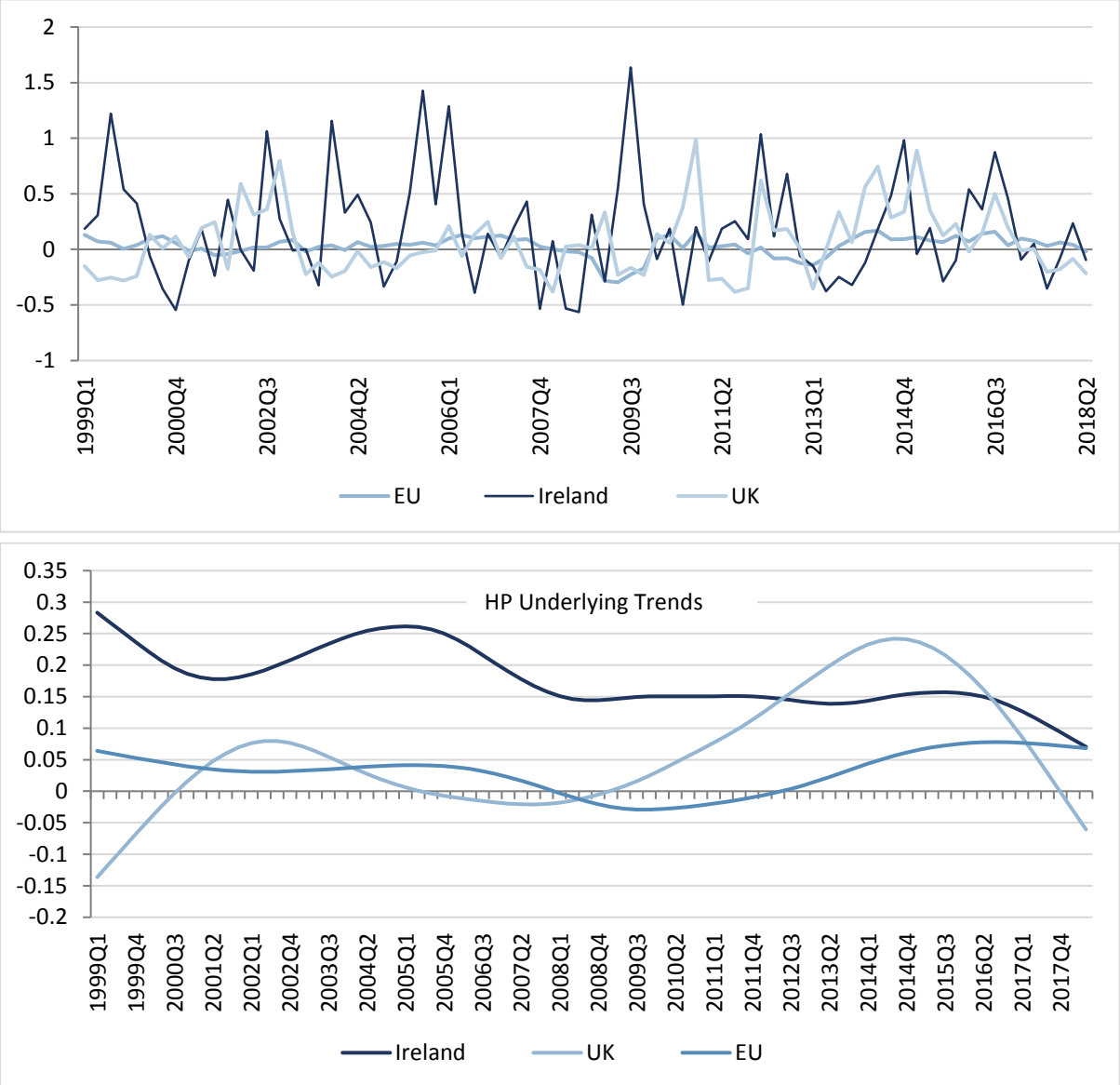
Sources: Central Statistics Office, Quarterly National Accounts Data.
Note: Trend is calculated using a simple univariate Hodrick Prescott Filter with lambda set at 1600.

For many companies, especially those in domestic non-traded sectors (distribution, agriculture, other business services and construction) transport equipment is also likely to be a large component of investment activity. Indeed, Gargan et al. (2018)[16] note that a higher share of SMEs invest in transport equipment relative to other fixed assets. To focus more specifically on investments in these type of assets, we present the growth rate in transport assets for Ireland. These data are presented by Eurostat for other European countries, which also allows us to benchmark Ireland's activity internationally.

Figure 41 presents the annualised quarterly growth rate in transport equipment as well as the underlying trend in the data extracted using a univariate Hodrick Prescott filter. Data are presented for Ireland, the EU, and the UK. Focusing on the trend growth rate it is notable that in all three jurisdictions, there has been a recent decline in investment in transport assets. Indeed the reduction observed in the UK is probably influenced by the Brexit referendum and is likely due to increased business uncertainties in the UK market. Likewise, the decline in the trend is noteworthy in Ireland. This may be indicative of heightened uncertainties around the trading environment given Brexit and other developments and is suggestive of a more muted increase in domestic non-construction capital formation.

16 Gargan, E., M. Lawless, M. Martinez-Cillero and C. O'Toole, 2018. 'Exploring SME investment patterns in Ireland: New survey evidence', *Quarterly Economic Commentary* Autumn 2018, The Economic and Social Research Institute.

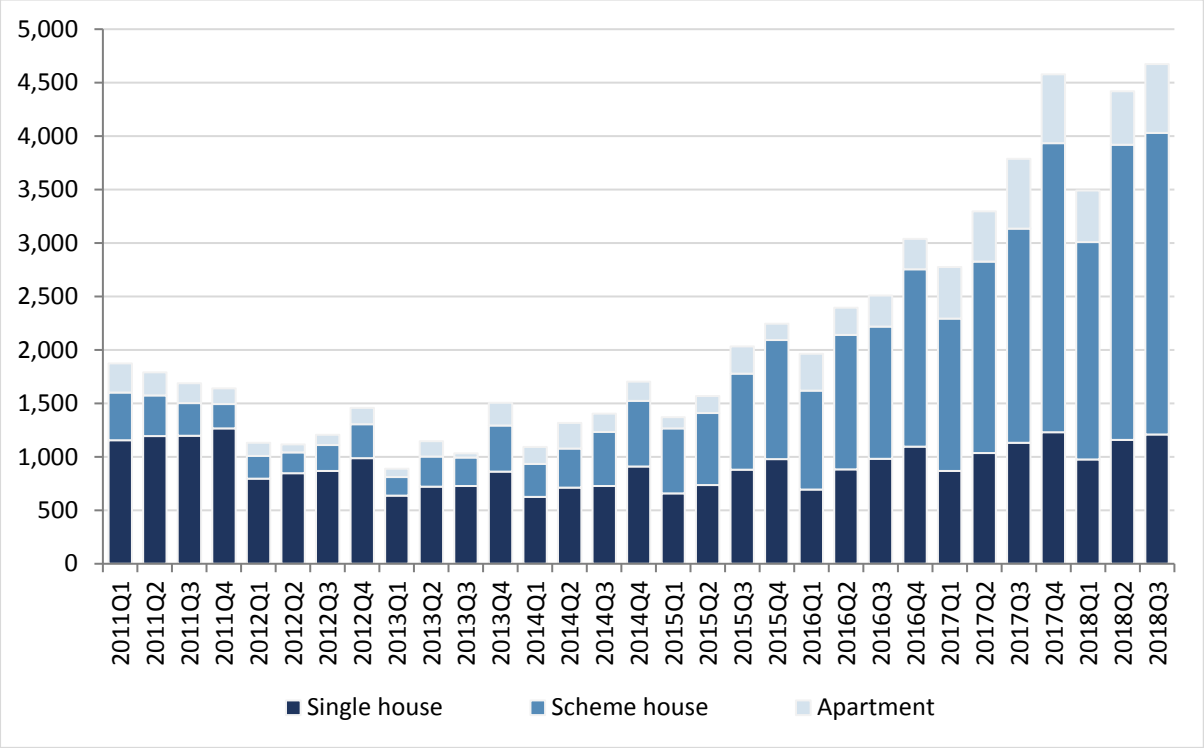
FIGURE 41 ANNUALISED QUARTERLY GROWTH IN TRANSPORT EQUIPMENT INVESTMENT AND UNDERLYING TRENDS



Source: Eurostat and QEC calculations.

Turning now to investment in construction, we expect this to continue increasing significantly in 2018 as output of residential dwellings, in particular, rises sharply. Data for housing completions for the period Q1 2011 to Q3 2018 are presented Figure 42. The rising trend, evident for the past number of quarters, has continued into the present period. Of note is that most of the increase in the number of units is due to multi-dwelling housing schemes which now account for approximately 60 per cent of new completions.

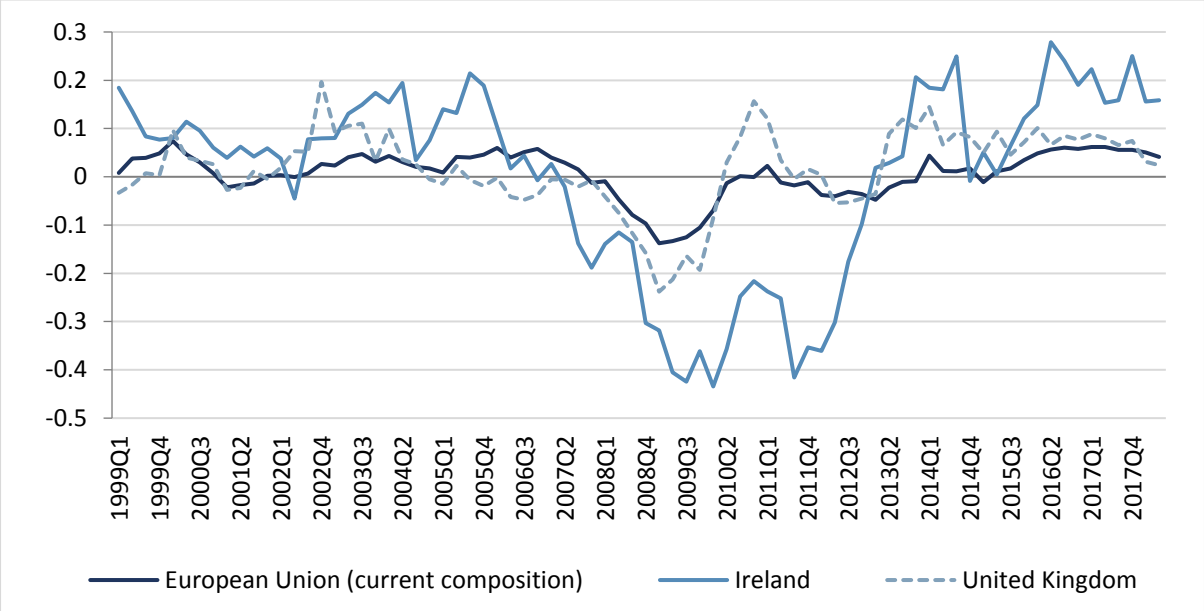
FIGURE 42 ANNUAL HOUSING COMPLETIONS (2017-2018 FORECASTS) – TO 2016 ACTUAL



Source: Central Statistics Office.

To contextualise the rapid investment in construction in a broader European context, Figure 43 presents the annualised trend in quarterly Gross Fixed Capital Formation in dwellings in Ireland relative to the EU average and the UK. The rapid growth in Ireland is nearly double the rate in the two other jurisdictions. The trend in both the UK and the EU has been falling somewhat in the most recent quarters, which is opposite to the Irish data. While McQuinn (2018), in a Research Note accompanying this *Commentary* points to the fact that Ireland's economy has capacity to deal with additional construction activity, the rapid growth in this activity must be monitored closely to ensure imbalances in production or credit markets do not arise. Over time, it would be welcome if housing policy could remove a proportion of the pro-cyclical volatility in construction investment in Ireland which should help mitigate macroeconomic or financial stability risks.

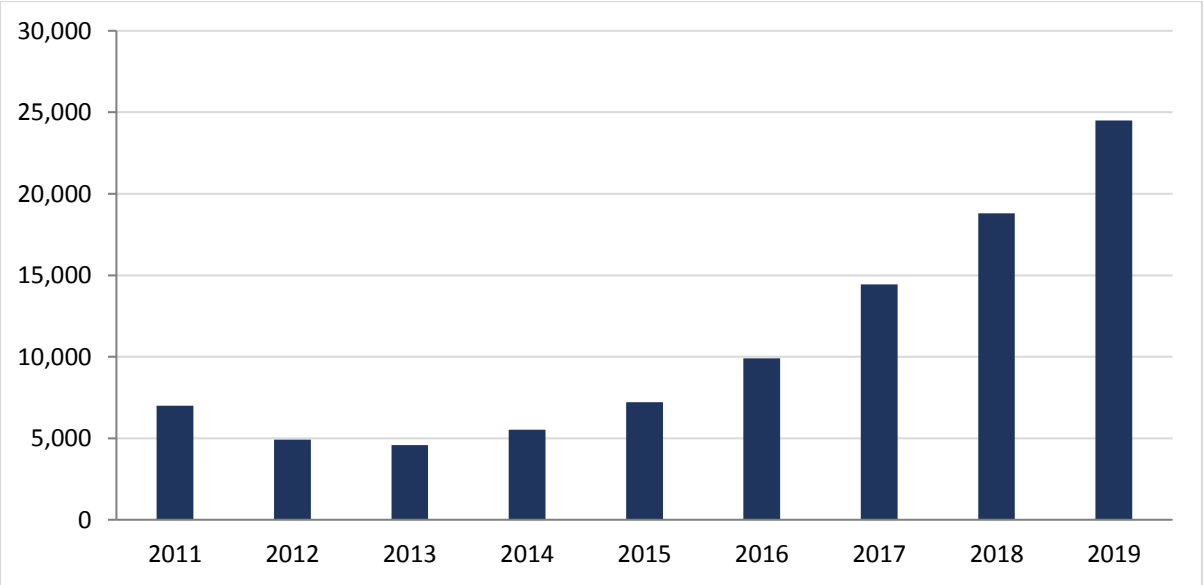
FIGURE 43 GROWTH IN DWELLINGS INVESTMENT – IRELAND IN A EUROPEAN CONTEXT



Source: Eurostat.

In terms of our outlook for construction investment, we expect that building investment will continue to increase particularly as the rate of housing construction expands. Using the increase in housing completions for the first two quarters of 2018 relative to the first two quarters of 2017, we forecast 18,500 units in 2018 increasing to 23,400 units in 2019 (Figure 44).

FIGURE 44 ANNUAL HOUSING COMPLETIONS (2018-2019 FORECASTS) – TO 2017 ACTUAL



Source: Central Statistics Office and QEC Forecasts.

Consequently, despite the international uncertainties, we maintain an optimistic position for overall investment in 2018 and 2019, driven in the main by the construction sector. In particular, we expect annual average growth in investment of 6.3 per cent in 2018 and 9.8 per cent in 2019.

LABOUR MARKET

The Irish labour market continues to perform strongly in Q3 2018, with employment levels reaching record highs and earnings experiencing growth. While these developments may give rise to concerns about overheating of the economy, inflation remains low and the overall growth in wages has been moderate. There remains a sizeable gap in unemployment between individuals with different levels of education, with those who have lower levels of education also having higher rates of unemployment. This suggests that there is some room to expand the labour force further over the medium term.

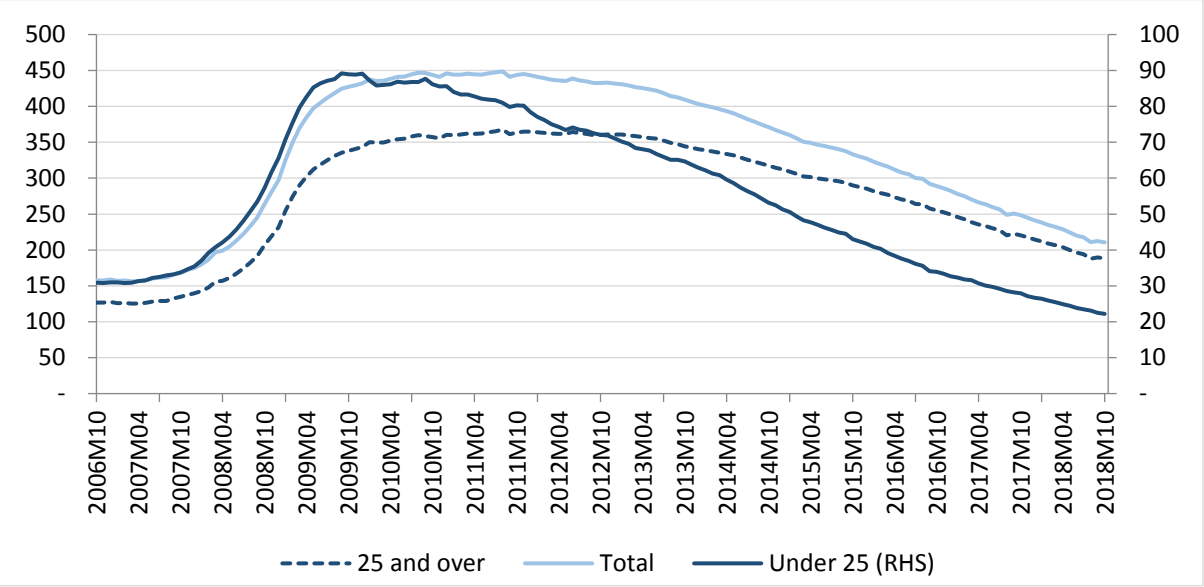
Unemployment

While the Live Register is not a precise measure of unemployment,[17] as it includes part-time and some seasonal and casual workers, it is one of the most up-to-date and detailed labour market measures. The most recent release of Live Register data shows that unemployment has continued to fall in Q3 2018.

Since January of this year, the seasonally-adjusted Live Register recorded a decrease of 27,400 (-11.51 per cent) in October 2018, resulting in a seasonally-adjusted total of 210,700 people on the Register. Between January and October of 2018, the total number of people under the age of 25 on the Live Register declined by 4,200 individuals (-15.9 per cent). The same period last year saw a 4,400 (-13.6 per cent) decline in persons under 25 on the Live Register. The number of people above 25 years on the Live Register in October 2018 was 188,500, which was down 11 per cent on the level in January 2018.

[17] The Live Register provides a monthly series of the numbers of people registered for Jobseekers Benefit, Jobseekers Allowance or other statutory entitlements at the Irish Department of Social Protection.

FIGURE 45 NUMBERS ON THE LIVE REGISTER ('000) BY AGE: OCTOBER 2006 TO OCTOBER 2018



Source: Central Statistics Office.

Since 2012[18] the Live Register has published detailed data on the duration of the registrations, which can be used has a proxy for short- and long-term unemployment. Long-term unemployment is defined as being out of work for a period of greater than 12 months and its negative consequences for individuals and society have been well documented.[19] The longer a person is unemployed, the more difficult re-entry into employment is likely to be. Factors such as deskilling, hysteresis and apprehension from employers about hiring someone who has been out of work for a sustained period of time are all unique obstacles for those experiencing long-term unemployment.

In October 2015, 150,000 people were classified as long-term unemployed which represented 46.6 per cent of those on the Live Register. This figure has fallen dramatically over the last three years and, as of October 2018, there were 83,000 people in long-term unemployment (41.7 per cent of the total). Table 4 displays the difference in long-term unemployment between men and women. In October 2015, over 50 per cent of men on the Live Register were classified as being long-term unemployed in comparison to 41.4 per cent of women. This difference can largely be explained by the collapse of the construction sector following the financial crisis. The collapse of the sector accounted for a significant increase in the number of men in long-term unemployment, while the impact on women, who make up only a small fraction of construction related workers, was

18 With occasional breaks in the data.

19 Abraham, C., K., Sandusky, J., Haltiwanger and J. R., Spletzer (2016). 'The Consequences of Long Term Unemployment: Evidence from Matched Employer-Employee Data', Working Papers 16-40, Center for Economic Studies, U.S. Census Bureau.

negligible. As the performance of the economy has improved and the construction sector has recovered, the long run employment gap has narrowed significantly with 43.7 per cent of men and 39 per cent of women in long-term unemployment as of October 2018.

TABLE 4 PERSONS ('000) ON THE LIVE REGISTER CLASSIFIED BY DURATION

Gender	Duration	2015 M10		2018 M10	
		('000)	%	('000)	%
Total	All Durations	321		199	
	Under 1 year	171	53.4	116	58.3
	1-2 years	38	11.9	22	11.2
	2-3 years	26	8.2	13	6.5
	3 years and over	85	26.6	48	24.0
Male	All Durations	190		112	
	Under 1 year	94	49.7	63	56.3
	1-2 years	22	11.7	13	11.6
	2-3 years	15	7.8	7	6.6
	3 years and over	58	30.8	29	25.5
Female	All Durations	131		87	
	Under 1 year	77	58.6	53	61.0
	1-2 years	16	12.2	9	10.7
	2-3 years	11	8.7	6	6.3
	3 years and over	27	20.6	19	22.0

Source: Live Register, Central Statistics Office.

Table 5 summarises the number of people on the Live Register by the last occupation held between October 2017 and 2018. The number of people on the Live Register has fallen across all occupational groups over the last year. Craft and related services represents the largest share of registered individuals, though this group also saw the largest year-on-year decrease (-19.42 per cent) in people out of work.

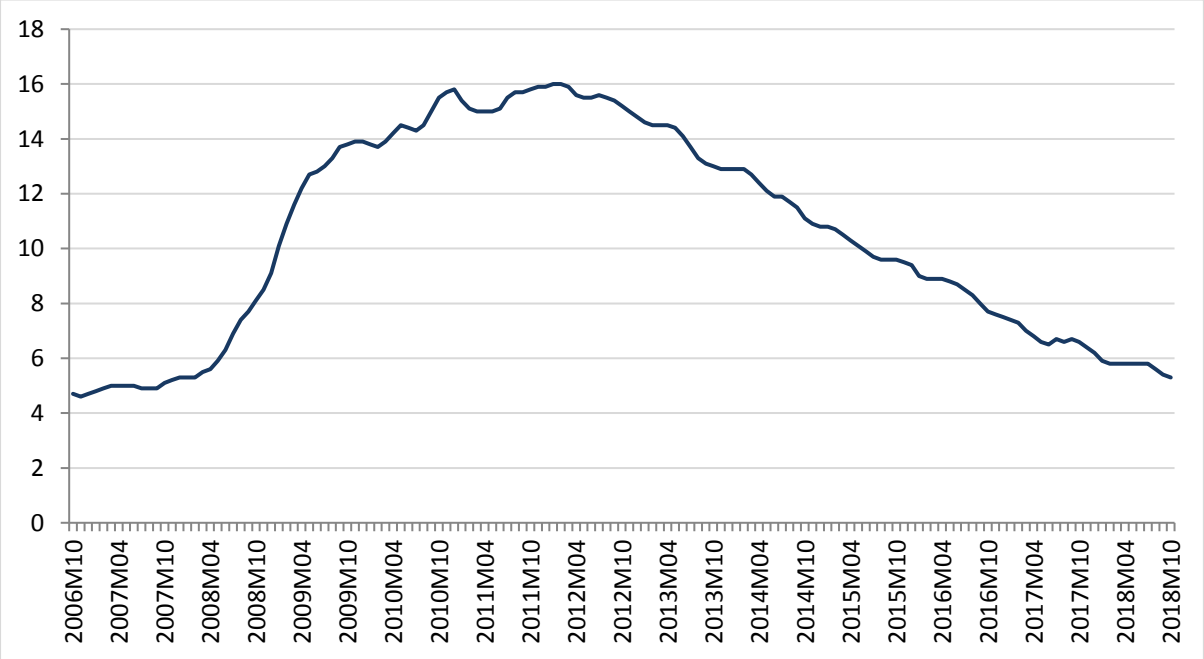
TABLE 5 NUMBERS AND PROPORTIONS ON THE LIVE REGISTER ('000) BY LAST OCCUPATION

Sector	2017 M10	2018 M10	% Change
All broad occupational groups	236.5	199.2	-15.8%
Managers and administrators	11.4	10.3	-9.7%
Professional	14.3	12.4	-13.3%
Associate professional and technical	7.7	6.9	-10.4%
Clerical and secretarial	24.6	21.6	-12.2%
Craft and related	41.7	33.6	-19.4%
Personal and protective services	30.7	25.9	-15.6%
Sales	24.9	20.5	-17.7%
Plant and machine operatives	36.8	30.7	-16.6%
Other broad occupational groups	29.4	24.7	-16.0%
No occupation	15.0	12.5	-16.7%

Sources: Live Register, Central Statistics Office.

In October 2018 the seasonally-adjusted unemployment rate fell to 5.3 per cent. This is the lowest level of unemployment recorded since the first quarter of 2008.

FIGURE 46 SEASONALLY-ADJUSTED UNEMPLOYMENT RATE BY MONTH (%)



Source: Labour Force Survey, Central Statistics Office.

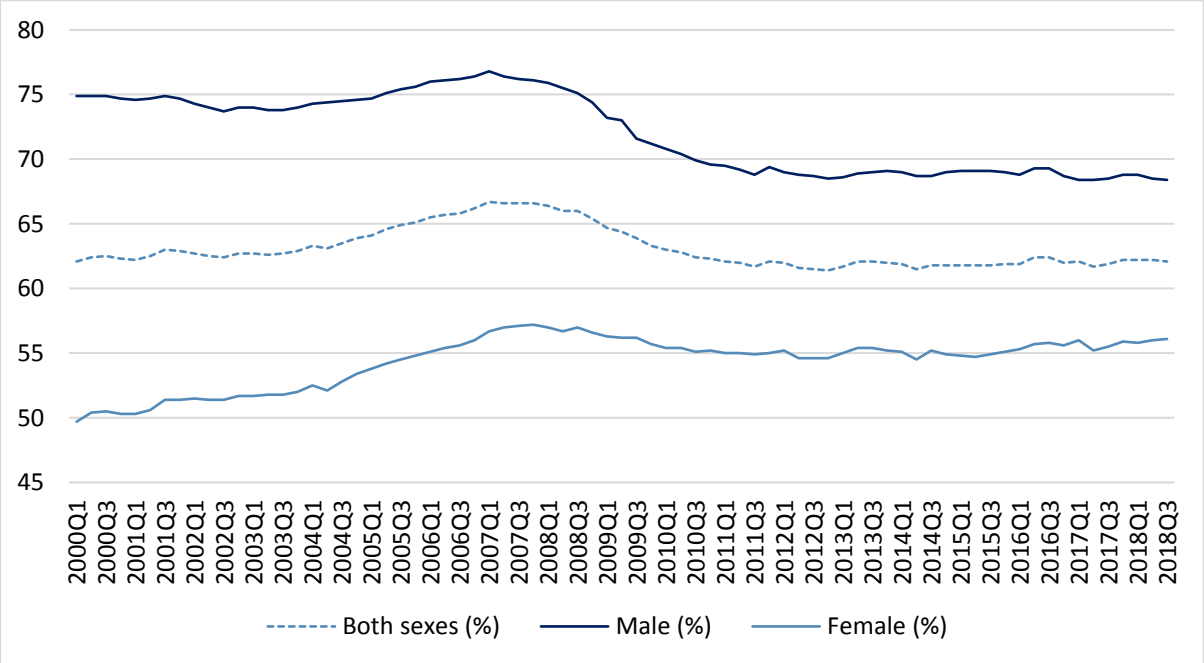
Employment

The seasonally-adjusted figures for employment in the Irish economy continue to increase with 66,700 jobs being added relative to the same period last year (3 per cent), bringing the number of persons in employment to 2,237,200. The largest

year-on-year growth rates were recorded in the construction sector (14.1 per cent), administrative and support service sector (13.7 per cent) and accommodation and food services (10.1 per cent). Elsewhere, agricultural employment decreased by 5.4 per cent for the same period, falling by 8.8 per cent since the outcome of the Brexit referendum. As Lawless and Studnicka (2017) highlight, this sector bears a considerably higher share of exposure to potential Brexit fallouts and hence may continue to experience disproportionally larger shares of job loss in the future as well.[20]

After a period of continued growth, employment in the Irish economy has now surpassed its previous 2007 peak level (2,228,700) and more workers are moving from part-time to full-time employment. In Q3 2018, full-time (non-seasonally-adjusted) employment increased by 44,200 (2.5 per cent) year-on-year to 1,812,900. Full-time employment now accounts for 79.8 per cent of total employment, this compares with 81.3 per cent in the 2007 peak and 74.8 per cent in the 2012 downturn. Part-time employment increased by 22,500 (5.1 per cent) to 460,300 and accounts for 20.2 per cent of total employment. Overall employment rates (69.1 per cent) are still below 2007 levels (71.8 per cent) but above those in the early 2000s (64.5 per cent).

FIGURE 47 SEASONALLY-ADJUSTED PARTICIPATION RATES BY GENDER, 15 YEARS AND OVER (%)



Source: Labour Force Survey, Central Statistics Office.

[20] Lawless, M. and Z. Studnicka (2017). 'Potential Impacts of WTO Tariffs on Cross-Border Trade', *Brexit Research Report*, InterTradeIreland. Available at: https://intertradeireland.com/brexit/brexit-research.

Figure 47 displays the seasonally-adjusted labour force participation rates by gender since the turn of the millennium. Overall, the participation rate has failed to recover from the financial crash, with participation rates in Q3 2018 4.5 per cent below their peak level of 66.7 per cent in 2007. The gender gap in participation has also fallen over this period due to the different trends in male and female participation rates from their peak levels. The participation rate for men has stagnated following the crash and remains 8.4 per cent below its peak rate of 76.8 per cent. In contrast, the female participation rate fell by just 2.7 per cent from the pre-crash high of 57.2 per cent and was back at 56.1 per cent in Q3 2018.

TABLE 6 EMPLOYMENT RATES (15-64 YEARS) BY EDUCATION (%)

Education Level	Age Group	Ireland	EU
All Education levels	Total (15-64 years)	68.5	68.6
	From 15 to 24 years	40.1	35.1
	From 25 to 54 years	79.1	80.6
	From 55 to 64 years	60.5	58.6
Lower secondary or below	Total (15-64 years)	36.8	46.1
	From 15 to 24 years	10.1	18.9
	From 25 to 54 years	54.8	63.5
	From 55 to 64 years	49.9	43.9
Upper secondary and post-secondary non-tertiary	Total (15-64 years)	69.3	72.0
	From 15 to 24 years	57.0	47.8
	From 25 to 54 years	75.8	82.0
	From 55 to 64 years	61.9	60.2
Tertiary	Total (15-64 years)	84.9	84.7
	From 15 to 24 years	78.2	63.1
	From 25 to 54 years	87.8	88.6
	From 55 to 64 years	70.3	73.7

Sources: Labour Force Survey, Central Statistics Office, Eurostat.

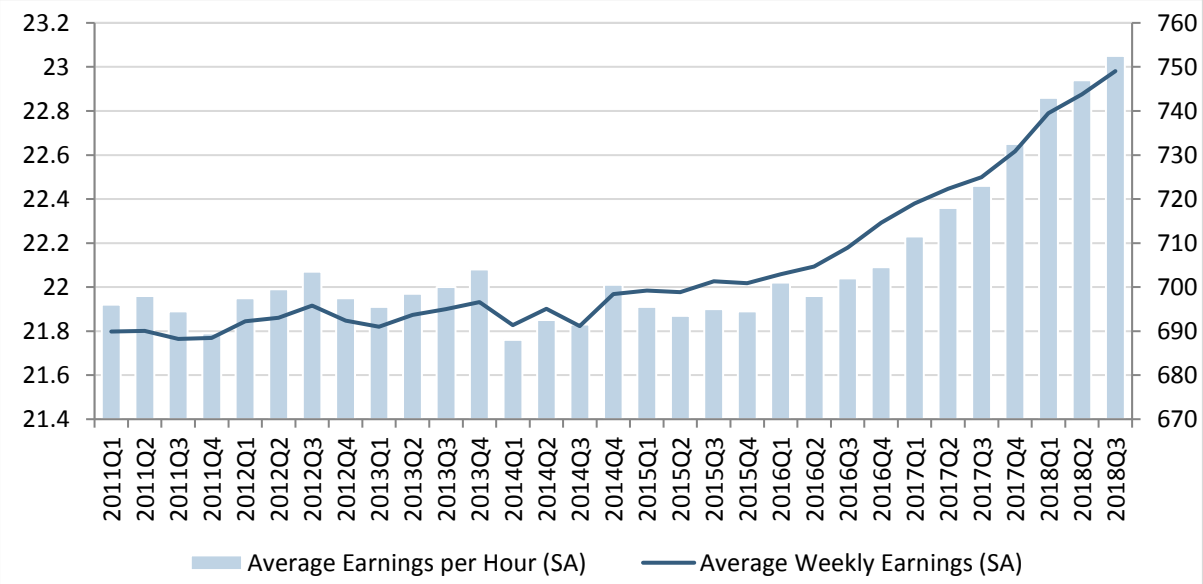
Overall employment rates in Ireland are almost exactly in line with the average among European Union countries. Employment rates among the young (15-24 years) and the older generation (55-64 years) are higher in Ireland than in the EU average, although prime age workers (25-54 years) face lower employment rates. One major cause of concern is the rate of employment amongst those with lower levels of education, which is significantly less than the EU average. Amongst those with lower secondary education or below there is an employment rate of just 36.8 per cent in Ireland in comparison with 46.1 per cent in the EU. This discrepancy is highest amongst the young, with 10.1 per cent of 15-24-year-olds with lower secondary education in employment, in comparison with 18.9 per cent in the EU. These differences are reversed when it comes to young people with tertiary education. In Ireland 78.2 per cent of those aged 15-24 with tertiary

education are employed compared to 63.1 per cent in the EU. These prominent disparities in the employment rates among individuals with different educational levels may be suggestive of a skills mismatch in the Irish economy.[21]

Earnings

In Q3 2018, seasonally-adjusted Average Hourly Earnings increased by 2.6 per cent to €23.05 per hour relative to the same period last year. The largest increase for the quarter was observed in information and communication activities, rising annually by 4.6 per cent (an additional €1.41 per hour). Notably high growth occurred in transport and storage (+5.6 per cent) and administrative services (+4.8 per cent). Figure 48 highlights earnings persistently trending upwards since the end of 2015. As of Q3 2018, average weekly earnings reached €742.41, representing a 2.8 per cent increase from €722.09 in Q2 2017. An annual increase both in hourly earnings and paid hours resulted in a 5.5 per cent rise in average weekly earnings in the construction sector.

FIGURE 48 TRENDS IN AVERAGE EARNINGS PER WEEK AND PER HOUR (€), SEASONALLY-ADJUSTED



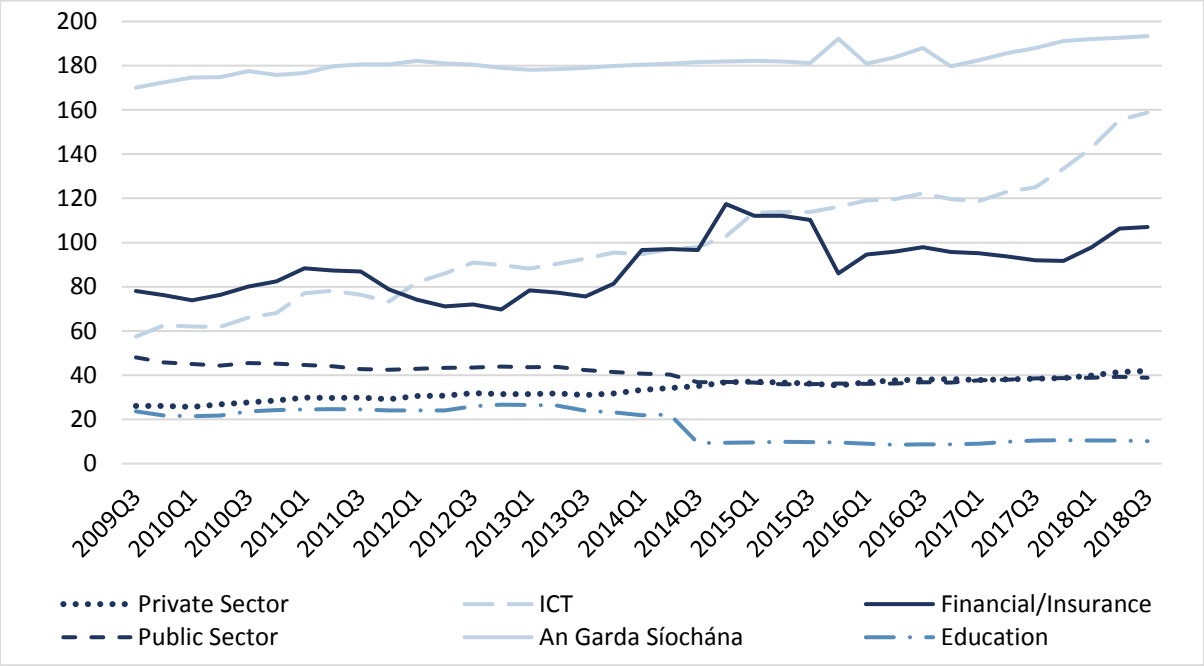
Source: Central Statistics Office.
Note: The Y-axis on the LHS scale has a very low range of values.

Distinguishing between public and private pay, the public sector experienced an annual increase of 2.3 per cent to €961.39 per week while private sector employees saw an annual increase of 3.4 per cent to €688.99 per week. For the

[21] See McGuinness, S., P. Konstantinos and P. Redmond (2017). 'Skills Mismatch: Concepts, Measurement and Policy Approaches', *Journal of Economic Surveys*, Vol. 32 (4), pp. 985-1015.

public sector, average weekly earnings ranged from €827.67 among regional bodies to €1,325.13 per week for An Garda Síochána in Q3 2018. Average private sector earnings ranged from €354.48 per week in accommodation and food service activities to €1,168.10 per week in ICT activities. Irregular earnings and bonuses, which are those that are not paid regularly at each pay period, are displayed in Figure 49.

FIGURE 49 WEEKLY BONUS EARNINGS, FOUR-QUARTER ROLLING AVERAGE (€)



Source: Central Statistics Office.

Labour market forecasts

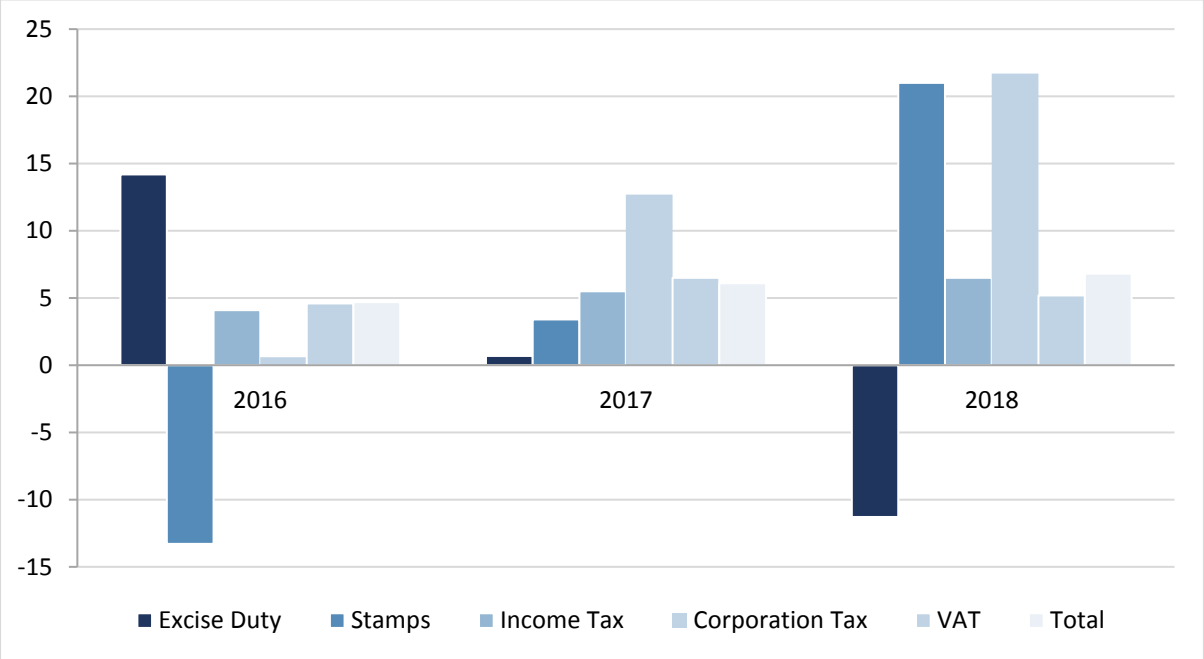
As the Irish economy approaches full employment, earnings growth has increased. With economic activity forecast to be growing at a lower, more stable rate over the next two years, the unemployment rate is expected to average 5.7 per cent through 2018 and 5.1 per cent in 2019. Employment is set to exceed 2.26 million by the end of 2018, increasing to 2.33 million by the end of 2019. While inflows of migrant workers should help maintain competitiveness in the domestic market, the upward trend in the vacancy rate suggests labour supply has thus far been persistently outstripped by demand. As a result, nominal earnings are expected to continue to rise, increasing by 2.6 per cent in 2018, and 2.9 per cent in 2019.

PUBLIC FINANCES

Annual taxation receipts for the year to October have grown significantly at almost 7 per cent. This follows 6 per cent growth in 2017 and an increase of

almost 5 per cent in 2016. Figure 50 illustrates the annual changes in taxation returns for the last three years for the main tax categories as well as the overall total amount.

FIGURE 50 ANNUAL CHANGES IN MAJOR TAX SUB-COMPONENTS (%)



Source: Department of Finance and QEC calculations.

While we discuss the relatively large increases in corporation taxes later in the section, the strong increase in both income taxes and pay related social insurance does indicate the robust expansion of underlying economic activity. For the year to date, the latter item is growing at almost 5 per cent per annum, while income taxation receipts are up 6.5 per cent relative to 2017. This, allied to the continuing decline in the unemployment rate, denotes the strength of domestic economic performance.

Budget 2019 saw a significant increase in Government expenditure forecast for the short- to medium-term. Table 7 documents actual and forecast changes in gross voted current and capital expenditure between 2016 and 2020.

TABLE 7 ACTUAL AND FORECAST ANNUAL CHANGES (%) IN GROSS VOTED GOVERNMENT EXPENDITURE: 2016-2020

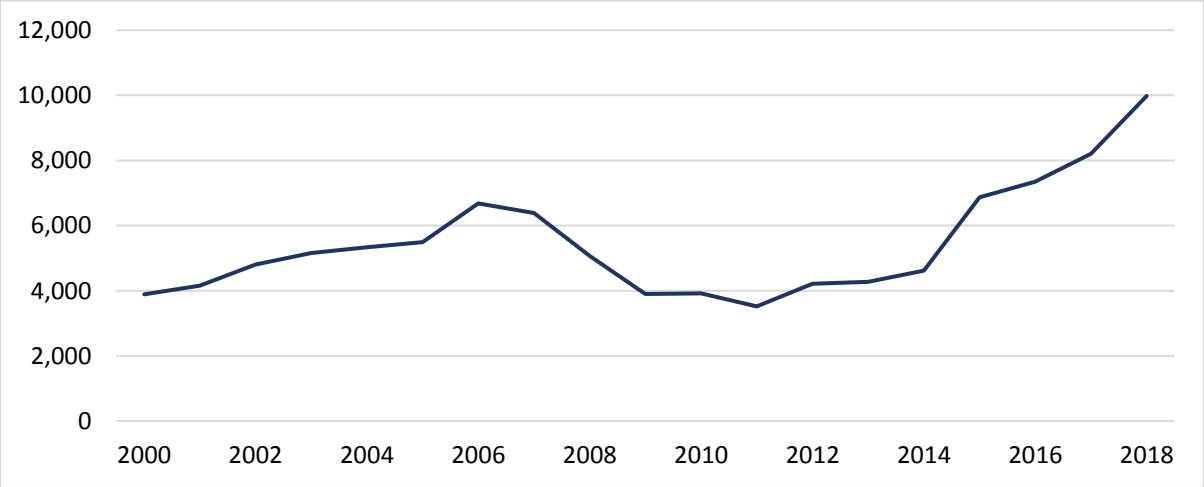
Year	Current	Capital	Total
2016	4.2	9.6	4.6
2017	5.1	8.2	5.3
2018	5.5	30.2	7.4
2019	4.1	23.5	6.0
2020	2.4	10.3	3.3

Source: Department of Finance and QEC calculations.

In 2018 and 2019 capital expenditure in particular is expected to increase substantially. This does reflect a response to the period of significant under-investment in areas such as housing in the aftermath of the financial crisis. However, it is important that the Government does not cause the domestic economy to overheat given this increased expenditure and that the increase is based on sustainable increases in Government revenues.

As noted earlier, a major reason for the strong increase in recent taxation receipts is the relatively large surge in corporation taxation particularly for the month of October itself. For the period to October, this means that corporation tax receipts are now growing at over 20 per cent per annum. This follows an increase of almost 13 per cent for the same period last year. In Figure 51, annual corporation tax receipts for the period 2000 to the present are plotted.[22]

FIGURE 51 ANNUAL CORPORATION TAXATION RECEIPTS: 2000-2018 (€ MILLION)



Source: Department of Finance and QEC calculations.

[22] Note the 2018 figure is obtained by applying the January-October growth rate to the 2017 figure.

It can be seen that post-2006, corporation tax receipts fell quite significantly and only started to increase from 2012 onwards. Therefore, some of the recent increase in this category does appear to be taxation receipts coming back to a long-run trend level. However, corporate tax returns over the past few years have experienced a particularly significant increase. The concern that some of these increases are 'windfall' in nature is compounded by the presence in the National Accounts of large distortionary transactions, which are due to the activities of certain multinational firms.

The sustainability of this increase is a concern from a budgetary perspective. As noted in Addison-Smyth and McQuinn (2016, 2010),[23] much of the difficulties experienced with the Irish fiscal accounts post the financial crisis were due to the windfall nature of taxation receipts associated with the housing market in the lead up to 2008. Therefore, it is crucial that policymakers do not seek to fund future current expenditure on the back of potential windfall receipts in corporation taxes.

While corporation taxation receipts are expected to increase by over 20 per cent in 2018, as a sensitivity exercise we take an alternative rate of increase and examine the implications for the Government General Balance. In particular, we assume that corporation taxes increase by 9 per cent in 2018.[24] The results for both scenarios are compared in Table 8.

TABLE 8 IMPLICATIONS FOR GENERAL GOVERNMENT BALANCE (GGB) OF DIFFERENT CORPORATION TAX LEVELS: 2018-2019

Scenario	2018	2019
Baseline		
GGB	-0.2	-0.3
Growth Rate Corporation Tax (%)	21.7	2.0
Counterfactual		
GGB	-0.4	-0.5
Growth Rate Corporation Tax (%)	9.0	2.0

Source: QEC calculations.

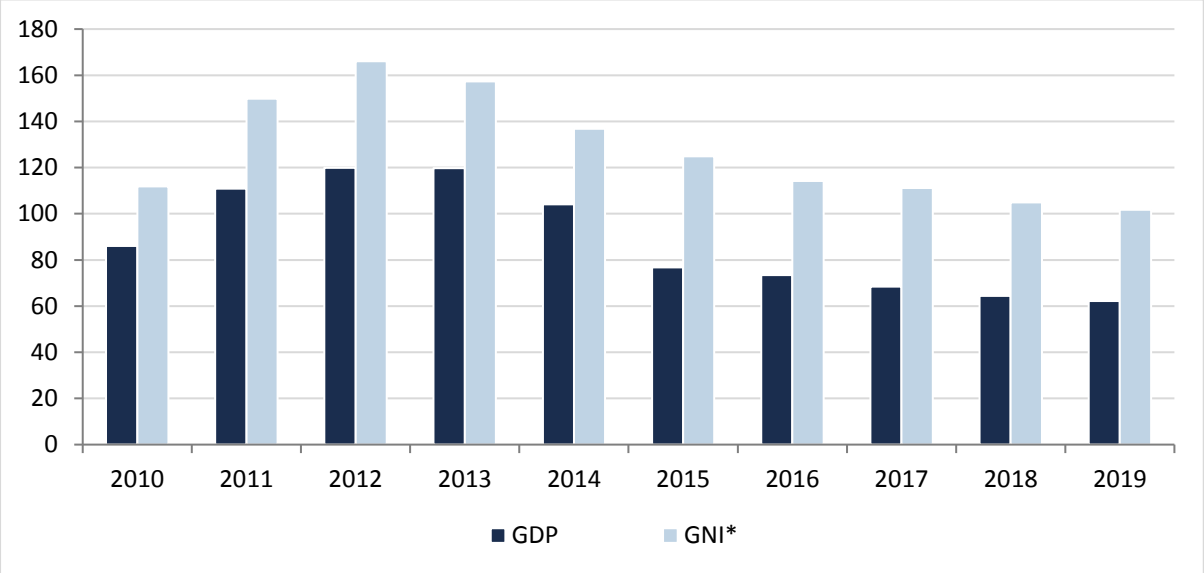
23 Addison-Smyth D. and K. McQuinn (2010). 'Quantifying revenue windfalls from the Irish housing market', *The Economic and Social Review*, Vol. 41(2), pp.201-223.
Addison-Smyth D. and K. McQuinn (2016). 'Assessing the sustainable nature of housing-related taxation receipts: The case of Ireland', *Journal of European Real Estate Research*, First published online, June.

24 On average, corporation tax receipts have increased by 9 per cent per annum between 1998 and 2018.

The counterfactual exercise demonstrates the GGB would have been 0.2 percentage points worse off for both this year and next year if corporation taxes had grown at a long-term average growth rate of 9 per cent for the present year.

Figure 52 presents the debt-to-output ratio for both GDP and the new GNI* measure. While both trends indicate that Ireland's debt sustainability is clearly improving, a significant difference is evident between the GDP and GNI* output denominators.

FIGURE 52 DEBT-TO-GDP AND GNI*RATIOS (%)



Source: QEC calculations.

General Assessment

2018 saw the Irish economy register another robust year of activity. While the transactions of a small number of multinationals inflate the headline growth figure, underlying economic activity still increased between 4.5 and 5 per cent in the current year. The period since 2013 has seen a truly remarkable recovery by the Irish economy. Furthermore, it appears that the growth profile in 2018 was a broadly balanced one with both domestic and external sources of growth contributing to the overall performance.

While the outlook for 2019 is also positive, serious risks and challenges will arise in the coming year; most of these are international in nature. The outcome of the Brexit process will have a significant impact on the domestic economy; both for the immediate forecast range but also, obviously, more profoundly over the medium to longer term. In the Output section of the *Commentary*, the implications for the short-term forecast of Brexit are outlined. In particular the results of the modelling work in Bergin et al. (2017),[25] which examine the implications of the different Brexit outcomes over the longer term on the Irish economy are mapped through to the short-term forecasts. These results suggest that, depending on the outcome, the growth rate for the Irish economy in 2019 could be reduced by up to 1.5 percentage points depending on the nature of the exit process.

Notwithstanding the risks to the outlook, the persistence of recent growth does give rise to the possibility of capacity constraints impeding future activity. In a Research Note to the *Commentary*, McQuinn (2018) examines this issue specifically in the context of future housing supply. In particular the capacity of the Irish labour market and financial sector to accommodate a sustained increase in housing output is assessed. The Note suggests that while both employment and credit levels in construction are still quite low by historical standards, any sizeable increase in activity will see a significant expansion in the size of the domestic financial sector. Furthermore, given the low rate of unemployment at present, the domestic economy will require a sustained increase in net inward migration to provide the requisite labour. This will pose a certain timing challenge in the sense that while increased inward migration will be necessary to meet the residential construction targets outlined in *Rebuilding Ireland*, these additional

[25] Bergin A., A. Rodriguez, E. Morgenroth and D. Smith (2017). 'Modelling the medium-to long-term potential macroeconomic impact of Brexit on the Irish economy', *The Economic and Social Review*, Vol. 48, No. 3, Autumn 2017, pp.305-316.

workers will inevitably increase the level of structural demand for housing in the economy. Also, as outlined in Duffy et al. (2016)[26] there are now certain regulatory challenges confronting the Irish financial sector in funding a sizeable increase in its balance sheet.

Budget 2019 was a significantly expansionary fiscal package with both current and capital expenditure set to increase in a marked fashion relative to 2018. While the increased expenditure on items to do with social housing are welcome, overall the package does increase the possibility of overheating in the domestic economy. Furthermore, while a surplus in the General Government Balance (GGB) had looked a possibility in 2019 prior to the Budget, the subsequent increase in expenditure announced does now mean that a deficit is likely in 2019. The drift in current spending in areas such as health is particularly worrisome. Given the sustained rate of expansion in domestic activity, it is incumbent on policymakers to start accumulating fiscal buffers to help offset the impact of the next sizeable shock on the economy. A further note of caution in relation to the public finances is the substantial nature of the corporation tax take in 2018. In the year to October these receipts are up over 20 per cent on the similar period in the previous year, which themselves had increased by 13 per cent on 2016 levels. It is very difficult to assess how much of this increase reflects sustainable improvements in the financial performance of multinationals operating in the Irish jurisdiction and how much is related to certain exceptional transactions. Either way, as noted in Addison-Smyth and McQuinn (2010; 2016),[27] it is imperative to heed the lessons of the past and not to base future increases in expenditure on the basis of one-off or windfall receipts in taxation.

In another Special Article to this *Commentary*, Keane et al. (2018) examine the budgetary package from a distributional perspective. Their analysis suggests that by comparing budget measures to what would have happened if tax and benefit thresholds rose in line with forecasted average wage and price growth, the Budget's tax and benefit changes generally kept pace with prices, but were not large enough to keep pace with wage growth. In particular, the analysis suggests that relative to a neutral benchmark, where all thresholds, duties and benefit payments rose in line with forecast wage growth, the Budget resulted in households' disposable income being 0.66 per cent less than the benchmark level. The difference between the benchmark level and actual incomes range

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26 Duffy D., D. Foley, K. McQuinn and N. McInerney (2016). 'Demographic change, long-run housing demand and the related challenges for the Irish banking sector', in *Ireland's Economic Outlook*. The Economic and Social Research Institute, December, 2016.

27 Addison-Smyth D. and K. McQuinn (2010). 'Quantifying revenue windfalls from the Irish housing market', *The Economic and Social Review*, Vol. 41(2), pp.201-223.
Addison-Smyth D. and K. McQuinn (2016). 'Assessing the sustainable nature of housing-related taxation receipts: The case of Ireland', *Journal of European Real Estate Research*, First published online, June.

from -0.9 per cent for the lowest income group to -0.4 per cent for the highest income group. Keane et al. (2018) also discuss broader fiscal challenges. In particular, they note the highly concentrated nature of corporation tax receipts, the need for more stable sources of taxation revenue such as that provided by carbon taxes and the need for more comprehensive forecasts of future expenditure levels by Government departments.

DETAILED FORECAST TABLES

FORECAST TABLE A1 EXPORTS OF GOODS AND SERVICES

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	193.0	-0.2	1.8	192.6	11.6	12.2	215.0	4.3	3.3	224.3
Tourism	4.7	6.1	4.8	5.0	3.0	3.0	5.1	3.2	3.2	5.3
Other Services	130.4	18.7	16.6	154.7	5.7	5.0	163.6	8.7	7.8	177.8
Exports of Goods and Services	328.2	7.4	7.8	352.6	8.9	8.7	384.0	6.2	5.2	407.7
FISM Adjustment	0.0			0.0			-0.5			-0.5
Adjusted Exports	328.2	7.4	7.8	352.6	8.8	8.7	383.5	6.2	5.2	407.2

FORECAST TABLE A2 INVESTMENT

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Housing	4.2	28.5	22.6	5.4	27.6	22.5	6.9	21.7	24.2	8.4
Other Building	11.3	26.2	18.8	14.3	15.0	9.0	16.4	17.1	11.0	19.2
Transfer Costs	1.1	4.4	-4.2	1.2	9.2	3.0	1.3	9.2	3.0	1.4
Building and Construction	17.7	23.0	16.0	21.8	17.7	11.9	25.6	17.9	14.2	30.2
Machinery and Equipment	79.9	-40.9	-41.4	47.2	-12.5	-14.4	41.3	9.6	7.3	45.3
Total Investment	97.6	-29.3	-31.0	69.0	-3.0	-6.3	67.0	12.9	9.8	75.5

FORECAST TABLE A3 PERSONAL INCOME

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	%	€ bn	€ bn	%	€ bn	€ bn	%	€ bn	€ bn
Agriculture	0.7	2.7	0.0	0.7	2.5	0.0	0.7	1.4	0.0	0.7
Non-Agricultural	81.8	4.7	3.9	85.7	5.9	5.0	90.7	6.4	5.8	96.6
Rental Income	9.4	7.2	0.7	10.0	7.6	0.8	10.8	7.4	0.8	11.6
Other Income	13.5	16.3	2.2	15.7	7.9	1.2	17.0	4.7	0.8	17.8
Total Income Received	105.4	6.4	6.8	112.1	6.3	7.1	119.2	6.2	7.4	126.6
Current Transfers	9.1	-5.4	-0.5	8.6	-6.6	-0.6	8.0	-8.8	-0.7	7.3
Gross Personal Income	114.4	5.5	6.3	120.7	5.4	6.5	127.2	5.3	6.7	134.0
Taxes on Income and Wealth	-21.2	4.3	-0.9	-22.2	7.8	-1.7	-23.9	4.7	-1.1	-25.0
Personal Disposable Income	93.2	5.8	5.4	98.6	4.8	4.8	103.3	5.4	5.6	109.0
Consumption	91.2	2.9	2.6	93.8	4.0	3.8	97.6	3.9	3.8	101.4
Personal Savings	8.1	40.6	3.3	11.4	13.6	1.5	13.0	18.2	2.4	15.3
Savings Ratio	8.3			11.2			12.0			13.4
Average Personal Tax Rate	0.19			0.18			0.19			0.19

FORECAST TABLE A4 IMPORTS OF GOODS AND SERVICES

	2016	% change in 2017		2017	% change in 2018		2018	% change in 2019		2019
	€ bn	Value	Volume	€ bn	Value	Volume	€ bn	Value	Volume	€ bn
Merchandise	87.0	-2.2	-5.5	85.2	7.0	7.6	91.1	8.3	7.2	98.7
Tourism	5.6	3.4	2.4	5.8	4.7	3.2	6.1	5.4	3.8	6.4
Other Services	193.2	-10.8	-11.7	172.2	0.1	-1.0	172.4	7.3	5.9	184.9
Imports of Goods and Services	285.9	-7.9	-9.4	263.3	2.4	1.7	269.6	7.6	6.3	290.0
FISM Adjustment	0.0			0.0			-0.5			-0.6
Adjusted Imports	285.9	-7.9	-9.4	263.3	2.2	1.7	269.1	7.6	6.3	289.4

FORECAST TABLE A5 BALANCE OF PAYMENTS

	2016	2017	2018	2019
	€ bn	€ bn	€ bn	€ bn
Exports of Goods and Services	328.2	352.6	383.5	407.2
Imports of Goods and Services	285.9	263.3	269.1	289.4
Net Factor Payments	-49.9	-59.8	-70.8	-75.7
Net Transfers	-3.8	-4.6	-5.1	-5.7
Balance on Current Account	-11.4	24.9	38.4	36.3
As a % of GNP	-5.1	10.7	15.2	13.6

FORECAST TABLE A6 EMPLOYMENT AND UNEMPLOYMENT, ANNUAL AVERAGE

	2016	2017	2018	2019
	'000	'000	'000	'000
Agriculture	112.3	110.4	107.2	105.0
Industry	394.2	412.0	425.2	438.4
Of which: Construction	118.6	128.8	144.4	150.7
Services	1,618.7	1,664.3	1,725.8	1,778.9
Total at Work	2,132.3	2,194.2	2,257.9	2,330.6
Unemployed	194.9	157.9	141.6	117.6
Labour Force	2,327.1	2,352.0	2,399.5	2,448.2
Unemployment Rate, %	8.4	6.7	5.7	5.1

Research Notes

CAPACITY CONSTRAINTS IN THE IRISH ECONOMY? A PARTIAL EQUILIBRIUM APPROACH

* Kieran McQuinn[1]

1. INTRODUCTION

Given the consistently high growth rates experienced by the Irish economy since 2013, an inevitable policy question is whether the economy will face capacity constraints in the short to medium-term. By capacity constraints we mean capital, labour or financial constraints which may prevent the economy from reaching its potential level of output and from growing on a sustainable basis.

Typically, one way to assess capacity constraints from a macroeconomic perspective is to estimate an 'output gap' and to assess, as a result, whether actual output levels in the economy are above or below the potential level. While estimates of the output gap in an Irish context are problematic in general due to the small open nature of the domestic economy, they are particularly difficult at present due to the well-cited issues with the National Accounts.[2] As a result, in this Note, we take a partial approach to the question by addressing a variety of different issues to do with the labour market, net migration and the total amount and allocation of credit in the economy.

In assessing the potential presence of capacity constraints, we pay particular attention to the property market and the financial sector for two reasons:

It was the confluence of financial sector and fiscal policy issues which led to the significant difficulties experienced in the Irish economy in the period after 2007/2008;

A significant increase in housing related activity is likely in the domestic economy in the coming years both from private and public sector sources.

In evaluating the presence of capacity constraints, we adopt two approaches; first, we examine the historical trends in the particular indicator/variable and secondly, where possible, we conduct a cross-country comparison. Both

1 Thanks to Alan Barrett and Conor O'Toole, both ESRI, for comments on a previous draft. All remaining errors are the author's.

2 For a discussion of this, see Casey (2018).

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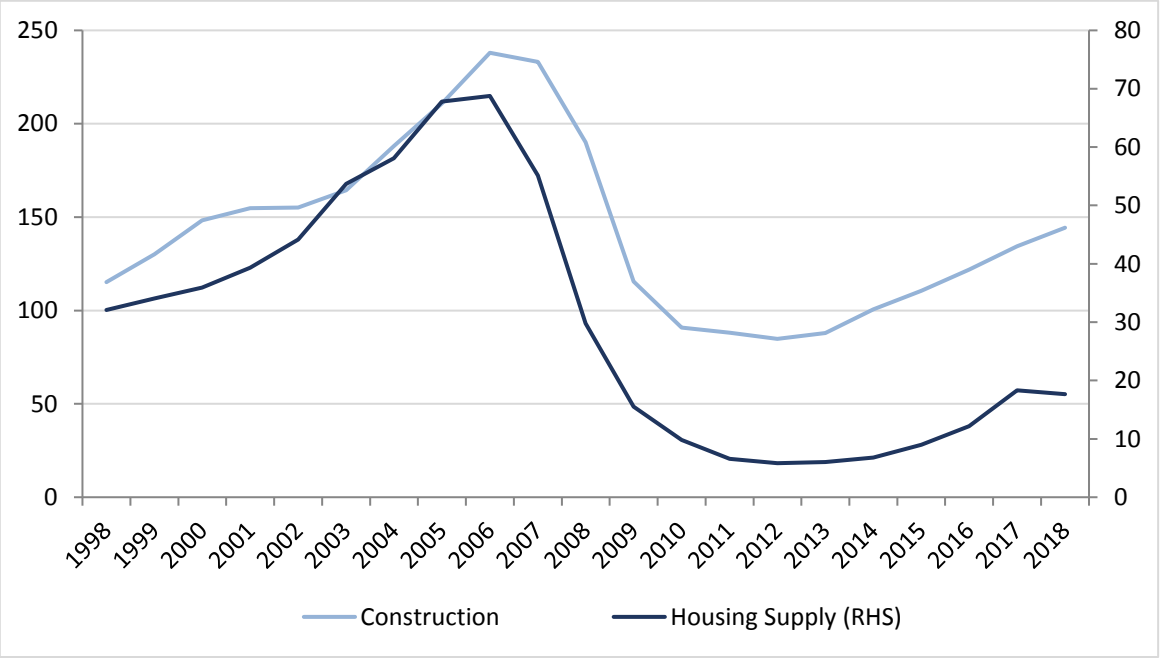
approaches help provide an indication as to whether present activity levels are sustainable or not with implications then for future developments.

1. LABOUR MARKET AND MIGRATION

In Figure 1, we examine the level of employment in the construction sector in the country and compare this with the level of housing supply. The data are compared over the period 1998-2018.

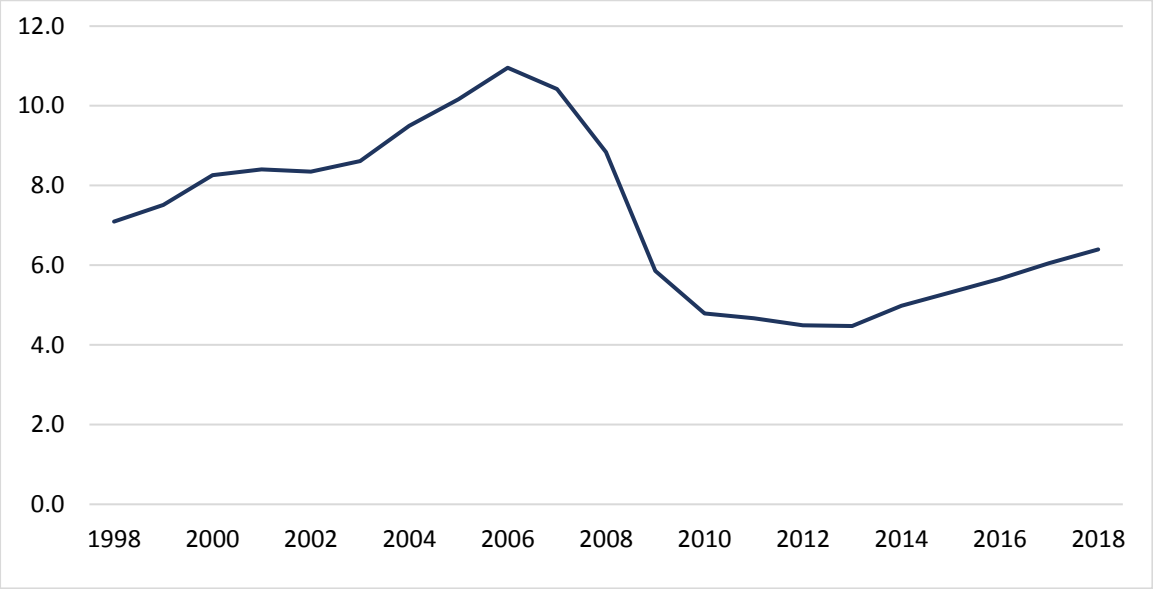
FIGURE 1 HOUSING SUPPLY AND EMPLOYMENT IN CONSTRUCTION ('000)



Sources: Central Statistics Office and QEC calculations.

From the chart, a clear relationship can be observed between actual housing supply and the total numbers in construction related activity. At present, the numbers in construction are still somewhat below the heights witnessed back in 2007 and 2008. However, what is also clear is that given the present low level of housing supply vis-à-vis previous levels, the numbers in construction employment are actually high on a relative basis. Therefore, if housing construction is to increase in future, in the absence of significant efficiencies in the sector, employment would have to increase quite substantially. Figure 2 plots the share of total employment in construction over the same period.

FIGURE 2 SHARE OF TOTAL EMPLOYMENT IN CONSTRUCTION (%)



Sources: Central Statistics Office and QEC calculations.

From the chart, it is apparent that construction level employment as a percentage of the total is at rates observed back in the mid-1990s. As a cross-country comparison, in Table 1, the relevant share of construction sector employment in 2017 for a select number of European countries is listed.

TABLE 1 CONSTRUCTION AS A SHARE (%) OF TOTAL EMPLOYMENT IN 2017 FOR SELECT EUROPEAN COUNTRIES

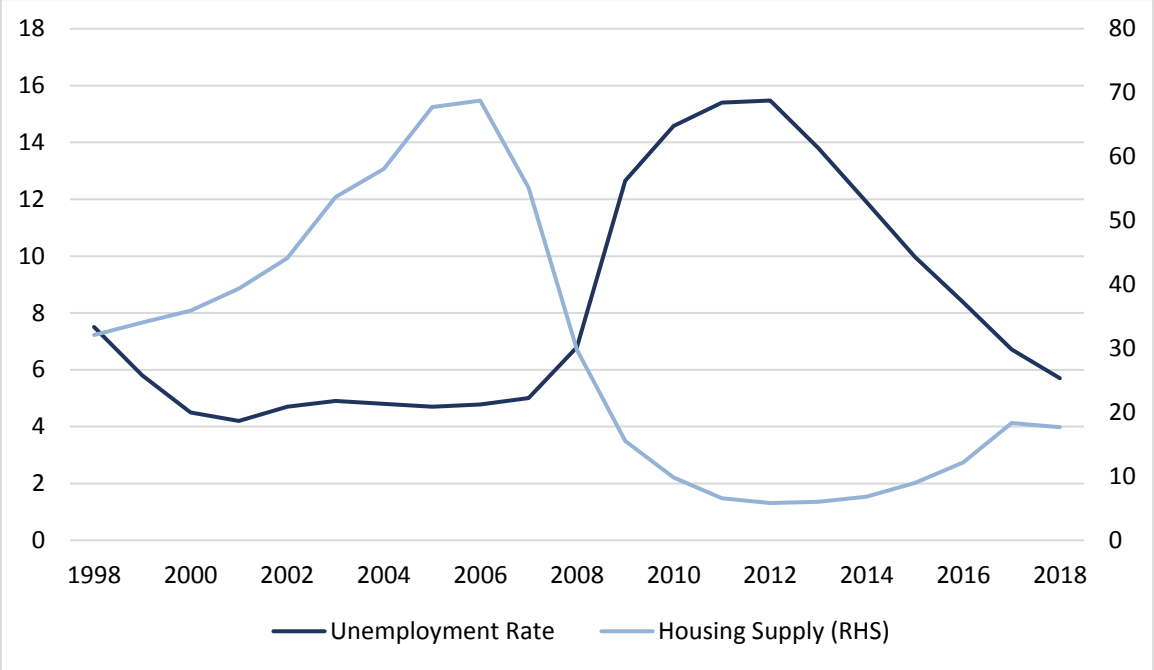
Country	%
European Union	6.7
Euro Area	6.4
Germany	6.8
Ireland	5.9
France	6.5
Spain	6.0
Netherlands	4.8
Austria	8.0
Poland	7.5
Portugal	6.5
United Kingdom	7.3

Sources: Newcronos and QEC calculations.

The cross-country data reveal that Ireland's share of construction employment is one of the lowest observed across European countries. However, as is evident from Figure 2, the numbers working in construction can increase quite significantly on a year-on-year basis with the share increasing accordingly.

Given the highly open nature of the domestic economy, movements in the Irish labour market tend to be quite volatile with large fluctuations in migration trends frequently evident. Inward migration is a potentially important source of labour in an Irish context and can help to reduce upward wage inflation in key sectors of the domestic labour market. We examine labour market developments again in the context of activity in the housing market. In Figure 3, the level of housing supply and the unemployment rate are plotted over the period 1998-2018.

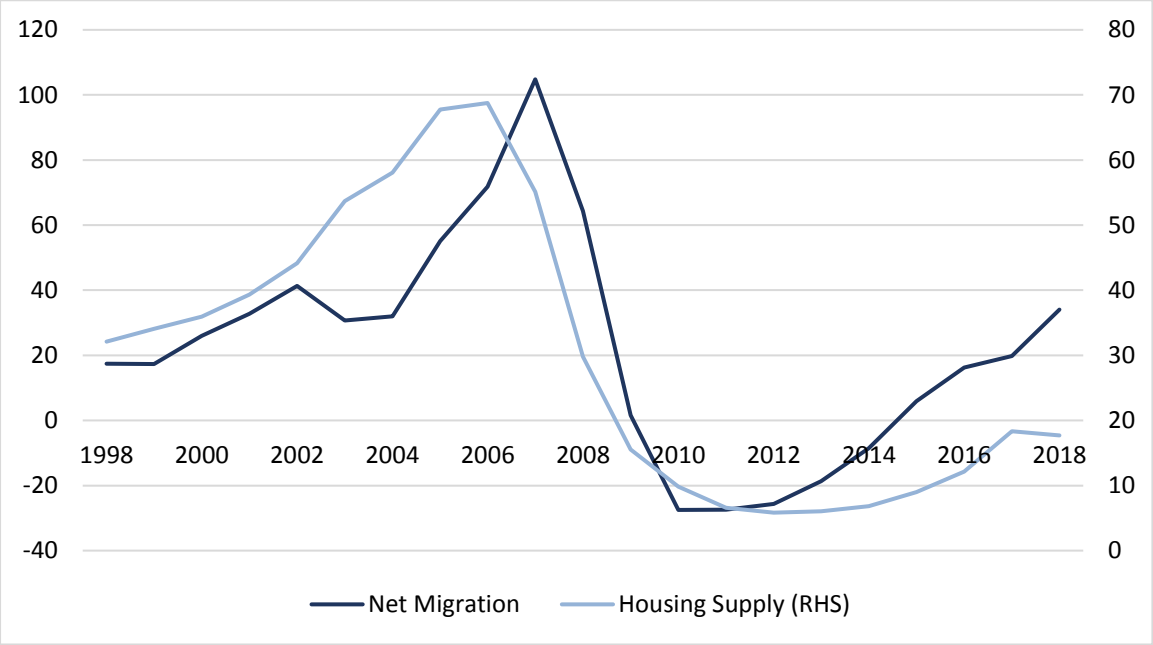
FIGURE 3 HOUSING SUPPLY ('000) AND THE IRISH UNEMPLOYMENT RATE (%)



Sources: Central Statistics Office and QEC calculations.

The graph illustrates the inverse relationship between unemployment and housing construction in the Irish market. Overall, high levels of housing supply are synonymous with low rates of unemployment and vice versa. However, at present, housing supply levels are quite low, relative to historical levels, while the unemployment rate is also quite low at 5.3 per cent. This does suggest that if housing construction rates are set to increase, net inward migration will be an important source of labour. In Figure 4, housing supply and net inward migration levels are plotted.

FIGURE 4 HOUSING SUPPLY AND NET INWARD MIGRATION ('000)



Sources: Central Statistics Office and QEC calculations.

Again, as with the total employment in construction series, there is a close relationship between net migration into the Irish State and housing supply levels. However, like the employment series in Figure 1, it is evident that net migration has already picked up in the absence of a significant increase in housing supply. This suggests that if a sustained increase in housing supply levels is to be achieved, then net migration will have to increase quite significantly in the future. In terms of the recent increase in inward migration, Table 2 outlines the country of origin of people coming into Ireland.

TABLE 2 ESTIMATED MIGRATION ('000) INTO IRELAND BY COUNTRY OF ORIGIN

Year	EU28 (excluding UK)	United States	Australia	Canada	Other Countries
2013	-1.2	-8.1	-1.7	-3.0	3.5
2014	-0.4	-3.8	-1.9	-2.1	2.6
2015	4.6	-0.7	-0.7	-3.9	6.9
2016	3.6	1.6	-0.4	-0.3	8.0
2017	4.7	1.8	-1.1	-0.5	8.2
2018	7.1	2.7	1.5	-1.4	15.5

Source: Central Statistics Office.

Therefore, most of the recent increase in inward migration has come from Europe and 'Other Countries'. Recent data from the Census indicate that the largest increase in foreign nationals between 2011 and 2016 living in Ireland was for the Italian, Romanian, Spanish, African and Brazilian nationalities.

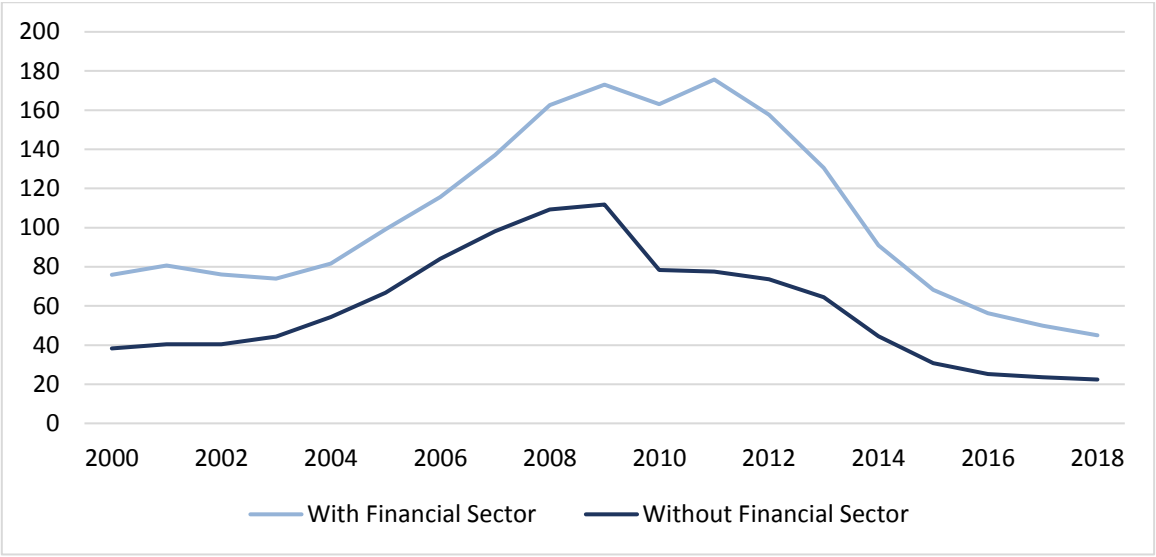
Two issues which may arise with future inward migration are existing pressures in the rental market and Brexit. Ironically, the significant increases in rental levels observed of late in the Irish residential market, particularly in Dublin, may act as a disincentive to future inward migration flows. Therefore, the existing high cost of accommodation may prevent the workers we require to address the housing supply shortage from actually coming to live and work here. The effects of Brexit are more ambiguous; greater frictions between the Irish and UK labour markets may prevent the relatively free movement of labour between both jusrisdictions, however the prospect and the eventual outcome of Brexit may make the UK a less desirable destination for inward migration from the rest of Europe. This may increase the relative attractiveness of Ireland, ceterus paribus, as a potential destination.

2. CREDIT AND FINANCIAL MARKETS

Having examined the labour market implications of future housing related construction activity in this section we focus on financial sector issues and the allocation of credit. The linkages between the housing market, the financial sector and fiscal policy were at the core of Ireland's difficulties in the run-up to the financial crisis of 2007/2008 and were, in the main, the reason for the country seeking a programme of support with the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF), (commonly referred to as the 'Troika'), in November 2010.

In Figure 5 the ratio of total credit issued to Irish resident private sector enterprises as a percentage of adjusted Gross National Income (commonly known as GNI*) is plotted. Expressing the total amount of credit issued as a percentage of output is a commonly used measure of financial deepening in an economy (see O'Brien et al., 2018, for details). Similar to the Central Bank of Ireland, we use GNI* as the relevant output denominator given the well cited difficulties with GDP in an Irish context. We use two different measures of credit; one that includes credit issued to the financial sector and one that does not. This distinction in the Irish credit statistics is frequently made – see Lydon et al. (2011) for example.

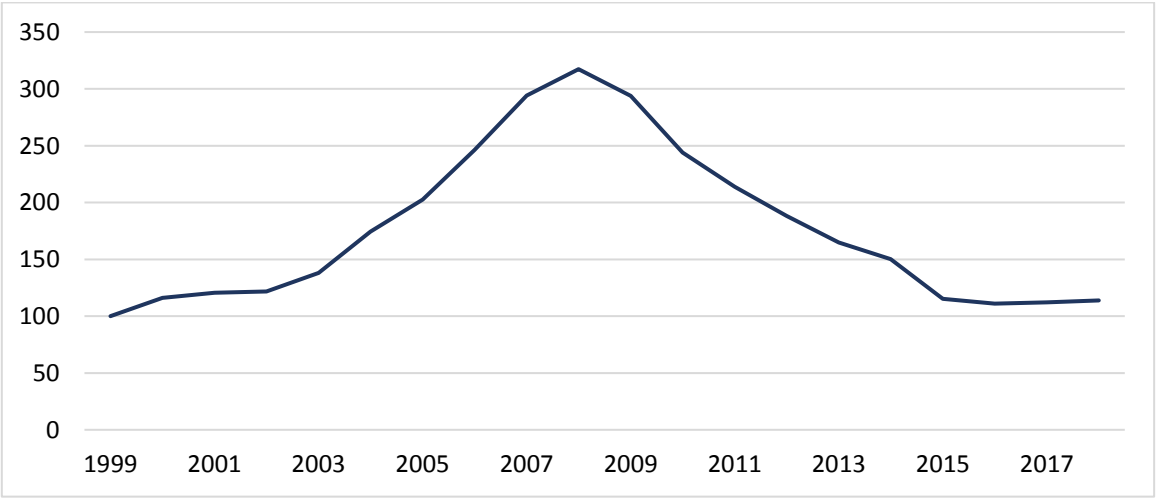
FIGURE 5 RATIO OF CREDIT ISSUED TO THE PRIVATE SECTOR TO GNI* (%)



Sources: Central Bank of Ireland and QEC calculations.

The clear increase in the level of credit extended vis-à-vis the overall size of the economy prior to 2008 is evident. Since 2010, as both the financial and household sector engaged in a significant degree of deleveraging, the ratio of credit has fallen substantially; credit levels are back to the rates seen in the mid-1990s. In the most recent *Commentary* (QEC 2018, Autumn), a new financial stability indicator was presented. Following Avdjiiev et al. (2018) the ratio of total cross-border claims to GNI* is calculated. Much of this lending by foreign institutions would be to the domestic financial sector; therefore, significant movements in cross-border flows could indicate the build-up of imbalances in both the domestic economy and domestic credit institutions. In Figure 6 the total of all foreign country exposures as a ratio of Irish GNI* is presented.

FIGURE 6 RATIO OF TOTAL CROSS-BORDER FLOWS TO THE IRISH ECONOMY (INDEX: 1999 = 100)

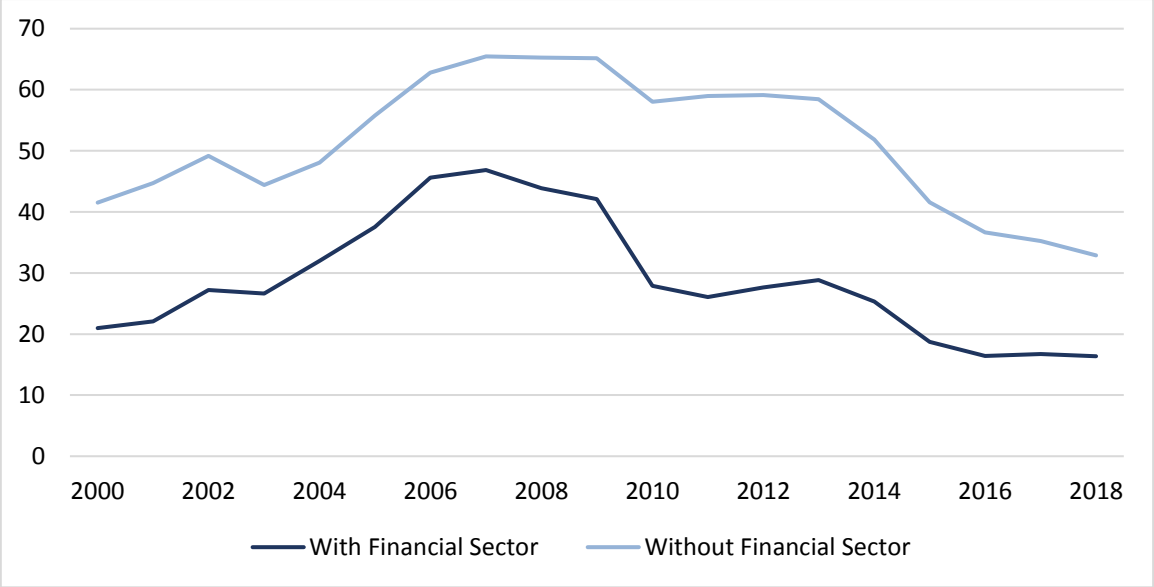


Sources: Central Bank of Ireland and QEC calculations.

The ratio illustrates the profound increase in cross-border lending into the Irish economy in the period prior to 2008. However, as the impact of the financial crisis impacted, the ratio fell significantly before stabilising around 2014. At present, the ratio is back to its pre-2002 level. This indicator provides an insight into where the vulnerabilities in the Irish banking sector originated. The improvements in this ratio suggest the financial stability threat from foreign lending into the Irish economy has substantially reduced.

The sectoral allocation of credit is also an important policy issue. Figure 7 highlights the decline in the ratio of credit extended to the construction and real estate sectors – again figures are presented including and excluding credit levels issued to the financial sector.

FIGURE 7 RATIO OF CREDIT ISSUED TO THE CONSTRUCTION AND REAL ESTATE SECTORS (%)

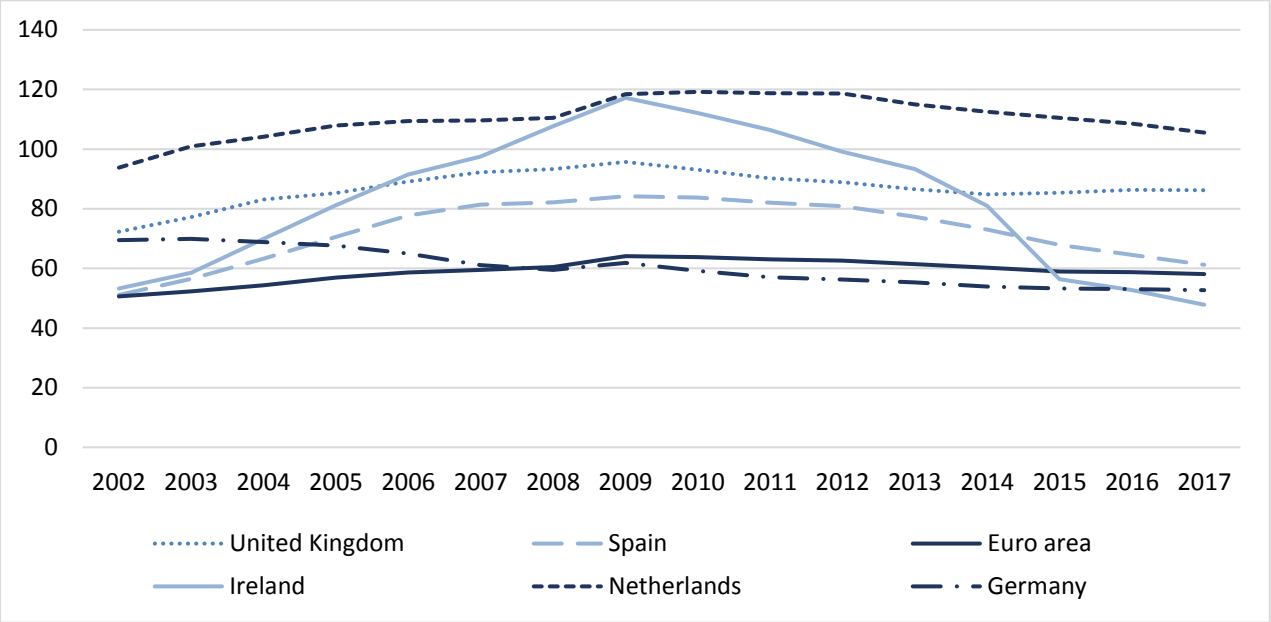


Sources: Central Bank of Ireland and QEC calculations.

In both cases, the ratios are at their lowest rates in 20 years. In Figure 8, we compare the rate of credit to the household sector in Ireland with other select European economies. In particular total credit to the household sector as a percentage of GDP is plotted.

In a similar pattern to Figures 5, 6 and 7, the large increase in Irish household credit prior to 2008 is evident, however again post that period, the rate of credit has now fallen to below the Euro Area average.

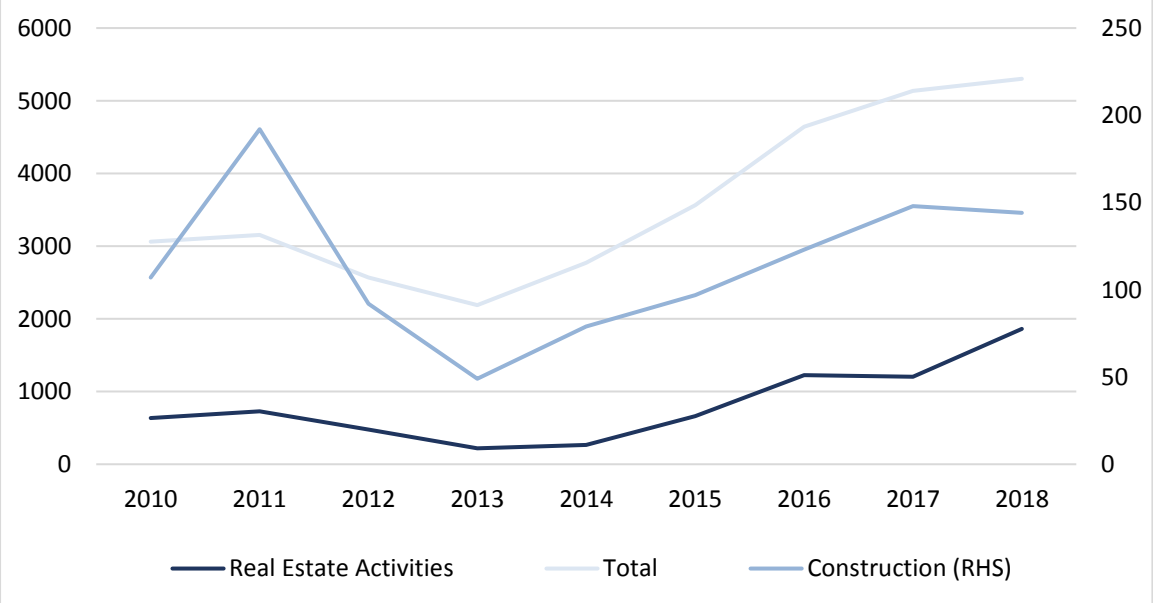
FIGURE 8 HOUSEHOLD CREDIT-TO-GDP FOR SELECT EUROPEAN COUNTRIES (%)



Source: Bank of International Settlements.

To a certain extent, the present low levels of Irish household credit are a function of the significant shock experienced by the domestic economy post-2008. They also represent the stock of credit at a point in time. In that sense, it is useful to examine gross new lending to small and medium sized enterprises in the Irish economy to assess which way the stock is likely to move over the short to medium term. Figure 9 presents the value of new lending for the construction, real estate, and total categories since 2010.

FIGURE 9 GROSS NEW LENDING (€ MILLION) TO SMALL AND MEDIUM SIZED ENTERPRISES



Source: Central Bank of Ireland and QEC calculations.

Since 2014, new lending across the three categories has begun to increase. In particular, the real estate activities category appears to be experiencing significant growth over the past year. This suggests that the stocks of credit in the construction and real estate categories are set to increase over the short to medium term.

4. CORE INFLATION AND WAGES

More generally in the economy, the presence of capacity constraints may be reflected in movements in core inflation; if an economy is operating at or near its potential level and constraints are likely to be binding, then upward pressure may be observed in domestic price levels. In evaluating trends in inflationary pressures, the core CPI is frequently used as it excludes food and energy prices. Both of these components are subject to unpredictable supply shocks that are not easily controlled by monetary or fiscal policy. Consequently, from a policymakers' perspective, the core CPI is often argued to be a better measure of the underlying inflationary pressures. In Figure 10, the Irish core inflation rate is presented.

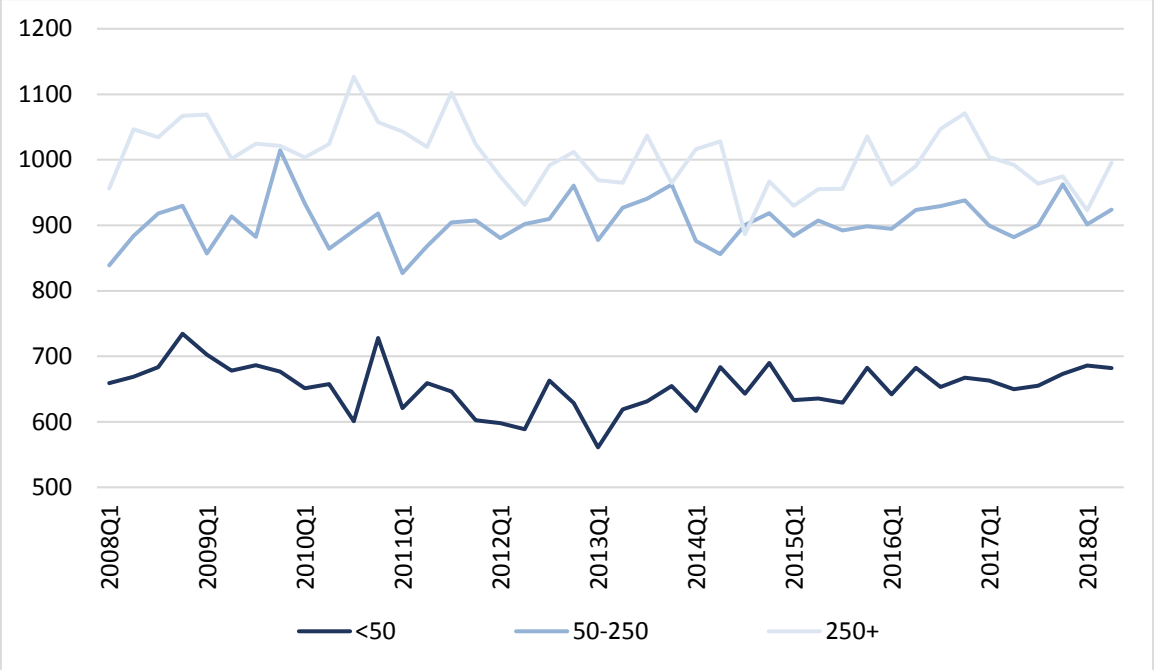
FIGURE 10 ANNUAL IRISH CORE INFLATION RATE (%)

Source: Central Statistics Office.

The Irish economy, like a number of OECD countries, has been experiencing persistently low actual and core inflation over the past number of years. While there are a number of potential reasons for the low core rate (see Sanchez and Kim, 2018, for a recent discussion), it is hard to argue that capacity constraints in the domestic economy are binding when inflation rates are so low on such a persistent basis.

Finally, we examine average weekly earnings in the construction sector to assess if potential wage pressures are emerging. Wage levels are available from 2008 onwards and for three different size categories of firms; those with less than 50 employees, between 50 and 250 employees and for firms with more than 250 employees.

FIGURE 11 AVERAGE WEEKLY EARNINGS IN THE IRISH CONSTRUCTION SECTOR (€)



Source: Central Statistics Office.

Earnings appear to be relatively stable across the period for all size categories. While there appears to be a mild upward trend over the past year, there is little evidence of significant wage inflation across the sector.

5. CONCLUSION

In this note, the capacity of the Irish economy to meet future expected activity in the construction sector has been examined. Given the significant amount of policy attention currently focussing on housing supply, particular attention is paid to the implications for the supply-side of the economy of future housing activity levels. This is examined primarily from the perspective of the labour market and the financial sector.

In terms of an overall assessment, the analysis conducted leads to the following general conclusions:

1. Employment levels in construction compared to those over the past 20 years are still quite low as is the ratio of employment in construction.

2. However, given the present low level of housing supply, employment levels in relative terms are high, suggesting that, in the absence of significant efficiencies, employment levels in construction would have to increase to elevated levels in order for increased housing supply to be provided.

3. It now appears that much of the additional labour required for housing supply and other construction and infrastructural work would have to be secured through inward net migration; most of this additional labour supply would likely come from other European countries or countries which traditionally may not have witnessed much migration to the Irish economy.

4. However, the present high cost of accommodation may act as a disincentive for workers seeking to come and work, particularly in the greater Dublin area.

5. Credit levels in total are still quite low both by historical and international standards, while the amount of credit currently being employed in construction is also low on a relative basis. However, recent trends in the levels of new lending indicate that the stocks are set to increase.

In summary, the Irish economy would not appear, at present, to be unduly constrained in terms of labour market and financial sector developments. An examination of Irish core inflation rates indicates that, like many countries, there is an absence of significant underlying inflationary pressures in the domestic economy.

However, it is clear that a significant increase in housing output, as is official Government policy,[3] will result in employment levels in construction back to levels seen in the run-up to 2007/2008. Such an increase in activity levels will also result in a sizeable increase in the provision of credit by domestic financial institutions (see Duffy et al., 2016, for more on this). In that regard, as noted in previous Commentaries, the presence of macroprudential policy is imperative in preventing the build-up of another domestic credit bubble.

3 See http://rebuildingireland.ie.

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THE FINANCIAL CRISIS AND THE CHANGING PROFILE OF MORTGAGE ARREARS

* Mike Fahy, Conor O'Toole and Rachel Slaymaker[1]

1. INTRODUCTION

Understanding which households go into mortgage arrears during both boom and bust periods in Ireland is of critical importance to ensure suitable policies are deployed to safeguard future financial stability. Many of the difficulties in Ireland arose from the loosening of underwriting standards by financial institutions. This led to excessive household leverage ratios and provided households with limited buffers with which to absorb shocks (McCarthy and McQuinn, 2017; Lydon and McCann, 2017). The joint effects of labour market difficulties and large falls in house prices led to a situation where nearly one-in-five mortgage loans was in arrears at the height of the crisis (McCarthy, 2014).

To shed light on the drivers of the arrears crisis, a series of studies have explored the relative effects of equity shocks and affordability shocks on Irish mortgage holders. Using loan-level data from the Central Bank of Ireland, Kelly and O'Malley (2016) and Lydon and McCarthy (2013) estimate double-trigger type models which find a role for both the loan-to-value ratio and the unemployment rate in driving mortgage default. These studies, and notable others such as Gaffney et al. (2014), formed the basis for the mortgage stress test framework for loan-loss forecasting that the Central Bank now uses. Recent research by O'Malley (2018) also provides judicial and legislative motives for default.

One challenge with existing datasets has been a lack of up-to-date information on borrower income which is unavailable in loan-level data. To address this gap in the literature, McCarthy (2014) undertook a specific survey to capture current income information for mortgage holders and link it back to the loan data. This research found that labour shocks and fragile employment explained a large share of arrears cases in Ireland.

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While these studies have provided a very thorough explanation of the arrears crisis since 2010, no research has explored the difference in the type of household that went into arrears during the systemic crisis relative to the pre-crisis period. This is mainly due to the lack of loan-level data for the pre-crisis period. One notable exception is McCarthy and McQuinn (2011) who focus on income in the period just before the severe crisis period 2009/2010. However, documentation of the change in mortgage arrears over the crisis period in terms of household composition and other characteristics is still missing.

To address this gap in the literature, in this Research Note, we build on the existing work by exploring whether the composition of borrowers who went into arrears during the height of the financial crisis was different from those who were in arrears in the pre-crisis period. We draw on the Irish Survey of Income and Living Conditions (SILC) which began in 2003 and is conducted by the Central Statistics Office (CSO) on an annual basis. Most importantly, this dataset contains a wealth of information on both mortgage debt and socio-economic characteristics, enabling us to explore which types of household experienced mortgage distress both before and during the crisis.

There are good economic reasons to expect *a priori* that the types of household who experience mortgage repayment distress in normal economic times may differ from those who are affected during a systemic crisis following an extensive credit boom. For example, in a more stable economic environment, re-employment probabilities following a job loss are likely to be greater. Individuals most likely to experience arrears problems during normal economic times may be those whose skill profile does not fit the labour demanded, those who are in low paid or fragile employment, and those suffering from adverse personal circumstances such as ill health or family problems.

In a systemic crisis, where leverage ratios have increased considerably in the preceding period, labour shocks may also permeate to groups in the economy that would not be affected in normal times. This may give rise to a very different profile of borrowers who enter arrears. Understanding which households will likely experience distress across the economic cycle is critical to designing structural policies to moderate loan arrears in good and bad times.

We find that in the pre-crisis period, those households in mortgage arrears were more likely to have suffered very severe economic, social or other personal difficulties including ill health or divorce or separation. Arrears cases were also more likely to come from the lower end of the income distribution. Housing equity considerations (negative equity) had no bearing on default as house prices were rising. In contrast, during the systemic crisis, equity considerations played a

role and defaults increased to a greater extent amongst higher income groups and those without health or other personal difficulties.

From a policy perspective, it is important to understand what the drivers of default will be in non-crisis times. As the Irish economy recovers, it is likely that there will be new default cases. However, the reasons for these may be more down to unanticipated personal difficulties rather than broad equity or labour market shocks. This may require a different policy response for these households.

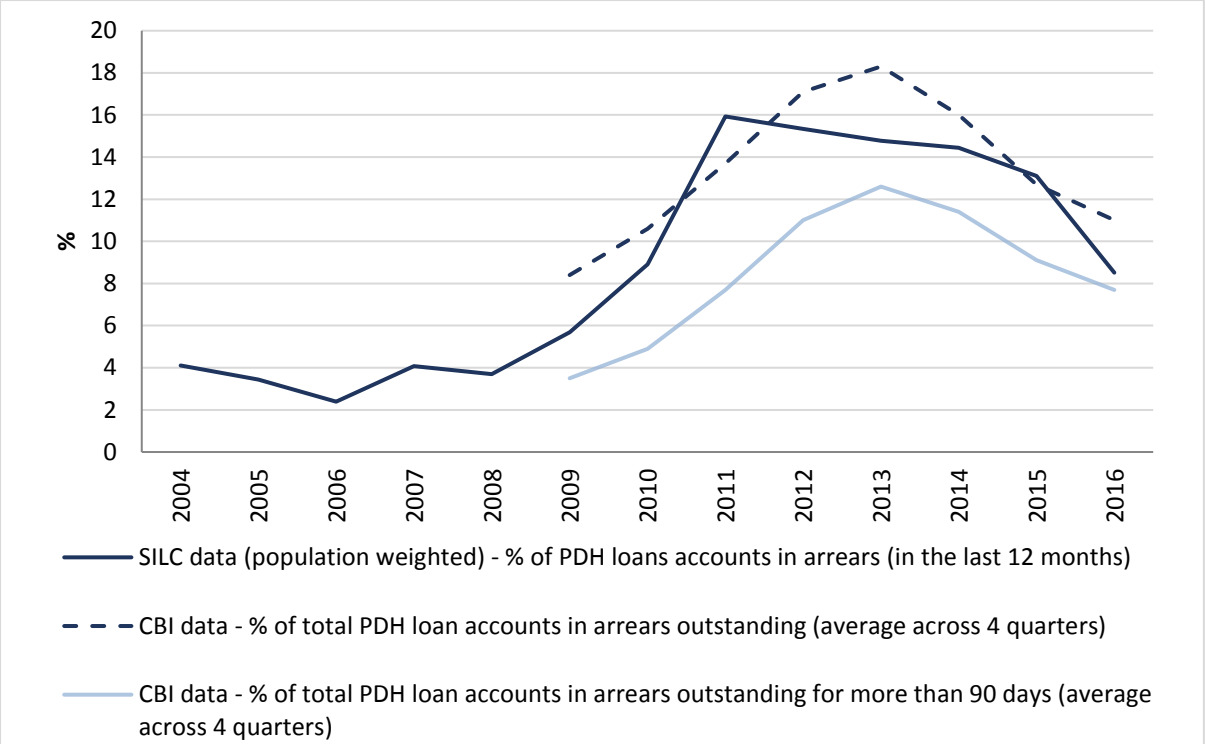
This Note is structured as follows. Section 2 describes the data used in the analysis. Section 3 profiles the types of households in arrears before and during the financial crisis. Section 4 considers whether financial distress for households goes beyond mortgage arrears and also affects their repayment of other loan items and bills and Section 5 concludes.

2. BACKGROUND AND DATA

To understand the household types which typically fall into mortgage arrears we draw on the Survey of Income and Living Conditions (SILC). The SILC provides a comprehensive micro-level dataset surveying income and living conditions across different types of households (see CSO, 2016). As a survey of private households, it is voluntary and is carried out under EU legislation. In Ireland, the survey is conducted on an annual basis by the CSO and, while it is primarily focused on collecting information used to derive indicators of poverty, deprivation and social exclusion, the survey also contains a significant amount of information for each household on home ownership, details of mortgage debt, monthly mortgage instalments and arrears. In particular, we use information on whether households went into mortgage arrears in the last 12 months as our indicator of mortgage arrears.

While previous work (Kelly and O'Malley, 2016; Lydon and McCarthy, 2013) has used loan-level data to document the extent of arrears in Ireland, these papers focus exclusively on the post-crisis period. Furthermore, as these are loan-level data, they do not contain household level characteristics. Using SILC data from 2004-2013 therefore provides us with a unique opportunity to examine the incidence of arrears across different types of households and to explore whether the composition of borrowers who were in arrears during the height of the financial crisis was different from those who went into arrears in the pre-crisis period.

FIGURE 1 PRIVATE DWELLING HOMES MORTGAGE ARREARS IN IRELAND: A COMPARISON BETWEEN SILC AND CBI DATA

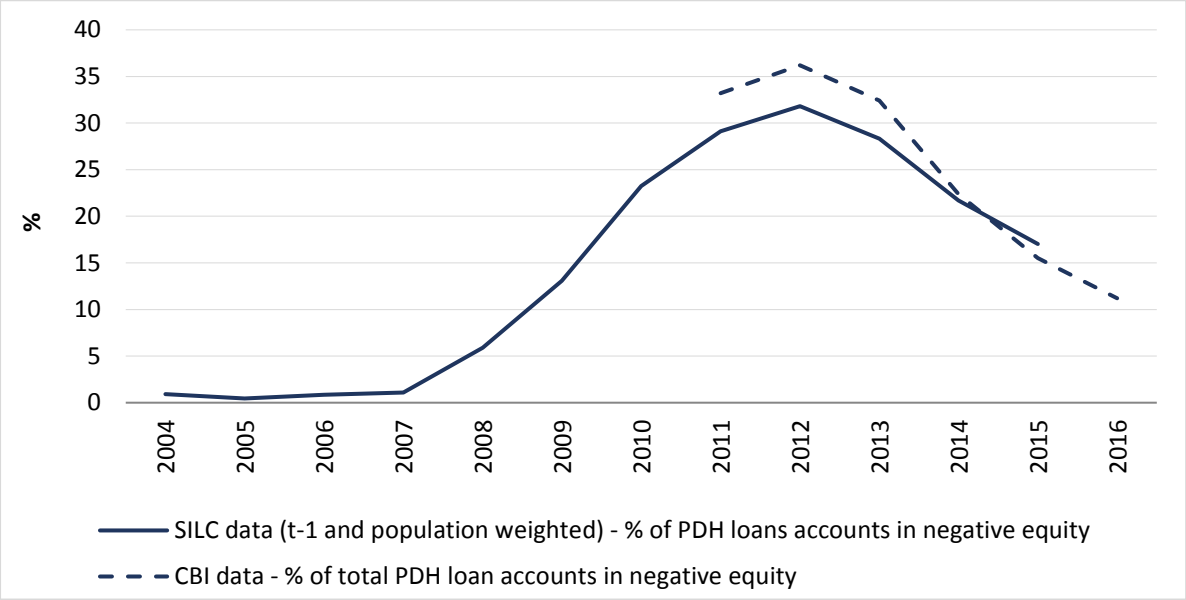


Source: Central Statistics Office EU-SILC data, and Central Bank of Ireland, Residential Mortgage Arrears data.

Before we use the SILC data for any analysis, we first want to examine how well the arrears information correlates with the equivalent Central Bank of Ireland data used in existing studies. In Figure 1 we compare the proportion of households in mortgage arrears in the SILC data[2] to both the Central Bank of Ireland's private dwelling homes (PDH) total arrears outstanding data series and the CBI's over 90 days outstanding data series. The trend in the SILC mortgage arrears data is very similar to the trends in both the CBI's over 90 days outstanding data series and the CBI's PDH total arrears outstanding series. In fact from 2009 to 2016, we find that there is an 82 per cent correlation between the CBI's 90 days in arrears data series and the SILC arrears data, and an 88 per cent correlation between the CBI's total outstanding arrears series and the SILC arrears data.

[2] Information on mortgages in the SILC data refers only to private dwelling homes; it does not contain information on buy-to-let or investment properties or on second homes.

FIGURE 2 NEGATIVE EQUITY: A COMPARISON BETWEEN SILC AND CBI DATA



Source: Central Statistics Office EU-SILC data, and Central Bank of Ireland data.

In Figure 2 we compare the proportion of households in negative equity in the SILC data to the equivalent Central Bank of Ireland figures.[3] We can see from Figure 2 that the correlation between the two series is very high, with a correlation coefficient of 99 per cent during the period 2011-2014 for which we have data for both series.

The strong correlations between the SILC and CBI data, both in terms of the share of households in arrears and the share of households in negative equity, provides a solid empirical basis for using the SILC data to analyse and profile the demographic and other household level characteristics behind mortgage arrears in Ireland. We can, thus, provide new additional insights into the evolution of arrears over time in Ireland. Our particular focus is on examining the periods before which Central Bank data are available.

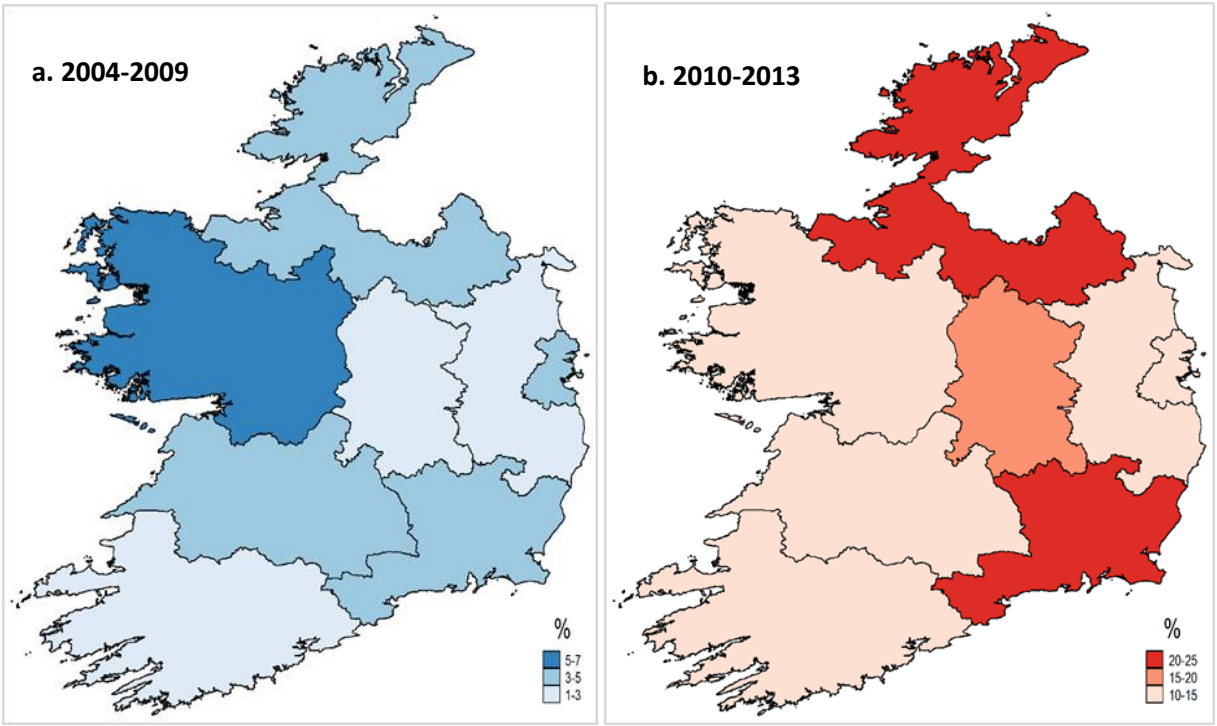
In Figure 3 we plot the regional variation in mortgage arrears during non-crisis and crisis years. For the purposes of our analysis throughout this Note, we define the non-crisis period as 2004-2009 and the crisis period as 2010-2013. While the financial crisis began in 2008, in Ireland the mortgage arrears crisis really began to take hold from 2010 onwards. Prior to the crisis there was no significant geographical variation in the proportion of households in arrears, with the arrears

[3] We compare the SILC data with the CBI series of the previous year because the CBI negative equity data are reported at the end of Q4 each year, whereas in SILC, respondents are interviewed throughout the year and asked to report on the previous 12 months. E.g. we compare CBI Q4 2011 with SILC 2012.

rate varying between 1 per cent to 4.5 per cent for all regions. An exception to this trend is seen in the Western region, which had a slightly higher rate of 6.7 per cent (see Figure 3a).

In contrast, in Figure 3b we observe significant geographical variation in the arrears rate during the crisis period (2010-2013). Although we observe a higher arrears rate in all regions, we note the rate was substantially higher in the Border and South-East regions where just over one-fifth of households were in arrears, and the Midland region with just under 20 per cent of households. These areas, in particular, saw a huge construction boom in the early 2000s, with house prices increasing substantially relative to incomes. The economies in these areas were also heavily reliant on domestic, non-traded products and firms, meaning that these areas were particularly vulnerable to large unemployment and income shocks during the crisis.

FIGURE 3 SHARE OF HOUSEHOLDS IN MORTGAGE ARREARS BY REGION



Source: ESRI and Department of Finance analysis of EU-SILC data.

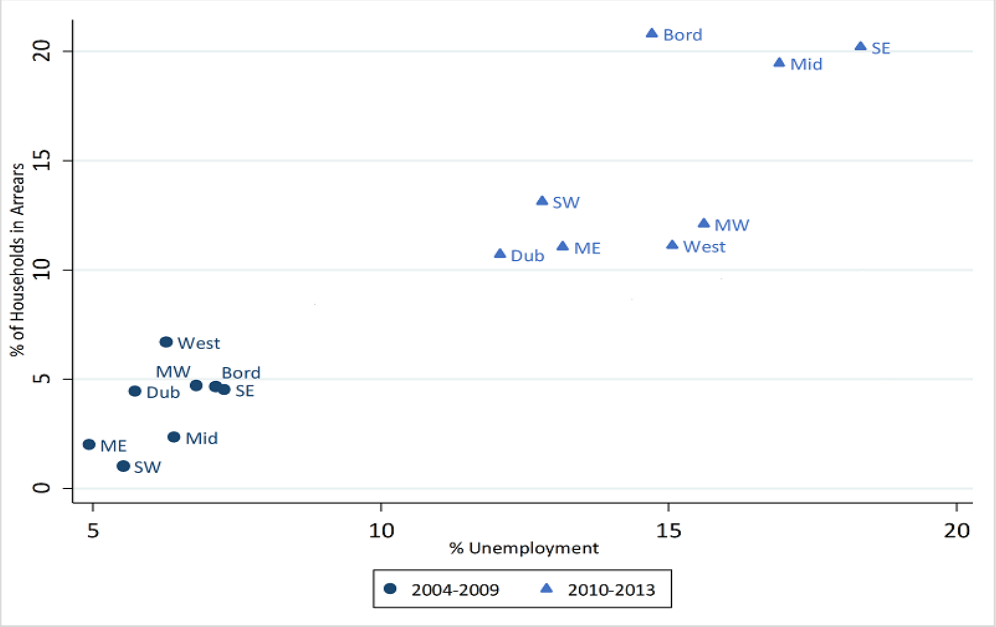
In Figure 4 we explore the correlation in the regional patterns of both unemployment and negative equity in Ireland, as unemployment and equity shocks are shown to be two important drivers of arrears in the existing literature. Figure 4a reinforces the finding that between 2010 and 2013 the Midland, Border and South-East regions had much higher levels of mortgage arrears, ranging from 19 per cent to 21 per cent, compared to 10 per cent to 13 per cent in other regions. During this period, the share of households in negative equity was

particularly high in the Midland and to a lesser extent in the Border region. Figure 4b firstly shows the large increases in unemployment in all regions between the pre-crisis and crisis periods. Secondly it shows that in the South-East, unemployment, in particular, was high between 2010 and 2013, at approximately 18 per cent. These correlations suggest that the reasons why households fall into arrears may differ across regions.

FIGURE 4 THE RELATIONSHIP BETWEEN ARREARS, NEGATIVE EQUITY AND UNEMPLOYMENT BY REGION

a) Negative Equity 2010-2013

b) Unemployment 2004-2009 and 2010-2013



Source: ESRI and Department of Finance analysis of EU-SILC data.

3. PROFILING ARREARS ACROSS HOUSEHOLDS BEFORE AND DURING THE CRISIS

In this section we explore whether the composition of borrowers who were in arrears during the height of the financial crisis was different from those who were in arrears in the pre-crisis period. Table 1 presents the predicted probability that a household is in arrears for a series of household characteristics in the non-crisis period (2004-2009) and crisis period (2010-2013), conditional on controlling for other household characteristics.[4] Extensive mortgage modification programmes came into operation in Ireland after 2013 (see Danne and McGuinness, 2016; and McCann, 2017). As these modification programmes are not captured in the SILC data, we exclude households in the 2014-2016 waves for the remainder of our analysis.[5] This is due to the fact that while these households may no longer be in arrears due to the modifications, they may still be in significant financial distress. In any case, our primary focus in this Note is to explore the differences between the composition of borrowers in arrears prior to and during the crisis, for which we do not require data from these more recent waves.

Focusing first on the non-crisis years, it is clear that higher predicted probabilities of arrears are associated with particular high risk groups, such as those without third-level education, households in the lowest 40 per cent of the income distribution and especially single adult households with children. In addition, we can see that households who suffered an employment, marital or health shock were more likely to be in arrears. Between 2004-2009, controlling for other characteristics, unemployed households had an 11 per cent likelihood of being in mortgage arrears, along with 4 per cent likelihood for those who had suffered divorce, separation or became widowed, and a 15 per cent chance for households who reported experiencing bad health.

Turning now to the crisis years, from the second column of Table 1 it is clear that the likelihood of being in arrears increased for all household types. However, from the final column of Table 1 we observe much larger relative increases in arrears for households with substantially different characteristics. More precisely, the number of employed households in arrears increased five-fold, while younger, healthier, and better educated households saw the largest rise in arrears, with a seven-fold increase for households with third-level education.

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4 We estimate probit regressions and report the predicted probabilities that a household of that characteristic is in arrears, holding the other variables at their means.

5 The SILC data do not capture modifications such as arrears capitalisations and term extensions.

Finally, as shown in the final column of Table 1, we observe an almost three-fold rise in the arrears rate for households with a loan-to-value ratio greater than 80 or, put differently, we see the importance of the equity channel coming into play in the crisis period. Exploring this in more detail, in Figure 5 we see that prior to 2009 virtually no households were in negative equity. This corresponds with our findings in Table 1 that households in arrears in the non-crisis period tended to be those who had suffered an adverse employment, marital or health shock. After 2009 there was a sharp rise in the share of households in negative equity, and this was much greater for households in arrears, peaking at 45-46 per cent between 2011 and 2013. Households in negative equity may be more likely to go into arrears for several reasons. First, a household may decide to stop making mortgage payments when the value of the debt is greater than the value of the property, a so-called strategic default. Second, a household faced with both a negative equity and an affordability shock may be unable to make mortgage payments and unable to sell the property, forcing them into arrears.

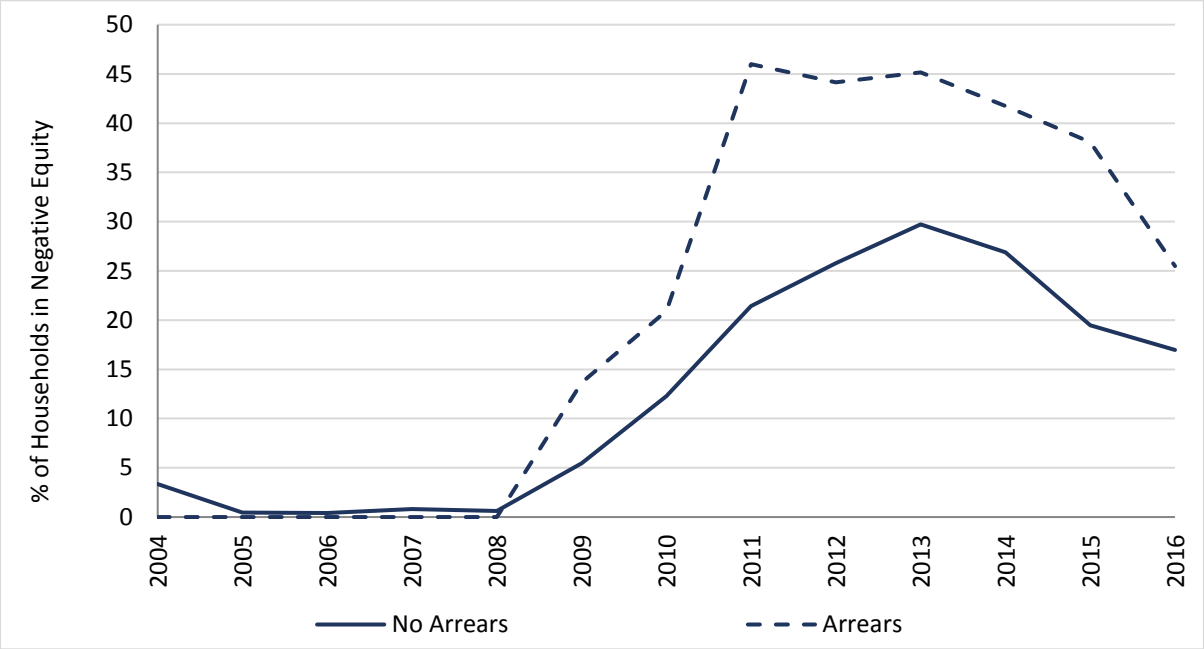
TABLE 1 MORTGAGE ARREARS BY HOUSEHOLD SOCIO-ECONOMIC CHARACTERISTICS 2004-2013

Characteristic	Predicted Probability of Arrears 2004-2009	Predicted Probability of Arrears 2010-2013	Percentage Point Difference	Percentage Change (%)
Age				
18-35	0.016	0.135	0.119	743.8
36-50	0.018	0.083	0.065	361.1
51+	0.020	0.105	0.085	425.0
Marital Status				
Married	0.015	0.090	0.075	500.0
Single	0.021	0.109	0.088	419.0
Divorced/Separated/Widowed	0.040	0.169	0.129	322.5
Employment Status				
Employed	0.014	0.086	0.072	514.3
Unemployed	0.108	0.217	0.109	100.9
Other	0.031	0.128	0.097	312.9
Education				
Primary	0.027	0.185	0.158	585.2
Secondary	0.025	0.108	0.083	332.0
Third-level	0.011	0.089	0.078	709.1
Household Composition				
1 adult, no children	0.012	0.048	0.036	300.0
1 adult, with children	0.087	0.105	0.018	20.7
2 adults, no children	0.011	0.069	0.058	527.3
2 adults, with children	0.023	0.140	0.117	508.7
Health Status				
Very good/good	0.016	0.091	0.075	468.8
Fair	0.045	0.189	0.144	320.0
Bad/very bad	0.151	0.306	0.155	102.6
Income Distribution				
<p(40)	0.044	0.278	0.234	531.8
p(40)-p(60)	0.030	0.153	0.123	410.0
>p(60)	0.013	0.069	0.056	430.8
Unconditional Proportion of Households in Arrears (%)	0.032	0.128	0.096	300.0
Unconditional Proportion of Households with LTV>80 (%)	0.039	0.148	0.109	279.5
No. Obs.	**6,646**	**4,335**		

Source: ESRI and Department of Finance analysis of EU-SILC data.

Note: For Columns 1 and 2 we estimate probit regressions and report the predicted probability of arrears for each household characteristic, while holding the other variables at their means. All coefficients are statistically significant at the 1 per cent level, except the coefficient on '1 adult, no children' in the 2004-2009 period which is significant at the 5 per cent level. In addition, in the last two rows we present the unconditional proportion, i.e. the simple mean, of households in arrears and with an LTV>80 as additional information. The mean proportion of households with an LTV>80 is based on a smaller sample (4,055 and 2,966 observations respectively) due to missing data.

FIGURE 5 THE RELATIONSHIP BETWEEN NEGATIVE EQUITY AND ARREARS



Source: ESRI and Department of Finance analysis of EU-SILC data

Note: In the period prior to 2008, the actual level of negative equity in Ireland was (near) zero due to rising house prices. We therefore have (near) zero values for these years in our data. Due to the small number of households in arrears in certain years prior to 2009, these observations are simply reported as 0 for 2004-2008.

4. MORTGAGE ARREARS AND BROADER HOUSEHOLD FINANCIAL DISTRESS

In addition to examining the differences between the types of households going into arrears in the non-crisis and crisis periods, one additional question of interest is to what extent distress in the mortgage market is accompanied by broader household financial difficulties. In addition to the basic socio-economic characteristics presented so far, the SILC data also contain a series of information on broader household financial distress. This provides us with the unique opportunity to assess the extent to which distress in the mortgage market was accompanied by broader household financial distress.

In Table 2 we can see that in the crisis period, controlling for other characteristics, more than one-third of households in arrears on their utility bills and 45 per cent of those in consumer loan arrears were also in mortgage arrears. Furthermore, one-fifth of households having difficulty or great difficulty making ends meet, 14 per cent of households unable to save income regularly, and 17 per cent of households who were unable to take a family holiday, were in arrears in the crisis period. These findings are significant as they clearly show the existence of additional broader household financial distress during the crisis period, over and above the issue of being in mortgage arrears. However, from the final column of Table 2, it is also clear that we observe larger relative increases in arrears for

households not in broader financial difficulties. This is consistent with our findings in Table 1 that during the systemic crisis, the risk of falling into arrears spread throughout society.

TABLE 2 HOUSEHOLDS IN MORTGAGE ARREARS 2004-2013 – BROADER FINANCIAL DISTRESS

Characteristic	Predicted Probability of Arrears 2004-2009	Predicted Probability of Arrears 2010-2013	Difference	Percentage Change (%)
Utilities Arrears in last 12 months				
Yes	0.122	0.349	0.227	186.1
No	0.007	0.096	0.089	1,271.4
Consumer Loan Arrears in last 12 months				
Yes	0.061	0.447	0.386	632.8
No	0.007	0.104	0.097	1,385.7
Can Regularly Save Some Income				
Yes	0.006	0.114	0.108	1,800.0
No	0.011	0.141	0.13	1,181.8
Ability to Make Ends Meet				
With great difficulty/difficulty	0.024	0.19	0.166	691.7
With some difficulty	0.008	0.100	0.092	1,150.0
Fairly easily/easily	0.005	0.101	0.096	1,920.0
Very easily	0.004	0.110	0.106	2,650.0
Ability to take Annual Family Holiday				
Yes	0.007	0.112	0.105	1,500.0
No	0.017	0.167	0.15	882.4
No. Obs.	**6,645**	**4,333**		

Source: ESRI and Department of Finance analysis of EU-SILC data.
Note: For Columns 1 and 2 we estimate probit regressions and report the predicted probability of arrears for each household characteristic, while holding the other variables at their means. These regressions also include the household characteristics shown in Table 1. All coefficients are statistically significant at the 1 per cent level, except the coefficient on 'yes-consumer loan arrears' in the 2004-2009 period which is significant at the 5 per cent level, and on 'very easily able to make ends meet' in the 2004-2009 period which is not statistically significant.

5. CONCLUSION

In this Research Note we provide an examination of the socio-economic characteristics of borrowers in mortgage arrears in Ireland. More specifically, we explore the change in composition of these borrowers between those in arrears in the pre-crisis years and those who went into arrears during the financial crisis.

In Section 2 we show that the SILC data are highly correlated with the CBI data on Irish mortgage arrears, and therefore provide a suitable dataset with which to analyse and profile the demographic and other household level characteristics behind mortgage arrears in Ireland over the period 2004-2013. From a regional

perspective, we present descriptive evidence showing that prior to the crisis there was no significant geographical variation in the proportion of households in arrears; however, in the crisis years we show mortgage arrears rates were significantly higher in the Border, Midland and South-East regions. Taking a closer look at the equity and unemployment channels which act as a catalyst for a household falling into arrears, we show that the relative importance of these channels differs across regions.

In Section 3 we find that prior to the crisis, households in mortgage arrears were typically those who had suffered unemployment, marital and health shocks, as well as particular risk groups such as lone parents. However, during the systemic crisis, the risk of falling into arrears spread throughout society, and in fact healthier, younger, more highly educated, employed households saw the largest increases in incidence of arrears.

Finally, in Section 4 we show that households in mortgage arrears also suffer from broader financial distress. In particular, households in arrears on utility bills and consumer loans have a much higher likelihood of also being in mortgage arrears. However, during the systemic crisis, the risk of falling into arrears spread throughout society, and in fact households not in consumer loan or hire purchase arrears, as well as those able to make ends meet, saw the largest increases in incidence of arrears.

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Special Article

BUDGET 2019: TAX AND WELFARE CHANGES

Barra Roantree, Maxime Bercholz, Karina Doorley, Claire Keane, Mark Regan and John Walsh[1]

ABSTRACT

In his budget delivered to the Dáil on 9 October, the Minister for Finance, Public Expenditure and Reform announced an increase in General Government expenditure for 2019 of €4.2 billion, an increase of 5.1 per cent from its 2018 level. This is to be financed by a small General Government deficit of €75 million.

The majority of this additional expenditure was allocated to capital investment and public services, but the government also announced a number of changes to the tax and social welfare system in 2019: €711 million in tax increases, €370 million in tax cuts and €362 million in increased transfers. However, this excludes discretionary tax increases announced in the *Summer Economic Statement* which are expected to raise a further €600 million.

This article describes and assesses these reforms, first looking at the main taxation measures announced in the budget, before going on to examine the social welfare measures. It then considers the effect of these measures as a whole on the incomes of households using representative survey data and SWITCH, the ESRI's tax and benefit microsimulation model. The article concludes with some brief reflections on some of the fiscal challenges facing the government in the coming years.

2. INTRODUCTION

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[1] We are grateful to the CSO for facilitating access to the Survey of Income and Living Conditions (SILC) Research Microdata File used to construct the database for the SWITCH tax-benefit model, and to the Irish Social Science Data Archive for facilitating access to the Household Budget Survey. Funding from the ESRI's Tax, Welfare and Pensions Research Programme (supported by the Departments of Public Expenditure and Reform, Employment Affairs and Social Protection, Health, Children and Youth Affairs and Finance) is gratefully acknowledged. We thank an anonymous referee for their comments.

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TAXATION MEASURES

Table 1 displays the revenue yield or cost of the tax policy measures announced in the budget, as estimated by the Department of Finance for 2019 in its 'Tax Policy Changes' document.[2] The single largest revenue raising measure listed was the increase in VAT on most goods currently subject to the 9 per cent rate, expected to yield €466 million. The next largest measures are increases to excise duties on cigarettes and gambling, expected to raise €101 million, and an increase in the National Training Fund levy from 0.8 per cent to 0.9 per cent of employers' payrolls, expected to raise €77 million in 2019. The most expensive tax cuts were those to income tax, costing a combined €196 million, and reductions in the Universal Social Charge (USC), costing €105 million. This section describes these changes, assessing their rationale and potential effects.

The tax cut affecting most individuals is the reduction in the main 4.75 per cent rate of USC to 4.5 per cent, and the increase in the threshold at which it begins to apply. Approximately 1.7 million individuals with incomes above €19,372 per year will pay less USC as a result of the change, with an average gain of €76 per year among those affected. The stated rationale for increasing the threshold was to ensure someone working 'full-time' at the adult minimum wage does not face the main rate of USC on an additional hour of work. However, the increase of €502 per year merely means that from January, someone on the minimum wage of €9.80 per hour will face this rate if working more than 39 hours per week, rather than 38.

[2] See www.budget.gov.ie/Budgets/2019/Documents/2.%20Budget%202019%20Tax%20Policy%20Changes.pdf

Given evidence on the responsiveness of lower paid workers in Ireland (Hargaden, 2018), it is unlikely that facing a 2 percentage point lower rate of USC on earnings between €19,372 and €19,874 will have a substantial impact on the number of hours employees choose to work. More likely to affect this is a cliff-edge, or 'notch', that exists in the USC schedule at €13,000 per year, where the entirety of individuals' earnings become liable to USC. This means low-paid part-time workers can be left slightly worse off by a pay increase, or working more hours.

A similar cliff-edge, or 'notch', exists in the Pay Related Social Insurance (PRSI) schedule. Most individuals become liable to employee PRSI (4 per cent) on the entirety of their earnings at €352 per week, and to the main (8.7 per cent) and higher (10.95 per cent) rates of employer PRSI at €38 and €386 per week respectively. This creates a strong disincentive to increase earnings above these thresholds, as it results in both lower take-home pay and higher employer cost.

TABLE 1 2019 YIELD OR COST OF TAX MEASURES ANNOUNCED IN BUDGET 2019

	€ million
Changes to USC rates and bands	-105
Income tax measures	
Increase to the standard rate band	-138
Increase to the home carer tax credit	-21
Increase to the earned income credit	-27
Increase in the deductibility of mortgage interest for landlords	-10
Expansion of KEEP share-based remuneration programme	0
Changes to excise duties	
50c increase in duty on pack of cigarettes	59.4
Minimum excise duty on cigarettes	2.4
Increase in betting duty	39.5
VRT	
Diesel surcharge	25
Extension of relief for hybrid & plug-ins	-16
Extension of 0% BIK rate for electrics	-3
Agritaxation	
Income averaging	-1
Stock relief	-8
VAT	
Increase in 9% rate	466
Reduction in rate on e-publications and e-papers	-6
CAT increase group a threshold	-6.9
Employer PAYE compliance implementation	50
Corporation tax	
Film relief	-2
3-year start up relief	-5.7
Capital allowances for employer provided fitness & childcare	-1.9
Accelerated capital allowances for gas propelled vehicles & refuelling equipment	-1
Exit tax	0
CFC rules	0
Stamp duty: extension young trained farmers relief	-15
Employer PRSI threshold increase	-2.5
National Training Fund levy increase	69
Total	341

Source: Department of Finance, 'Budget 2019 Tax Policy Changes', available at www.budget.gov.ie/Budgets/2019/2019.aspx
Note: Cost or yield in 2019. Full-year effect different in many cases. Excludes revenue raised from holding tax credits and thresholds fixed in cash terms, as discussed below.

The budget announced an increase to the latter employer PRSI threshold on the recommendation of the Low Pay Commission, to reduce the likelihood that someone working full-time on the minimum wage will face these sharp disincentives. However, the announced increase is quite small, and still means that those employing workers for more than 39 hours a week at the minimum wage face a jump in employer cost of €451 per year at the threshold, disincentivising them from offering such employees additional hours of work or pay rises.

The government also announced an increase in the rate at which the National Training Fund Levy (NTFL) is charged against employees earnings, from 0.8 per cent to 0.9 per cent. The NTFL was introduced in 2000, replacing the previous Apprentice Levy, and is collected through the same payroll system – and levied on the same base – as employer PRSI. Despite being earmarked for expenditure on training and education programmes, the NTFL is best thought of as economically equivalent to employer PRSI.[3]

Alongside these small reductions in USC and PRSI, the government also announced an increase to the Earned Income Tax Credit self-employed workers can claim from €1,150 to €1,350, at a cost of €27 million in 2019 and €48 million in the longer run. This reduces – but does not eliminate – the less favourable income tax treatment of the self-employed, who will also continue to face a 3 per cent USC surcharge on incomes over €100,000 not levied on employees.

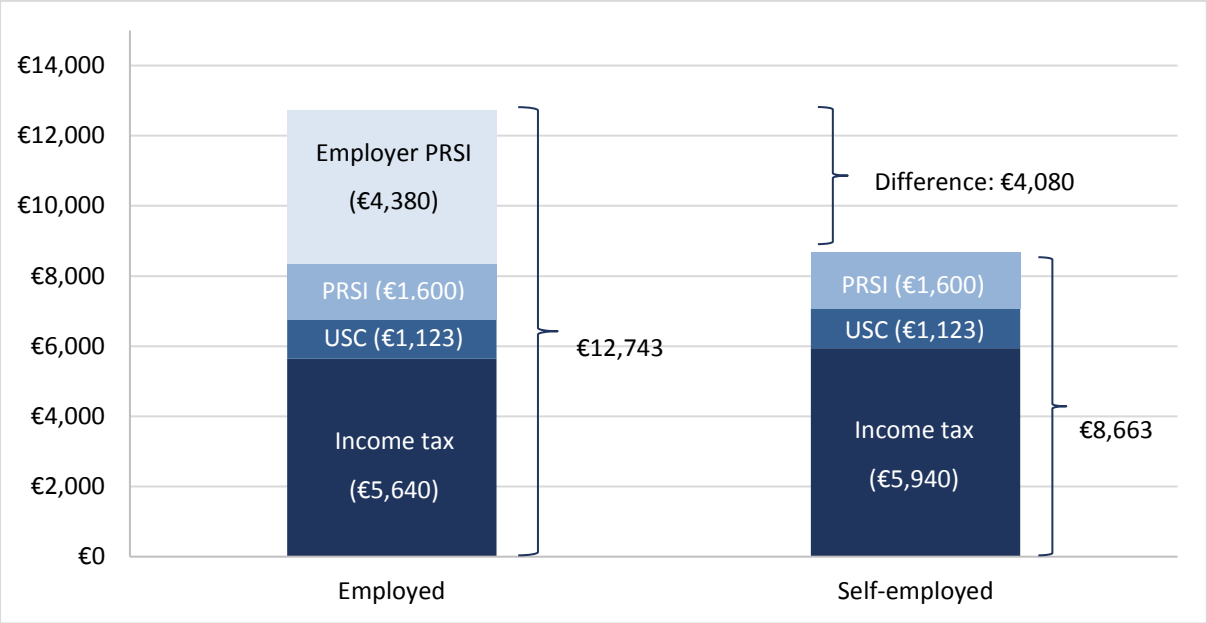
However, economic activity carried out via self-employment is subject to less PRSI than that carried out through employment. This is because while the main Class A (employee) and Class S (self-employed) rates of PRSI are the same (4 per cent), employers are required to make PRSI contributions of between 8.6 per cent and 10.95 per cent on behalf of their employees. This can create a substantial gap in the total tax burden associated with each form of employment.

For example, Figure 1 shows that a gross employee salary of €40,000 is associated with €12,743 in tax overall: the sum of €5,640 in income tax, €1,123 in USC, and €5,980 in PRSI (€1,600 in employee PRSI and €4,380 in employer PRSI). A similar self-employment income is associated with €8,663 in tax overall: the sum of €5,940 in income tax, €1,123 in USC but only €1,600 of PRSI. Such a gap in the

[3] The National Training Fund has run a surplus in each year since 2015, and has previously been topped up from general taxation when there was a financial shortfall: it is unclear why one would want to link the amount spent on education and training programmes to the revenue raised from a specific tax, especially one likely to decline during a recession when education and training programmes may have particularly beneficial effects.

overall tax burden across legal forms may distort individuals' choices, leading some people to operate as self-employed when they would otherwise prefer to be employed.[4]

FIGURE 1 TOTAL INCOME TAX, USC AND PRSI ASSOCIATED WITH ANNUAL INCOME OF €40,000



Source: Authors' calculations.
Notes: Assumes single individual with no income tax deductions beyond the standard Personal and PAYE/Earned Income tax credit, liable to Class A employee and employer PRSI if employed, and Class S PRSI if self-employed. Employer PRSI includes National Training Fund Levy of 0.9 per cent.

Budget 2019 also announced an increase to the Home Carer's Tax Credit, from €1,200 to €1,500. This is an income tax credit given to married couples or civil partners who are jointly assessed for income tax purposes, where one adult has income under €7,200 and looks after a dependant in the home. Combined with the nominal freeze to personal and employee tax credits (discussed below), the change increases the incentive for lower income couples with children or adult dependants to have just one adult in work compared to two. It is unclear whether this is the intended aim of the policy, given the Government has previously indicated their desire to reduce the barriers faced by mothers working outside the home.[5]

4 Adam et al. (2017) assess the rationale for reduced rates of tax on the self-employed.

5 See, for example, the speech given by Taoiseach Leo Varadkar to the Congress of Women's Caucuses in Sept. 2018, https://www.taoiseach.gov.ie/eng/News/Taoiseach's_Speeches/Speech_of_An_Taoiseach_Leo_Varadkar_T_D_Congress_of_Women%E2%80%99s_Caucuses_10_September_2018.html

Higher income dual-earner couples, by contrast, are the group who gain most from the €750 increase in the standard rate cut-off, above which incomes are subject to the higher 40 per cent rate of income tax. This measure increases the point at which single adults face the higher rate to €35,300, with jointly assessed one-earner couples seeing this rise to €44,300. Jointly assessed two-earner couples with sufficiently high incomes, however, can benefit twice, and see the point at which they start to pay the higher threshold increase up to a maximum of €70,600. Overall, the change will benefit the approximately one-quarter of families that contain a higher rate taxpayer, at a cost of €140 million in 2019 (and €160 million in future years).

This increase was well flagged in advance of the budget, and much discussion of the measure appeared to conflate average with marginal tax rates. The standard rate cut-off is the point at which taxpayers begin to pay 40 per cent of any additional earnings in income tax, not where they begin to pay 40 per cent of their earnings overall in tax. While this threshold is comparatively low by European standards, particularly for single adults, the point at which taxpayers begin to pay income tax at all is comparatively high. As a result, workers at average levels of earnings in Ireland pay relatively little income tax as a share of their earnings (OECD, 2018).

Although this reform strengthens financial work incentives for those taxpayers brought into the basic rate band (by reducing the marginal rate they face from 40 per cent to 20 per cent), it is unlikely to have significant effects on aggregate employment or labour supply. This is because most of those affected see only a reduction in the overall amount of income tax they pay, with their marginal income tax rate left unchanged. This represents a pure 'income effect', which is likely to induce reductions, not increases, in labour supply as individuals can obtain the same level of consumption with fewer hours of work. Empirical evidence for Ireland also suggests that employees at the level of earnings where individuals do see reductions in their marginal tax rate – what matters for the 'substitution effect' that induces increases in labour supply – are relatively unresponsive to tax changes.[6]

While not described as such in Minister Donohoe's Financial Statement or the Department of Finance's 'Tax Policy Changes' document, the decision to hold both personal and employee tax credits fixed in nominal terms, alongside most PRSI and USC thresholds, amounted to an effective tax increase for many

[6] Acheson et al. (2018) show that there is little 'bunching' in the distribution of earnings around the standard rate cut-off, which indicates that employees around this level of earnings are relatively unresponsive to changes in tax rates.

workers. This is because inflation erodes the value of tax credits and thresholds that are specified in nominal terms, with wage growth leading to 'fiscal drag': an increase in the real tax burden on individuals and, correspondingly, in Exchequer revenues. Indeed the government counts the freezing of tax thresholds and credits as a discretionary revenue raising measure in its calculations of fiscal space available under the expenditure benchmark of the EU Stability and Growth Pact.[7] The inconsistent treatment of these measures in the budgetary documentation serves only to reduce transparency about the effects of the budget on households.

In addition to direct tax reforms, Budget 2019 announced a number of indirect tax changes, mostly increases. Foremost among these was a rise in the rate of VAT levied on most goods currently subject to second reduced rate of 9 per cent, to 13.5 per cent. This includes the supply of food and drink in catering, hotel lettings, theatrical performances and hairdressing services, although newspapers, magazines and maps will continue to be taxed at 9 per cent (alongside e-publications, previously taxed at the main rate of 23 per cent). This second reduced rate of VAT was introduced in July 2011 as a temporary measure and was supposed to expire in December 2013. However, it was retained by successive governments who cited the potential effects on tourism related sectors of the economy. Two recent reports, by the Department of Finance and the Revenue Commissioners,[8] found limited evidence of the VAT cut on employment or economic activity in affected sectors, while evaluations of a similar VAT cut in France suggests that owners of restaurants and hotels are likely to have been the main beneficiaries (Benzarti and Carloni, 2018).

More generally, the IMF, OECD and European Commission have all called for the elimination or review of reduced and zero rates of VAT, along with exemptions.[9] These distort consumption decisions towards tax advantaged goods, and lead to complexities in policing the boundaries between similar goods with different tax treatment. While arguments in favour of lower rates of VAT on certain goods are generally grounded in equity concerns, the existence of a modern, sophisticated tax and benefit system provides a much more effective way of meeting these

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7 See Table 3 in the Government's *Summer Economic Statement* (available at www.finance.gov.ie/wp-content/uploads/2018/06/20180622-SES-2018.pdf) and Table 4 in the Irish Fiscal Advisory Council's *2019 Pre-Budget Statement*, available at www.fiscalcouncil.ie/wp-content/uploads/2018/09/Pre-Budget-2019-Statement.pdf.

8 Department of Finance (2018) and Revenue Commissioners (2018).

9 See IMF 2018 Article IV Consultation (www.imf.org/en/Publications/CR/Issues/2018/06/28/Ireland-2018-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-46026), OECD (2018). *Economic Survey of Ireland* (www.oecd.org/ireland/economic-survey-ireland.htm) and European Commission (2017). *European Semester country report* (https://ec.europa.eu/info/sites/info/files/2017-european-semester-country-report-ireland-en.pdf).

concerns, by levying (progressive) income taxes and making cash transfers that vary with people's characteristics and needs.[10]

One area where there is a strong economic case for differentiated, higher rates of taxation is goods whose consumption generate negative effects, or externalities, on others. Budget 2019 announced increases in the duties levied on cigarettes, tobacco and gambling: all of which can be argued to fulfil these criteria. However, duties on alcohol, motor fuel and carbon – which also generate substantial negative externalities – were held fixed in cash terms, amounting to a 1.1 per cent real terms cut given current inflation forecasts. The decision to freeze carbon taxes for the fifth successive year means these now stand 2 per cent lower in real terms than when set at their current rate of €20 per tonne in 2014. This is well below the rate of €80 per tonne suggested as necessary by the Climate Change Advisory Council to meet the Government's own emission reduction targets.[11] Recent ESRI research (De Bruin and Yakut, 2018) estimates that even a doubling of the current rate of carbon tax to €40 would result in only a 5 per cent decrease in emissions. Delaying taking action raises the prospect of large European Union fines, along with the size of future carbon tax increases that will ultimately be needed.

Finally, the government announced a number of other changes to the tax system with revenue implications of less than €10 million in 2019, including an above inflation increase in the threshold above which Capital Acquisitions Tax applies to gifts and inheritances from parents to their children; reductions in taxation on farmers and the agricultural sector; increases (reductions) in Vehicle Registration Tax for diesel (hybrid) vehicles; and small changes to corporation tax, reliefs and allowances.

BENEFIT MEASURES

Budget 2019 saw a number of changes announced to benefit payments made by the Department of Employment and Social Protection (DEASP). The entire package (listed in Table 2) was estimated by the Department to cost €362 million in 2019, but because many measures will only take effect from March, the full-year cost is estimated to be almost €500 million per year.

10 For a comprehensive discussion of these issues, see Chapters 6-9 of Mirrlees et al. (2011).
11 Climate Change Advisory Council's *Annual Review 2018*, available at www.climatecouncil.ie.

TABLE 2 MAIN DEASP MEASURES ANNOUNCED IN BUDGET 2019

	Cost in 2019 €m
€5 increase in the maximum weekly personal rates of benefit payment from March 2019, with smaller increases for qualified adults and reduced rates of payment.	268.7
Increases for Qualified Children to rise by €2.20 per week for children aged under 12 and by €3 per week for children aged over 12 from March 2019.	20.9
Increase the earnings disregard for One Parent Family Payment and Jobseekers Transitional Payment by €20, from €130 per week to €150 per week.	5.3
Increase rate of Back to School Clothing and Footwear Allowance by €25.	6.6
Extend number of weeks Winter Fuel Payment made by one week, to 28 weeks.	8.4
Increase in the Daily Expenses Allowance rate paid to those in direct provision from €21.60 per week to €38.74 for adults and €29.80 for children.	3.1
Working Family Payment (formerly known as Family Income Supplement): new maintenance income disregard of €95.23 per week for housing costs, with the remainder assessed at 50%.	10.8
New paid parental leave scheme of two weeks each per parent, based on contribution conditions of Maternity/Paternity Benefit from November 2019.	1.5
Extension of (contributory) Jobseekers Benefit to the self-employed.	2.0
Other, including extension in payment of Domiciliary Care Allowance for three months in cases where the care recipient dies; and free school meals pilot.	13.9
Total cost of announced measures in 2019	362

Source: '2019 Expenditure Report', available at www.budget.gov.ie/Budgets/2019/2019.aspx
Note: Cost in 2019. Full-year effect different in many cases.

The largest change was a €5 increase in the maximum weekly rates of most benefit payments from 25 March 2019, costing €268.7 million next year and €349 million per year thereafter.[12] However, given that the rise will not take effect until almost quarter of the way through 2019, this is closer to a €4 per week increase. By announcing the increase as a flat-rate cash amount, this corresponds to a proportionately smaller increase in larger benefits: for example, the maximum rate of Jobseekers Allowance for a single adult aged 26 or above will increase by about 2 per cent across the year on average (above forecast inflation of 1.1 per cent, but below forecast wage growth of 2.9 per cent), but by 3.7 per cent for those aged 24 or under. This is as the latter group have been entitled to much lower weekly rates of payment since 2014, but will see the same cash increase from March. This is unlikely to represent a conscious decision to increase the

12 Larger increases were announced to the Daily Expenses Allowance paid to those in direct provision, and to the Back to School Clothing and Footwear Allowance. Although the basic rate of payment was held fixed in cash terms, the Winter Fuel Payment was effectively increased by 3.7 per cent due to the increase in the number of weeks covered from 27 to 28.

relative generosity of benefits with lower maximum rates of payments, but is the ultimate effect of the policy.

The government also announced that Increases for Qualified Children (IQCs) – awarded on top of personal rates of payment for most benefits – will from March be higher for children aged 12 and above, to reflect the greater costs associated with older children. However, there is now a substantial body of evidence that early childhood represents a formative stage of life, and that cash payments to low-income families can have significant, long-run effects on health and economic outcomes in later life (Almond and Currie, 2011; Hoynes et al., 2016). Higher payments to families with *younger* children may therefore provide greater insurance against the negative consequences that spells of unemployment or disability can have on children, so it is unclear that differentiating IQCs on the basis of age in the manner proposed by the government necessarily represents a more effective use of resources.

In addition to changes in weekly rates of payments, claimants of Working Family Payment (WFP, formerly known as Family Income Supplement, or FIS) will from March be able to disregard from the WFP means test up to €93.23 per week of maintenance income received for the purposes of housing costs, with 50 per cent of maintenance income above this amount deducted from their WFP award. Lone parents in receipt of One Parent Family Payment will also see an increase in the amount they can earn before having their payment reduced, due to a €20 increase in the earnings disregard from €130 to €150 per week. This almost restores the disregard in real terms to what it was at the end of 2011 (€150.95 in today's prices), and strengthens the financial incentive for lone parents to be in paid work. Bargain et al. (2014) found that single mothers in Ireland are particularly responsive to financial incentives, suggesting that this change could be expected to lead to higher employment among this group.

A new Parental Benefit is to be introduced from November 2019, paid at the same rate as Maternity Benefit and Paternity Benefit. While full details of the scheme are yet to be announced, it is expected to provide two additional weeks of paid leave from work to each new parent who has a sufficient history of PRSI contributions. Changes to subsidies paid under the Affordable Childcare Subsidy scheme were also announced, the most substantial of which increased the point at which means-tested subsidies begin to be withdrawn against income from €22,700 to €26,000, and raised the maximum income threshold from €47,500 to €60,000. This will mean that more families higher up the income distribution will be eligible for the scheme when it is fully rolled out, with most of those eligible entitled to a larger subsidy.

Finally, the budget announced that eligibility for Jobseekers Benefit will be extended to the self-employed, without any corresponding increase in PRSI contributions. Jobseekers Benefit is currently a non-means-tested contributory benefit, payable for up to nine months following loss of employment to those with a history of Class A or Class H PRSI contributions. Self-employed workers are already entitled to Jobseekers Allowance (a means-tested version of Jobseekers Benefit) or supplementary welfare allowance (a means-tested basic weekly allowance payable to those with no other source of income) if their business closes down or they experience a significant decline in income.

Lack of eligibility to certain contributory benefits has traditionally been advanced as a reason for why the self-employed pay less PRSI than employees, as described in Section 2. However, the extension of eligibility to Jobseekers Benefit for the self-employed without an increase in the rates of PRSI they pay undermines this argument. Indeed, the Department of Finance (2016) noted that an actuarial review of the Social Insurance Fund found an 'incremental increase in contribution rates from 4 per cent to 16 per cent would be required if Jobseeker's Benefit in addition [to] core State Pension (contributory) is provided' to the self-employed.

While the appropriate balance between the contributory and non-contributory nature of the tax and benefit system ultimately depends on a government's preferences for redistribution, insurance and the strength of financial work incentives, further loosening the link between PRSI and benefit payments represents a departure from the previous stated government policy of moving 'to a contributory European-style social insurance system'.[13]

GAINS, LOSSES AND DISTRIBUTIONAL

We now consider the impact of the announced tax and benefit measures as a whole on the incomes of households. To do this, we use SWITCH, the ESRI's tax and benefit microsimulation model, along with large-scale representative survey data on households' incomes and expenditures. We examine the impact of measures (listed in the Appendix) on the incomes of households, compared to what would have happened had tax and benefit thresholds, excise duties and benefit payments risen in line with forecast average wage growth.

13 See, for example, http://leovaradkar.ie/2016/06/varadkar-sets-out-his-plans-for-department-of-social-protection.

We compare the effect of announced policies relative to this wage-indexed counterfactual as it provides a neutral benchmark that will tend to hold inequality and the size of the State constant over time. Were we to examine the effect of announcements relative to their 2018 levels (a nominal freeze) or to a price-indexed counterfactual (where thresholds, duties and benefit payments rise in line with a measure of price inflation), real wage growth would lead to both an increase in the tax burden as a share of GDP/GNP, and to the incomes of households in receipt of benefits falling behind those of households containing individuals in work.

While the Government adopts the former (nominal freeze) approach in their Social Impact Assessment of budgetary policy, leading to very different results to those described below, policy has in practice been to increase tax and benefit thresholds and payments by at least real wage growth over the medium to longer run (Callan et al., 2018). Moreover, as noted in Section 2, the government has in recent years treated the freezing of tax thresholds and credits as a discretionary policy measure in the calculation of available 'fiscal space', indicating that the default policy is for these to rise annually. Comparison of budgetary measures to a wage-indexed baseline therefore also has the attraction of corresponding to de facto – if not explicitly stated – government policy.

To calculate the effect of changes in tax and benefit policies on households, we use household survey data from the 2015 Survey of Income and Living Conditions (SILC) and the 2015-2016 Household Budget Survey (HBS). Monetary variables are uprated to 2019 terms, with SWITCH then used on SILC data to calculate households' income tax liabilities and benefit entitlements under the announced 2019 tax and benefit system, and under a counterfactual 2019 system whose thresholds and maximum benefit payments have been increased by forecast average wage inflation (2.9 per cent, from the ESRI's 2019 Autumn *Quarterly Economic Commentary*).[14] The HBS is used to estimate the indirect taxes paid by households (including VAT, duties, and carbon taxes) under announced 2019 rates and a counterfactual 2019 indirect tax system where duties and carbon taxes rise in line with forecast wage inflation.[15] The cost of the measures we

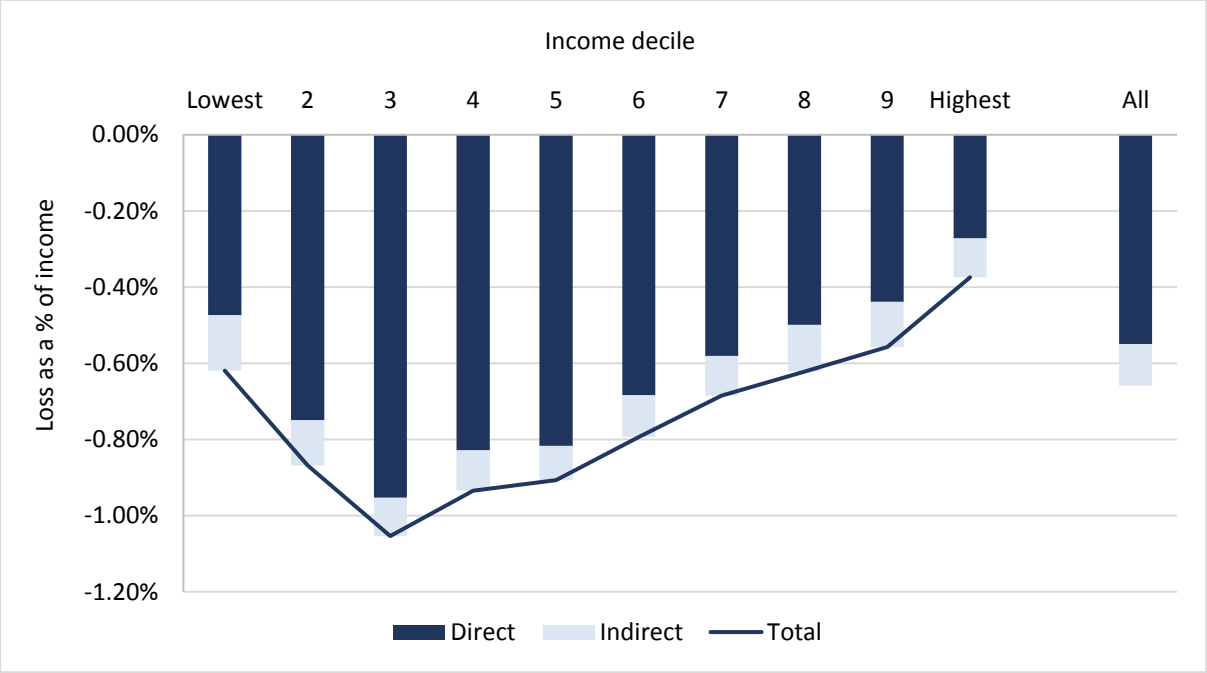
[14] The SWITCH model provides a detailed and accurate representation of almost all aspects of the personal tax and benefit system. It does not include taxes on businesses (like corporation tax) which are difficult to assign to individual households, or expenditure on public services, which unlike cash transfers provided through the benefit system, are conceptually difficult to assign a value to (O'Dea and Preston, 2014). It can, however, be used to examine entitlement to Medical or GP Visit Cards.

[15] These estimates are produced using code jointly developed with officials from the Department of Finance as part of the ESRI's 'Tax, Welfare and Pensions' research programme. All responsibility for the interpretation of these results is the authors' own.

consider is around €520 million in 2019, €40 million more than the budget measures announced excluding the rise in VAT.

Relative to this wage-indexed benchmark, the measures in Budget 2019 result in an average loss equal to 0.66 per cent of household disposable income. This is primarily a result of changes to direct taxes and benefits, which account for more than three-quarters of the overall average loss. Indirect taxes account for only 0.11 percentage points of this loss, with real cuts to other duties and carbon taxes offsetting VAT increases.

FIGURE 2 DISTRIBUTIONAL IMPACT OF TAX AND BENEFIT CHANGES



Source: Authors' calculations using the 2015-2016 Household Budget Survey, and SWITCH run on 2015 Survey of Income and Living Conditions data, both uprated to 2019 prices.

Notes: Deciles are based on equivalised household income, using CSO national equivalence scales.

However, these losses are not equally distributed. Figure 2 illustrates the impact of the measures across the distribution of household income, adjusted for family size, with the population divided into ten equally sized groups, or deciles, ordered from lowest to highest income, left to right. The columns show that losses as a share of household disposable income are on average largest for the third lowest income decile (0.94 per cent) and smallest for the highest income decile (0.37 per cent). With the exception of the very lowest income decile, households in the bottom half of the income distribution (deciles 2-5) lose by more than those in the upper half.

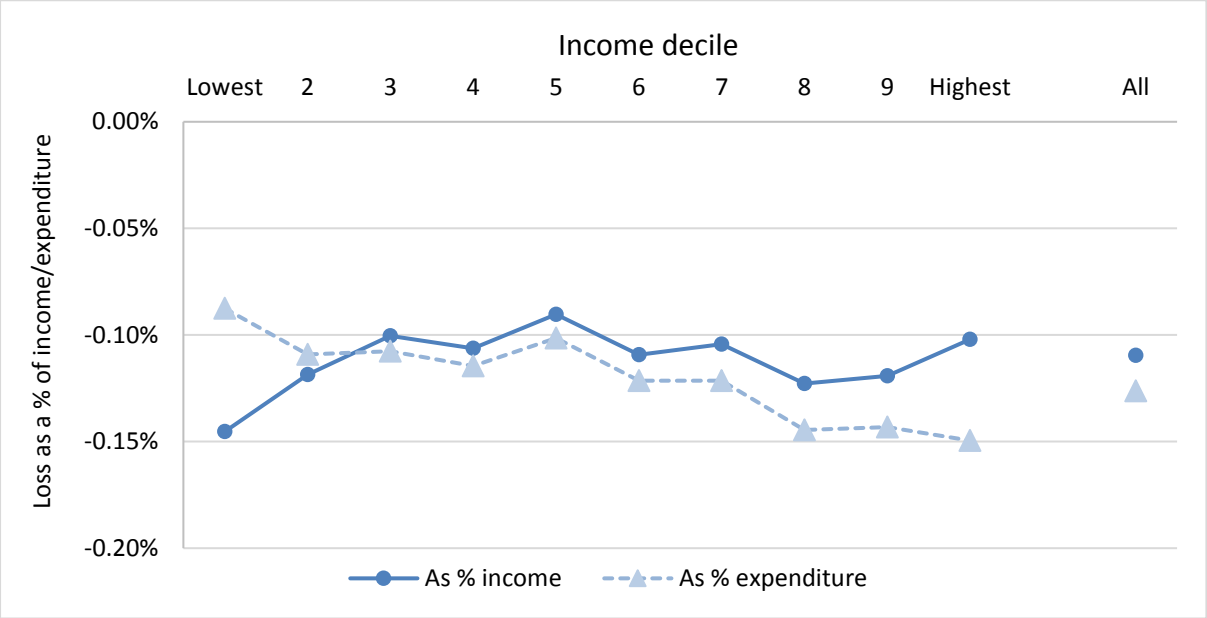
This pattern is driven by the nominal freeze (real cut) to personal and employee tax credits and to PRSI thresholds, which increase the taxes paid on earnings by households in the bottom half of the distribution. Households in the lowest income decile tend not to have sufficiently high incomes to pay tax, so are less affected by these changes, but do lose from the below wage indexation of benefit payments which make up a substantial share of their disposable incomes. The upper half of the income distribution see smaller losses because of USC reductions and the increases to the standard rate cut-off, but still lose on average because of the real cuts to personal and PAYE tax credits and the rise in indirect taxes.

While indirect tax increases play a secondary role in shaping the distributional pattern of overall losses, the solid blue series in Figure 3 shows these look slightly regressive, with larger losses as a percentage of income for lower income deciles.

However, this impression is misleading, and arises mainly because, at any given point in time, low-income households typically spend a lot (and therefore pay a lot of indirect taxes) relative to their incomes. But households cannot spend more than their income indefinitely. Over a lifetime, income and expenditure must be equal (except for bequests given and received and the possibility of dying in debt); households spending a lot relative to their income at any given point in time are often those experiencing only temporarily low incomes and either borrowing or running down their savings in order to maintain their expenditure smoothly at a level more befitting their lifetime resources.[16]

[16] Such temporarily low incomes can arise for a variety of reasons: people who are temporarily unemployed, students, those taking time out of the labour market to raise children, retirees drawing on past savings, and so on.

FIGURE 3 DISTRIBUTIONAL IMPACT OF INDIRECT TAX CHANGES



Source: Authors' calculations using the 2015-2016 Household Budget Survey, and SWITCH run on 2015 Survey of Income and Living Conditions data, both uprated to 2019 prices.

Notes: Deciles are based on equivalised household income, using the CSO national equivalence scales.

We can get a clearer picture of the distributional impact of indirect tax changes over a lifetime – abstracting from how much people are borrowing or saving at any point in time – by looking at changes as a percentage of expenditure, rather than income. The dashed lighter blue series in Figure 3 shows that on this basis, the indirect tax changes announced by the Government in Budget 2019 look broadly progressive. Average losses as a percentage of expenditure are larger for higher income households than for lower income households. This is because higher income households tend to spend a larger proportion of their overall expenditure on goods which were subject to an increase in VAT (hotel accommodation, food and catering services, theatre tickets etc.), and these losses exceed the real cuts to non-tobacco duties and carbon taxes.

The measures announced in the budget also have a differential impact across different types of households. Table 3 shows that retired couples and lone parents saw larger than average losses as a percentage of disposable income relative to our wage-indexed benchmark. This is because transfers from the State make up a large proportion of income for most of these households, while couples without children – who saw the smallest overall losses – are on average less reliant on State transfers, and include many higher earning couples who benefit twice over from USC reductions and the increase to the standard rate threshold.

TABLE 3 AVERAGE LOSSES AS A PERCENTAGE OF DISPOSABLE INCOME, BY FAMILY TYPE

Household type	Direct	Indirect	Total
Single adult	-0.50	-0.13	-0.63
Lone parent	-0.83	-0.11	-0.95
Couple with children	-0.56	-0.09	-0.65
Couple without children	-0.40	-0.13	-0.53
Single adult, retired	-0.97	-0.09	-1.07
Couple, retired	-0.82	-0.11	-0.93
Other	-0.45	-0.11	-0.56
All	-0.55	-0.11	-0.66

Source: Authors' calculations using the 2015-2016 Household Budget Survey, and SWITCH run on 2015 Survey of Income and Living Conditions data, both uprated to 2019 prices.
Notes: Other family type grouping includes households containing multiple single adults and families.

Under the assumption that men and women in couples do not pool their income, we can also examine differences in the impact of measures by gender. On average, women saw larger losses (0.73 per cent) as a share of disposable income than men (0.41 per cent). This difference is largely attributable to the differential impact of the measures on men and women with children who are in one-earner or no-earner couples. Women with children in one-earner couples lost 1.76 per cent of disposable income while women in no-earner couples with children lost 1.48 per cent of disposable income. The corresponding figures for men were -0.37 per cent and +0.20 per cent, respectively. This continues a pattern identified in recent ESRI research for women with children to be affected more by budgetary policy as a share of their disposable income than their male counterparts (Doorley et al., 2018).

CONCLUSION

This Article has described and assessed changes to the tax and benefit system announced in Budget 2019. Relative to a neutral benchmark, where all thresholds, duties and benefit payments rose in line with forecast wage growth, the budget is a small net takeaway from households on average, with larger proportional losses for lone parents, retirees, and lower income households. We conclude by reflecting briefly on some risks to the public finances facing the Government.

As highlighted by the Irish Fiscal Advisory Council and the Parliamentary Budget Office, the Exchequer has over recent years become increasingly reliant on receipts from corporation tax, which are highly volatile and concentrated among

a small number of firms.[17] This leaves revenues highly vulnerable to the relocation of even one large company, changes in the international tax environment, or a large macroeconomic shock (such as a no-deal Brexit).

These risks suggest the government may want to look for other more stable sources of revenue in future budgets. Increases to carbon taxes seem one obvious source of such revenues, given these are likely to be needed to meet Ireland's 2030 EU emissions targets without incurring substantial costs through the purchase of other countries' emission allowances.[18]

Another source of risk to the public finances is the tendency of successive governments to announce current expenditure measures with much larger long-run than first-year revenue implications. For example, while the cost of the benefit changes announced in the budget is €361.6 million in 2019, it is almost €500 million (40 per cent larger) in subsequent years. This is not mirrored by the profile of tax rises, which are expected to raise €341 million in 2019 and €361 million subsequently, meaning the net annual long-run cost of announced tax and benefit measures (€136 million) is more than six times as large as in 2019 (€20 million). As it stands, no provision has been made in departmental expenditure ceilings to account for these known costs, or for additional recruitment and resources in the areas of education, justice and health.[19]

A further source of risk to the public finances is the recurring announcement – late in the year it is to be paid – of the Christmas bonus: an extra payment for people in receipt of certain social welfare benefits. The recent budget announced that this is to be paid in 2018 at a rate equal to 100 per cent of eligible individuals' normal weekly benefit payment. This requires a supplementary estimate to be passed by the Dáil, and either for expenditure elsewhere to be underspent, revenues to exceed forecasts, or an increase in borrowing. The public finances would be better served by the government announcing the rate of this payment at the same time as other welfare payments, at whatever rate is deemed appropriate to meet distributional and other policy objectives. Such a decision would also benefit lower-income households by removing needless uncertainty about whether the Christmas bonus will be paid in full (as this year), at a reduced rate (as between 2014 and 2017), or at all (as between 2009 and 2013).

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17 See the Irish Fiscal Advisory Council's 'Pre-Budget 2019 Statement' and Parliamentary Budget Office's 'Pre-Budget 2019 Commentary'. The former notes that close to 40 per cent of total corporation tax receipts are paid by just ten companies.

18 See the Climate Change Advisory Council's *Annual Review 2018*, available at www.climatecouncil.ie.

19 See p.43 of the *Expenditure Report 2019*, published at www.budget.gov.ie/Budgets/2019/2019.aspx.

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APPENDIX

The SWITCH model provides a detailed and accurate representation of almost all aspects of the Irish personal tax and benefit system. It does not include taxes on businesses (like corporation tax), which are difficult to assign to individual households, or expenditure on public services, which unlike cash transfers provided through the benefit system, are conceptually difficult to assign a value to (O'Dea and Preston, 2014).

The main measures we include in our analysis of Budget 2019 using SWITCH are:

- Changes to maximum personal rates of social welfare payments, Increases for Qualified Adults and Increases for Qualified Children;
- Changes to income tax credits and the standard rate band;
- Reduction in 4.75 per cent rate of USC and changes to USC thresholds;
- Reduction in mortgage interest relief;
- Freeze to employee PRSI thresholds;
- Freeze to child benefit and FIS/WFP income limits;
- Increase in number of weeks Fuel Allowance payable and freeze to basic amount and income limits;
- Increase in One Parent Family Payment earnings disregard;
- Freeze in Household Benefits package;
- Back to School Allowance increases and freeze to income limits;
- Freeze to Rent and Mortgage Supplement thresholds.

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