APRIL 15

Q2

Central Bank Quarterly Bulletin

Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

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Print copies of the Quarterly Bulletin will be discontinued from Quarterly Bulletin 3 2015. The Quarterly Bulletin will be accessible on the Central Bank's website: http://www.centralbank.ie/publications/pages/quarterlybulletin.aspx

Notes

1. The permission of the Government has been obtained for the use in this Bulletin of certain material compiled by the Central Statistics Office and Government Departments. The Bulletin also contains material which has been made available by the courtesy of licensed banks and other financial institutions.

2. Unless otherwise stated, statistics refer to the State, i.e., Ireland exclusive of Northern Ireland.

3. In some cases, owing to the rounding of figures, components do not add to the totals shown.

4. The method of seasonal adjustment used in the Bank is that of the US Bureau of the Census X-11 variant.

5. Annual rates of change are annual extrapolations of specific period-to-period percentage changes.

6. The following symbols are used:

e estimated	n.a. not available
p provisional	. . no figure to be expected
r revised	– nil or negligible
q quarter	f forecast

7. Data on euro exchange rates are available on our website at www.centralbank.ie and by telephone at 353 1 2246380.

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Forecast Summary Table

	2012	2013	2014[e]	2015[f]	2016[f]
Real Economic Activity					
(% change)					
Personal consumer expenditure	-1.2	-0.8	1.1	2.2	2.1
Public consumption	-2.1	1.4	0.1	-0.6	1.8
Gross fixed capital formation	5.0	-2.4	11.3	10.1	8.0
Exports of goods and services	4.7	1.1	12.6	5.7	5.8
Imports of goods and services	6.9	0.6	13.2	5.7	5.9
Gross Domestic Product (GDP)	-0.3	0.2	4.8	3.8	3.7
Gross National Product (GNP)	1.1	3.3	5.2	3.9	3.5
External Trade and Payments					
Balance-of-Payments Current Account (€ million)	2,698	7,634	11,469	10,896	10,426
Current Account (% of GDP)	1.6	4.4	6.2	5.5	5.0
Prices, Costs and Competitiveness					
(% change)					
Harmonised Index of Consumer Prices (HICP)	1.9	0.5	0.3	0.7	1.7
of which: Goods	1.9	-0.4	-1.7	-2.1	0.8
Services	1.9	1.6	2.4	3.5	2.5
HICP excluding energy	0.9	0.6	0.5	1.3	1.4
Consumer Price Index (CPI)	1.7	0.5	0.2	0.7	1.7
Nominal Harmonised Competitiveness Indicator (Nominal HCI)[a]	-4.0	3.1	0.2	n.a.	n.a.
Compensation per Employee	0.7	2.0	3.0	2.2	2.3
Labour Market					
(% change year-on-year)					
Total employment	-0.6	2.2	1.9	2.1	2.2
Labour force	-0.6	0.4	-0.3	0.6	0.9
Unemployment rate (ILO)	14.6	13.1	11.2	9.8	8.7
Technical Assumptions[b]					
EUR/USD exchange rate	1.28	1.33	1.33	1.11	1.10
EUR/GBP exchange rate	0.81	0.85	0.81	0.73	0.72
Oil price ($ per barrel)	111.57	108.58	100.10	60.19	67.99
Interbank market – Euribor[c] (3-month fixed)	0.57	0.23	0.21	0.00	0.00

a Based upon the annual change in the average nominal HCI.

b The technical assumption made is that exchange rates remain unchanged at their average levels in early-January. Oil prices and interest rates are assumed to move in line with the futures market.

c Euribor is the rate at which euro interbank term deposits are offered by one prime bank to another, within the euro area. Daily data from 30 December 1998 are available from www.euribor.org.

Comment

The momentum of recovery in the Irish economy continues to build and broaden, with domestic demand now making a significant positive contribution to growth. While the strength of net export growth was an important driver of the preliminary estimate of 4.8 per cent GDP growth last year, the recovery in the economy has become more balanced over the past year. Domestically, the continued strong increase in investment spending has been supported by the beginning of a recovery in consumer spending, which is showing signs of gradually strengthening. The pick-up in consumption has benefitted from continuing favourable labour market developments, in particular growth in employment, which is helping to boost incomes. With consumer and investment spending both growing, domestic demand added to growth last year for the first time since 2007.

Notwithstanding the improved performance of the domestic side of the economy, the contribution to growth from net exports has remained sizeable. Last year witnessed exceptionally strong growth in both exports and imports, to a large extent, reflecting the impact of contract manufacturing outside Ireland (arising when a company in Ireland contracts a company abroad to manufacture products on its behalf). Given the high import content of Irish exports, the growth in offshore manufacturing activity in 2014 significantly increased the National Accounts measures of both exports and imports on a gross basis last year.

While there is some uncertainty, it is assumed that the contract manufacturing effect in 2014 represented a step increase in the level of exports and imports and not a lasting upward shift in their growth rates. Looking ahead, therefore, it is assumed that exports will return to growing broadly in line with projected growth in external demand. Given Ireland's trade links with the more strongly growing US and UK markets and the potential impact of ECB quantitative easing on euro area growth and the euro exchange rate, exports are projected to grow at a relatively strong rate over the forecast horizon.

On the domestic side, the momentum of recovery is building and it is envisaged that growth will increasingly be driven by domestic sources in coming years. Higher frequency indicators suggest that the improvement in domestic demand seen in the second-half of 2014 has carried into the early part of 2015. This year and next, further increases in employment and rising real disposable incomes should support a pick-up in the growth of consumer spending, which is projected to rise by slightly more than 2 per cent in both years. The strong momentum in investment spending is also projected to be maintained, with both construction and machinery and equipment investment expected to grow strongly, helping investment to continue to rebound from a low base.

While there is little change to the overall outlook for GDP growth in 2015 and 2016, as compared to the forecasts published in the last *Bulletin*, the composition of growth is slightly changed, with domestic demand now seen as making a stronger contribution than previously envisaged. GDP growth of 3.8 per cent and 3.7 per cent is projected for 2015 and 2016 respectively, representing an upward revision of 0.1 per cent for this year and a downward revision of a similar amount for next year. Risks to these forecasts are tilted slightly to the upside, largely reflecting upside potential from domestic factors and the impact of exchange rate movements.

Turning to policy issues, Ireland's evolving economic recovery has benefitted from fiscal and financial policies moving steadily along the path of adjustment and consolidation.

Strong policy implementation has allowed Ireland, both the sovereign and banks, to benefit significantly from increasingly favourable international financial conditions. While much progress has been made and many of the legacies of the crisis are being overcome, the challenge is to ensure that the emerging economic recovery transitions into a sustainable return to steady growth and increasing employment. To achieve this outcome, policy needs to focus on reducing remaining vulnerabilities and strengthening resilience in order to minimise future risks to economic, fiscal and financial stability.

With respect to the public finances, while figures have yet to be finalised, the outturn for the General Government Deficit in 2014 is on course to have fallen to around 4 per cent of GDP, well below target, while the General Government Debt ratio declined for the first time since 2007. More recent data signal that Exchequer developments in the early months of 2015 have continued to be favourable and Ireland remains on course to exit the Excessive Deficit Procedure, on schedule, in 2015. While planned budgetary adjustment has been the main driver of the improvement in the fiscal position over time, the improving economic performance and interest bill reductions have come to play a more prominent role, offsetting spending overruns in 2014. With relatively strong economic growth in prospect, it is important that the fiscal stance does not exacerbate cyclical pressures. Steady progress towards the medium-term objective of budget balance in structural terms (that is, adjusted for the economic cycle) would help ensure this. Moreover, it would also help ensure that the level and burden of public debt, which still remains very high, would be reduced to lower and safer levels.

In the banking sector, while significant challenges remain, progress is being made and the balance sheets of banks and their borrowers are gradually being repaired. While the overall level of arrears has fallen further, there continues to be some migration of loans into the very long-term arrears category. The Central Bank will continue to work to ensure that mortgage borrowers in arrears move to conclude durable solutions.

In addition to the need to deal with important legacy issues, the Bank has moved proactively to enhance the resilience of banks and borrowers and, by extension, the wider economy, to potential financial vulnerabilities. To this end, the Bank has introduced new regulations which apply proportionate limits, in the form of loan to value and loan to income ratios, to residential mortgage lending. The limits are supplementary to individual banks credit policies and are not designed as a substitute for lenders responsibilities to assess affordability and lend prudently on a case-by-case basis.

The key objective of the new regulations is to increase the resilience of the banking and household sectors to the property market and to reduce the risk of bank credit and house price spirals developing in the future. Recognising that mortgage lending is only one aspect in a larger housing market, efforts have been made to limit unintended consequences, through the exclusion of borrowers in negative equity from the application of the measures and the establishment of differentiated limits for first-time buyers, reflecting evidence that the latter have lower default rates. The Bank will monitor and assess the impact and effectiveness of the new measures as data becomes available.

The Domestic Economy

Overview

- *In 2015, the economy is expected to grow by 3.8 per cent (in GDP terms) with a strong contribution coming from domestic demand. This follows on from an estimated growth rate of 4.8 per cent in 2014. Next year, real GDP growth of 3.7 per cent is forecast, supported both by an improving external environment and a continuing positive contribution from domestic sources.*

- *Following six consecutive years of decline, domestic demand, helped by large increases in consumer and investment spending, grew by an estimated 2.9 per cent in 2014. Looking ahead, it is expected that personal consumption and investment expenditure will remain robust over the forecast horizon, as the economy continues to rebalance. For consumption, improving labour market conditions and firming sentiment should underpin a further recovery. With regard to investment, there have been clear signs of a broad based recovery in investment spending in recent quarters. Further strong growth in investment spending is projected over the forecast horizon as firms replenish capital stock levels and the construction sector recovers.*

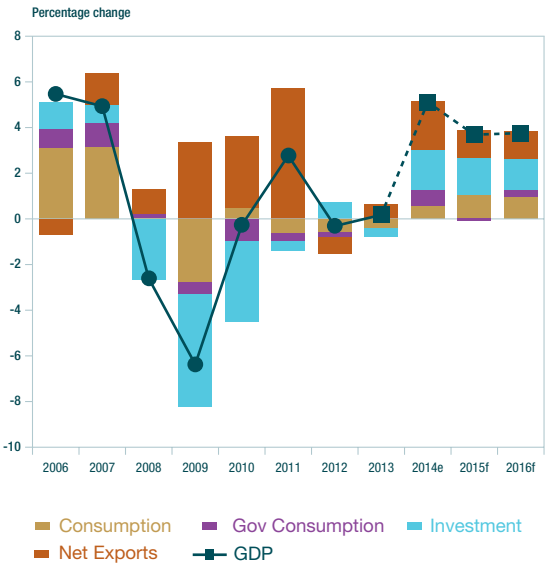
- *Irish export and import data have been volatile of late, in large part reflecting the growth of contract manufacturing activity. As a result, last year saw exceptionally strong rates of growth in exports and imports. This year and next, it is envisaged that exports and imports will grow more in line with demand in Ireland's main trading partners. This should result in a smaller contribution to growth in 2015 and 2016 from net exports, averaging 1.2 per cent per annum.*

- *The labour market has continued to improve and it is expected that employment will increase by 2.1 per cent in 2015 (and by 2.2 per cent in 2016). This should see the unemployment rate falling below 10 per cent during 2015, with a decline to less than 9 per cent in prospect for 2016. The employment outlook is premised on the continuation of recent labour market trends and supported by the increasingly positive contribution to growth arising from domestic sources.*

- *Inflation is expected to pick up over the forecast period with the HICP rising by 0.7 per cent in 2015, and 1.7 per cent in 2016. These forecasts are heavily influenced by prospects for oil prices and exchange rate developments.*

- *Risks to the forecasts are deemed to be tilted slightly to the upside. Domestic demand could recover more strongly than envisaged in this Bulletin, particularly given the current momentum suggested by consumer and investment spending data and indicators.*

Chart 1: Contributions to GDP



Source: CSO and Central Bank of Ireland.

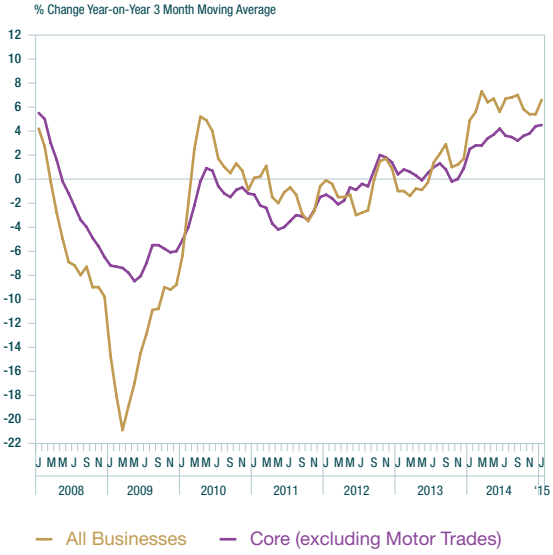
Demand

Domestic Demand Overview

The preliminary estimates for growth (published in March) confirmed the strong rebound in domestic demand last year, with growth of 2.9 per cent recorded. This was driven by a strong upturn in investment related expenditure but also by growth in consumer spending. This followed six consecutive years of decline in domestic demand and helped the economy record its strongest rate of growth since 2007.

For 2015 and 2016, domestic demand is forecast to grow on average by 3.4 per cent per annum supported by further gains in consumer and investment spending. As a result, it is envisaged that GDP growth will be increasingly driven by domestic sources in coming years.

Chart 2: Index of Volume of Retail Sales



Source: CSO.

Consumption

Consumer spending is forecast to grow by 2.2 per cent in 2015 (double the rate of growth recorded in 2014). This forecast has been revised upwards (by 0.3pp) since the last *Bulletin*, in part reflecting the positive figures reported in the most recent set of *Quarterly National Accounts* (QNA) coupled with the improving labour market outlook. In terms of the former, consumer spending started 2015 with significant positive momentum given the strong growth rates recorded in the fourth quarter of 2014.

To date in 2015, higher frequency retail sales and Exchequer tax data point to continued momentum in consumption. Retail sales increased in volume terms by 2.4 per cent in the quarter to end-January. Much of this increase was driven by very robust new car sales - vehicle licence data for February show a 29.2 per cent year-on-year increase. Retail sales excluding motor trades were up by 2.3 per cent over the same period. Exchequer tax receipts in the first two months of the year have also been robust with all of the main tax heads registering year-on-year gains and survey indicators also remain in positive territory.

Looking ahead to 2016, consumer spending is forecast to grow by 2.1 per cent. This forecast is largely unchanged since the last *Bulletin* and is driven by the outlook for the labour market, incomes, firming sentiment and a gradual return to more normal conditions in the housing market.

Investment

Following very strong gains made in 2014, investment spending is forecast to increase by 10.1 per cent in 2015 and 8 per cent in 2016. This should see the share of investment spending in GDP returning to 18.4 per cent of GDP by 2016 (up from 16.4 per cent in 2014). There appears to be strong momentum in investment spending and given the stage of the economic cycle, there could well be upside risks to the outlook for investment (see Box A for a discussion on investment and depreciation).

Table 1: Expenditure on Gross National Product 2014[e], 2015[f] and 2016[f]

	2014[e]	% change in		2015[f]	% change in		2016[f]
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Personal Consumption Expenditure	85,618	2.2	1.4	88,727	2.1	1.8	92,220
Public Net Current Expenditure	25,966	-0.6	0.8	26,015	1.8	1.1	26,790
Gross Domestic Fixed Capital Formation	30,399	10.1	2.8	34,423	8.0	3.2	38,386
Building and Construction	12,789	8.4	6.1	14,650	8.2	6.3	16,782
Machinery and Equipment	8,927	16.8	0.9	10,510	9.8	1.3	11,686
Value of Physical Changes in Stocks	1,850			1,850			1,850
TOTAL DOMESTIC DEMAND	143,833	3.3	1.6	151,014	3.4	2.0	159,247
Exports of Goods & Services	207,791	5.7	1.7	223,244	5.8	1.8	240,326
FINAL DEMAND	351,624	4.7	1.6	374,258	4.8	1.9	399,573
Imports of Goods & Services	-168,082	5.7	-1.0	-179,561	5.9	-1.4	-192,806
Statistical Discrepancy	1,868			1,868			1,868
GROSS DOMESTIC PRODUCT	185,410	3.8	2.2	196,565	3.7	2.3	208,635
Net Factor Income from Rest of the World	-26,974	3.2	1.7	-28,288	5.4	1.8	-30,344
GROSS NATIONAL PRODUCT	158,436	3.9	2.3	168,278	3.5	2.4	178,291

Building and construction related investment grew strongly in 2014 (by approximately 9 per cent) in part due to significant increases in levels of new house building, albeit from a low base. Over the next two years, we would expect that house building levels will continue to grow solidly following a number of years of subdued investment. House building indicators, such as house registrations and planning permissions data as well as signs of insufficient supply in certain areas all point to a sustained upturn in activity levels.

One of the most encouraging features of the economy in recent quarters has been the strength in machinery and equipment related investment, as firms have sought to replenish capital stock levels. Indeed, equipment related investment (excluding the volatile transport component) expanded by more than a third in the second half of 2014. For the forecast period, it is projected that machinery related investment will continue to make a strong contribution to overall investment spending.

The other main category of investment spending - intangibles - registered a small decline in 2014. This includes research and development (R&D) investment expenditure. For the forecast period, it is projected R&D related investment will grow broadly in line with the output of the multinational sector.

Given the uncertainty surrounding some of the key categories of investment spending, namely the timing and scale of aircraft purchases (included in machinery and equipment) and intangibles investment, it is useful to consider the outlook for investment net of these categories. This sub-category of investment spending is forecast to grow by 10.2 per cent in 2015 and 9.3 per cent in 2016.

Government Consumption

The volume of government consumption increased marginally by 0.1 per cent in 2014. Following the measures announced in Budget 2015 and recent data releases, real government consumption is expected to decline by 0.6 per cent in 2015, before strengthening to 1.8 per cent growth in 2016.

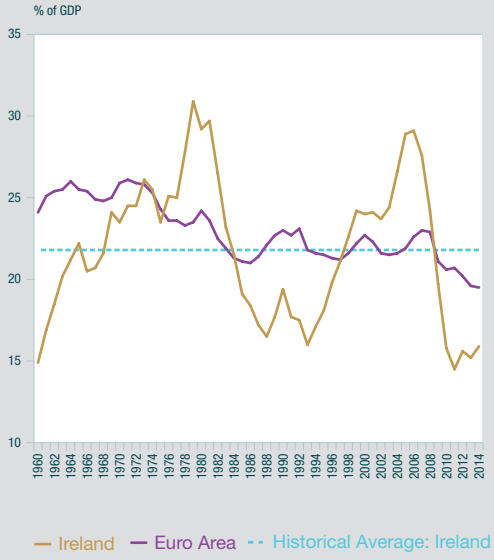
Box A: Investment and Depreciation in Ireland

by Diarmaid Addison-Smyth[1]

In Figure 1, the long-term share of investment spending relative to GDP in Ireland and in the Euro Area is shown. Two things are noteworthy:

- the current abnormally low share of investment spending
- the volatility in the Irish series.

Box A Fig 1: Historical Investment Ratios, Ireland and the Euro Area



Source: Ameco.

1 Irish Economic Analysis Division.

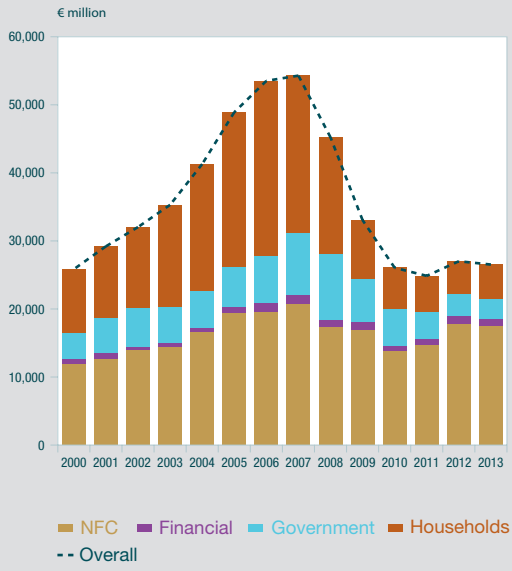
Box A: Investment and Depreciation in Ireland

by Diarmaid Addison-Smyth

Focusing on the most recent period to 2013, and examining investment by sector (and by asset type), we can see that the decline in investment spending in Ireland has been driven by much lower levels of spending by the household and government sectors (Figure 2). Investment from the household sector has declined by nearly 80 per cent since 2007. This largely reflects the well documented collapse in the housing sector – house building levels dropped by approximately 90 per cent between 2007 and 2013.

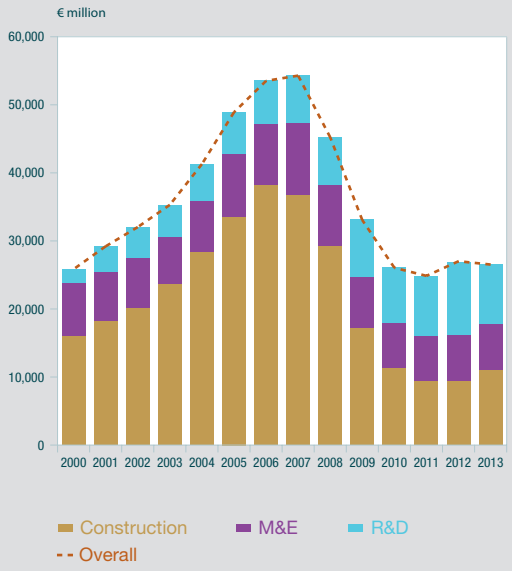
Government investment has declined by two thirds since 2008. As a result, the ratio of government investment to GDP in Ireland at 1.7 per cent in 2013 was the lowest ratio in the EU (Figure 3). Furthermore, the decline in government investment spending was the largest across the EU over the period since 2008.

Box A Fig 2A: Investment by Sector



Source: Eurostat.

Box A Fig 2B: Investment by Asset Type



Source: Eurostat.

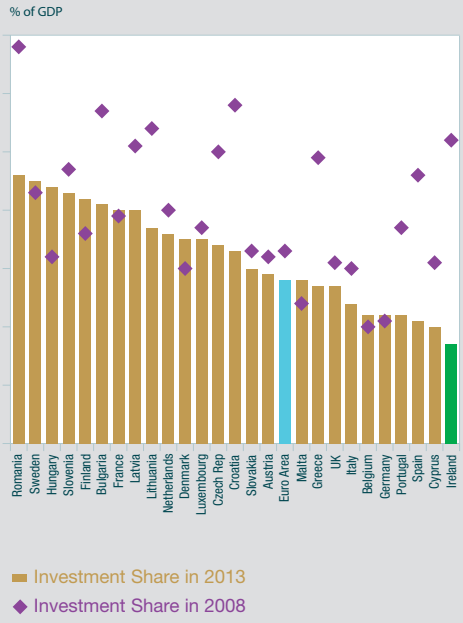
Note: R&D investment calculated as a residual.

Box A: Investment and Depreciation in Ireland

by Diarmaid Addison-Smyth

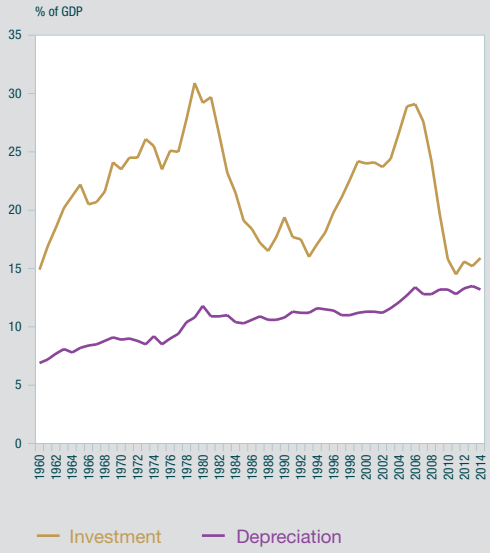
Low levels of investment spending are a concern given the potential for growth to be impeded in the medium-term as capital stock levels get depleted. To get a sense of the latter, in Figure 4, we plot investment spending (as a share of GDP) relative to depreciation (as proxied by economy-wide consumption of fixed capital) over a fifty year period. The gap between the two series provides a measure of net new investment and is currently at an historically low level. Looking at the more recent period and examining investment and depreciation across sectors, the very low levels of government and household investment spending are again apparent (Figure 5). In fact, according to the latest CSO data, the Government's net acquisition of non-financial assets turned negative in 2013 for the first time since the data series began – pointing to a decline in the public capital stock (Figure 6).

Box A Fig 3: Government Investment in the EU, pre- and post-financial crisis



Source: Eurostat.

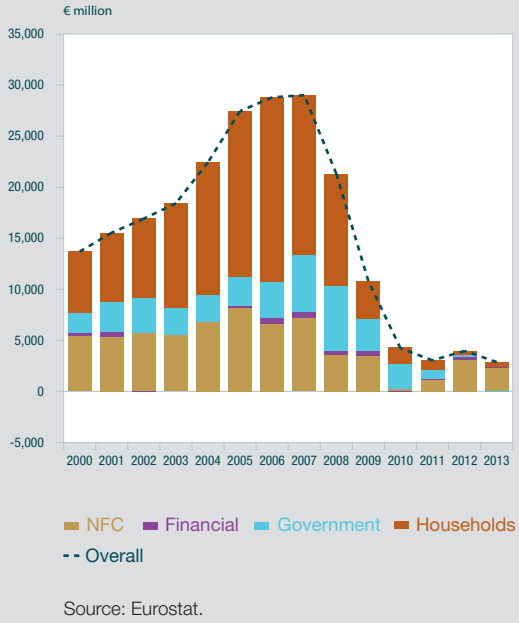
Box A Fig 4: Investment and Depreciation in Ireland



Source: Ameco.

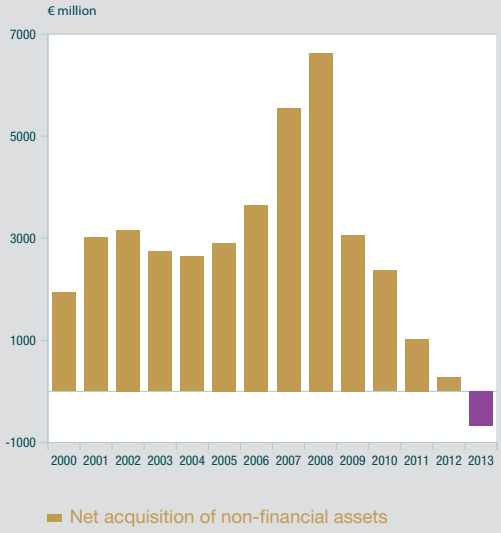
Box A: Investment and Depreciation in Ireland
by Diarmaid Addison-Smyth

Box A Fig 5: Investment less Depreciation by Sector



Source: Eurostat.

Box A Fig 6: Government Net Acquisition of Non-financial Assets



Source: CSO.

However, more recent data indicate that a broad based recovery in investment spending is underway, albeit from a low base. The forecasts in this *Bulletin* assume that investment spending will recover strongly over the forecast horizon with a rebound forecast for both construction related investment (encompassing the household and government sectors) and machinery and equipment investment purchases. This should result in the investment ratio returning to within a couple of percentage points of its long-run historical average by end-2016.

External Demand and the Balance of Payments

Exports and Imports

Exports were exceptionally robust in 2014 with growth of 12.6 per cent. Much of this increase was driven by the impact of changes in the level of contract manufacturing activity, but also by improving demand in the UK and the US.[2] As such, despite strengthening imports in the latter part of the year, net exports contributed approximately half of overall GDP growth in 2014 (Chart 1). Projections for 2015 and 2016 imply a weaker contribution from net exports to GDP growth over the forecast horizon.

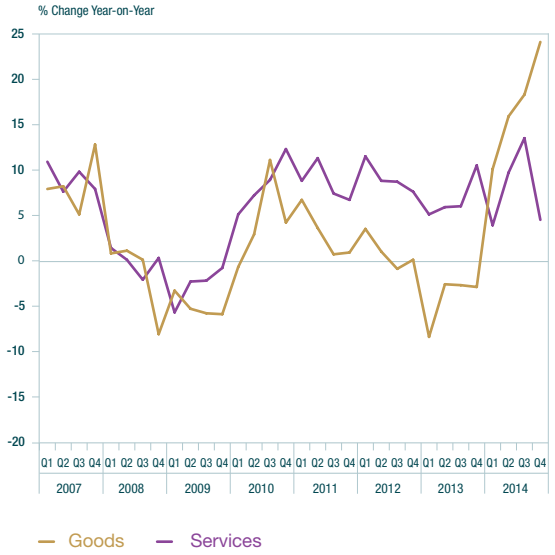
Goods exports increased by 17.2 per cent in 2014. Much of this reflected changes in the operational structure of multinational enterprises and specifically an increase in

2 Due to the more widespread application of the economic ownership concept in the National Accounts, these goods owned by an Irish entity that are processed in and shipped from a foreign country on their sale are classified as Irish up until the time that they are sold, irrespective of whether the processing of those goods from their components to the final product for sale takes place in Ireland or not. While the activity is tracked in the Industrial Production series as Irish manufacturing, it does not involve goods moving into and out of the State, and consequently is not recorded in the monthly CSO Goods Exports and Imports release. The CSO have released a technical note on this topic in their Quarterly National Accounts series, which can be accessed on http://www.cso.ie.

Table 2: Goods and Services Trade 2014, 2015[f], 2016[f]

	2014	% change in		2015[f]	% change in		2016[f]
	EUR millions	volume	price	EUR millions	volume	price	EUR millions
Exports	207,791	5.7	1.7	223,244	5.8	1.8	240,326
Goods	106,819	5.5	1.6	114,497	5.9	1.6	123,193
Services	100,972	5.9	1.7	108,747	5.6	2.0	117,134
Imports	168,082	5.7	1.0	179,561	5.9	1.4	192,806
Goods	60,924	6.1	0.9	65,230	6.0	1.2	69,951
Services	107,158	5.5	1.1	114,331	5.9	1.5	122,856

Chart 3: Volume of Exports



Source: CSO Quarterly National Accounts.

activity contracted out to foreign manufacturing plants. The assumption underpinning the projections in this *Bulletin* is that the growth in export volumes moves more in line with projected external demand in 2015 and 2016, and that the contract manufacturing effect in 2014 reflected a level shift as opposed to a change in the trajectory of export growth. Meanwhile, services exports also performed strongly in 2014, growing by 8 per cent in volume terms and dominated again by computer and business related services.

Sentiment indicators for both manufacturing and services industries continue to be positive. The manufacturing PMI has expanded for 20 consecutive months with respondents identifying the UK as a key source of new orders. Similarly, the outlook for demand in our major trading partners is more positive than in the previous *Bulletin*, particularly in the euro area where recent policy measures are expected to support a faster recovery over the forecast horizon. Demand for Irish exports from outside the euro area will also be supported by the weaker euro exchange rate.

With these factors in mind, the latest projection is for overall export growth of 5.7 per cent for 2015, and 5.8 per cent in 2016. Goods exports are expected to grow at a faster pace than services this year, with the opposite expected to be the case in 2016.

Imports are expected to grow strongly in both 2015 and 2016 given the outlook for consumption and investment expenditure. Alongside this, the import content of Irish exports is also relatively high. With export growth being driven by high-tech sectors with a reliance on imported royalties and licences in particular, this also supports a rising import profile. Consequently, a 5.7 per cent increase in the volume of imports is expected in 2015 followed by growth of 5.9 per cent in 2016. A degree of uncertainty surrounds the net export projections at present as a result of sector specific issues already discussed as well as uncertainty surrounding external conditions, particularly in the euro area.

Net Trade, Factor Incomes and International Transfers

The trade surplus widened considerably in 2014 to €39.7 billion (up 9.2 per cent). This was driven by an increase in net goods exports, which more than offset the decline in net services exports.

Table 3: Balance of Payments 2014, 2015[f], 2016[f]

€ million	2014	2015[f]	2016[f]
Trade Balance	39,711	43,683	47,520
Goods	45,895	49,267	53,242
Services	-6,184	-5,584	-5,722
Net Factor Income from the Rest of the World	-25,991	-28,288	-30,344
Current International Transfers	-2,251	-2,251	-2,251
Balance on Current Account	11,469	10,896	10,426
(% of GDP)	6.2	5.5	5.0

Net factor income flows in 2014 were marginally less negative than in 2013. This reflected both lower profits generated by multinationals operating in Ireland and a rise in money market and investment fund activity in the IFSC during the year. Lower multinational profits were due to the large rise in royalties imports, particularly in the fourth quarter, which in part offset the gains in export income received by these companies during the year. Developments in the IFSC saw a large increase in both equity income outflows and debt income inflows, consistent with the rise in money market fund activity.

Trade and factor income developments, taken together, have led to a further improvement in the current account surplus to 6.2 per cent of GDP for 2014, compared with 4.4 per cent in 2013. Given the scale of factor income flows and the uncertainty of their timing, small changes in outflows or inflows could have a significant impact on balance of payments projections in this *Bulletin*. Taking this into account, the projections imply that the current account will remain in surplus at above 5 per cent of GDP in 2015 and 2016.

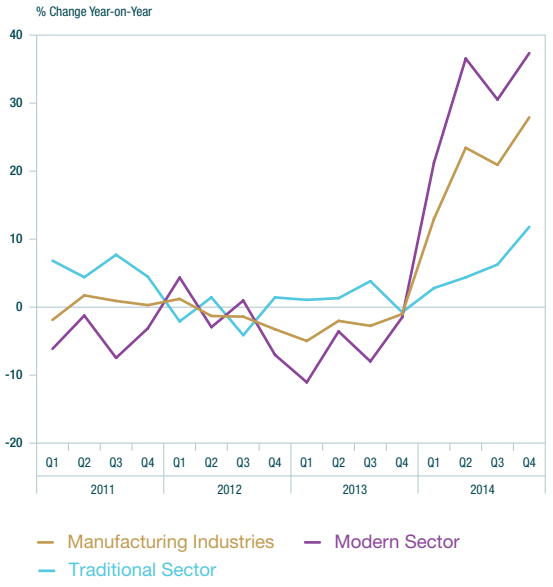
Supply

The latest QNA data show a volume increase of 1.5 per cent in the output of the industrial sector in 2014. This followed two successive years of contraction and was helped by strong growth in the construction sector. It would also appear that much of the increase in output was driven by the modern manufacturing sector and in particular by pharmaceuticals related activity. The more traditional (and predominantly Irish owned) manufacturing sector, which includes food and beverages also rebounded sharply in 2014.

The volatility in the monthly industrial production and turnover data make it difficult to get an accurate sense of the underlying strength of manufacturing. As documented in previous *Bulletins*, the effects of the patent cliff in the pharmaceuticals sector and, more recently, the growth in contract manufacturing, have resulted in some unusual patterns in the data. It will take some time for these effects to fully wash out. Other indicators such as PMI data and the latest labour market figures remain consistent however with a picture of modest growth in manufacturing activity.

The services sector performed very strongly in 2014 supported by the recovery in domestic demand. In particular, output in the

Chart 4: Volume of Industrial Production



Source: CSO.

Distribution, Transport and Communications sector grew by 8 per cent in 2014 – the strongest rate of growth since 2007. In addition, the broad Other Services sector (which includes a range of personal and professional services sub-sectors) grew by 3.4 per cent. The robust performance of the services sector has also been evident from trade, employment and PMI data. For 2015 and 2016, the services sector is expected to be a key driver of growth given prospects for domestic demand and exports.

The volume of output in the broad agricultural sector increased for a second consecutive year in 2014 with growth of 10 per cent according to the latest QNA data. The sector also entered 2015 with considerable momentum with output up 4.8 per cent in seasonally adjusted terms in the final three months of the year. Price levels remained under pressure in the sector in 2014, with output prices down 8.3 per cent and with input prices falling by 4.5 per cent.

The Labour Market

There was a further increase in employment in 2014 – with an average annual rise of 1.9 per cent – while the unemployment rate averaged 11.2 per cent last year – a decline of 1.9 percentage points relative to 2013. Largely benefitting from a pick-up in employment growth in the second-half of 2014, by the end of last year the unemployment rate had fallen to 10.4 per cent and has continued to move down since. The labour force declined by 0.3 per cent in 2014, a return to the trend declines seen in the series since 2009, with only 2013 having seen a labour force expansion during that period.

Employment growth continues to be driven by full-time employment, which increased by more than total employment in 2014, following several years of retrenchment. In addition, indicators of underemployment also showed signs of abating. Given on-going consolidation in the public sector, employment growth has been driven by developments in the private sector. More broadly, employment increased in 11 of the 14 sectors for which detailed data is provided. Construction saw strong growth in the second half of 2014, with agriculture seeing a decline of 2.8 per cent over the year, albeit after very strong growth throughout 2013. Industry made a small positive contribution over the year.

More recent data from the Live Register (to February 2015), point to a further decline in unemployment. The average monthly exit from the Live Register stands at over 3,500 for the 12 months to February, up from 2,500 a year earlier. The young (under 25s) and men continue to exit the Live Register at a higher rate than older people and women. QNHS data also show a continuation of the decline in long-term unemployment as a proportion of total unemployment, the share of which has fallen from 61 per cent in 2013 Q4 to 58 per cent in 2014 Q4.

From a demographic perspective, it is expected that outward migration pressures will continue to ease in 2015 and 2016, leading to a return to a slowly increasing active age population. Despite strong employment expansion, unemployment contraction and a growing active age population, the labour force is expected to increase only marginally in 2015 and 2016. This, however, follows an annual average contraction of 0.9 per cent in the labour force since 2009. Continued weak labour force growth projections stem from expectations of a relatively static labour force participation rate. The latter is consistent with QNHS microdata which show broadly balanced transitions into and out of the labour force at present.

Over this year and next, the recovery in the labour market is forecast to continue at a sustained pace, reflecting projections for output and especially domestic demand. In summary, employment is forecast to grow by 2.1 per cent per annum on average over this year and next. The unemployment rate is expected to average 9.8 per cent this year and 8.7 per cent in 2016 in line with the falls seen over recent quarters.

Table 4: Employment, Labour Force and Unemployment 2013, 2014, 2015[f] and 2016[f]

	2013	2014	2015[f]	2016[f]
Agriculture	107	109	112	114
Industry (including construction)	343	348	359	370
Services	1,430	1,458	1,486	1,514
Total Employment	**1,880**	**1,916**	**1,956**	**1,999**
Unemployment	284	241	213	190
Labour Force	2,163	2,157	2,169	2,189
Unemployment Rate (%)	13.1	11.2	9.8	8.7

Pay

The Earnings, Hours and Employment Costs Survey (EHECS) data for 2014 Q4 show a continued though decelerating contraction in public sector employment, with aggregate employment growth driven by the strong growth in private sector employment throughout recent quarters. This is accompanied by a more equal contribution from the private and public sectors in the second half of 2014 with regards growth in hours worked, after four quarters of large public sector hours increases relative to the private sector. There was a substantial increase in annual hourly wage growth in the final quarter of 2014, driven in the main by developments in the private sector. Increases in hourly earnings alongside an increase in total hours worked across the public and private sectors indicates that compensation per employee is growing for the firms surveyed in the EHECS and is in line with the Institutional Sector Quarterly Accounts, currently available to 2014 Q3.

Compensation per employee developments are made up of several factors including overall compensation changes, total numbers employed and wage dynamics for both existing and new employees. Compensation continues to outstrip employment growth, generating upward pressure on compensation per employee. This may be consistent with elevated levels of unemployment if it reflects compositional changes including the impact of relatively higher full-time as opposed to part-time employment growth. Recent increases in hours worked as well as hourly wage growth in the EHECS data appear to support this.

Compensation per employee is forecast to rise this year and next by 2.3 per cent on average. This is based on improving labour market prospects and the overall outlook for growth. Average real per employee compensation is expected to be lower than employment growth over the forecast horizon, reflecting the outlook for inflation and consistent with still high levels of unemployment in 2016.

Inflation

According to the latest available CSO data, consumer prices, as measured by the HICP, declined by 0.4 per cent annually in February, with CPI inflation falling by 0.5 per cent over the same period. With CSO estimates[3] indicating that the inclusion of water supply and sewage charges in the basket of consumer goods and services added around 0.4 per cent to the headline year-on-year rates of HICP and CPI inflation in February, in the absence of this change, both inflation rates would have been in the region of -0.9 per cent in February. These declines reflect recent strong volatility in international commodity prices, specifically for oil (see Box B for further analysis) and to a somewhat lesser extent food. Falling oil prices weighed heavily upon the headline HICP rate during February, as illustrated by the divergence between the headline HICP rate and the rate excluding

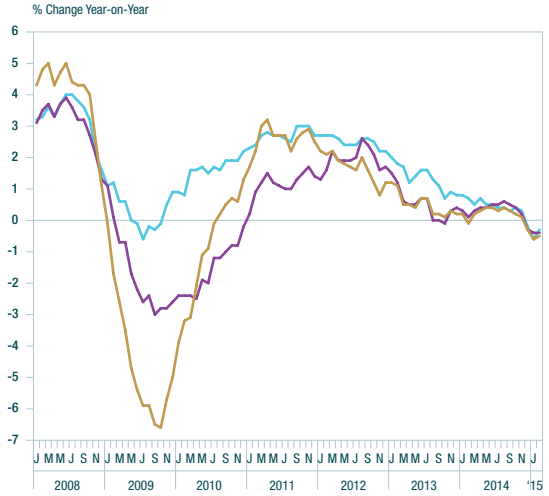
3 For further details, see: http://www.cso.ie/en/media/csoie/surveysandmethodologies/surveys/prices/documents/Introductionwatersupplyandsewagecollection.pdf.

Table 5: Inflation Measures - Annual Averages, Per Cent

Measure	HICP	HICP excluding Energy	Services[a]	Goods[a]	CPI
2011	1.2	0.0	0.8	1.5	2.6
2012	1.9	0.9	1.9	1.9	1.7
2013	0.5	0.6	1.6	-0.4	0.5
2014	0.3	0.5	2.4	-1.7	0.2
2015[f]	0.7	1.3	3.5	-2.1	0.7
2016[f]	1.7	1.4	2.5	0.8	1.7

a Goods and services inflation refers to the HICP goods and services components.

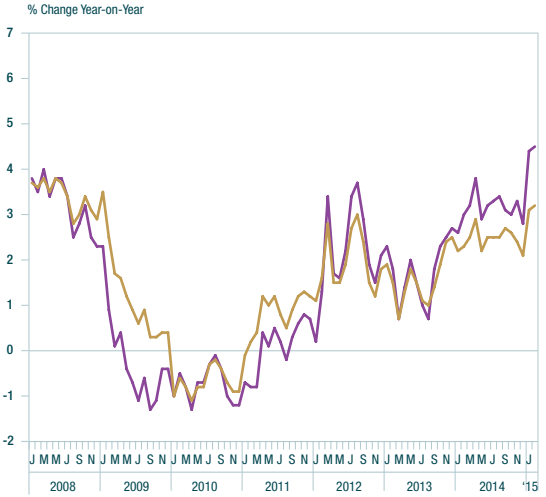
Chart 5: Consumer Prices



— Ireland: Consumer Price Index
— Ireland: Harmonised Index of Consumer Prices (HICP)
— EA-17: Monetary Union Index of Consumer Prices (MUICP)

Source: CSO.

Chart 6: Services Sector Inflation



— HICP Services (Overall) — HICP Core Services

Note: Core Market Services equals HICP services excluding telecommunications, alcohol and administered services.

Source: CSO.

energy. The gap between the two measures reached 1.2 percentage points in February, signalling that the downward pressure on headline inflation is concentrated within the energy component.

Movements in the price of oil play a key role in the assessment of the short-term outlook for consumer prices. International oil prices have stabilised somewhat relative to the $45 low reached in January, at levels around 50 per cent below its most recent peak of $115 reached in mid-2014. Nevertheless, oil price futures currently imply that downward pressures arising from the decline in oil prices are set to fade during the course of 2015. The depreciation in the euro exchange rate, which has reached a 12-year low *vis-à-vis* the US dollar over recent weeks, will also add to upward price movements over the forecast period. In particular, the weakening in the value of the euro is expected to give rise to some upward pressure on non-energy prices during the course of the year, particularly on the goods side as international trade in goods is considerably larger than for services. On the basis of this information and assuming oil prices move in line with prevailing futures prices, annual HICP inflation is expected to remain relatively weak in the months ahead

before gradually picking up during the second half of 2015, with both HICP and CPI inflation projected to average 0.7 per cent in annual terms. This represents a 0.5 percentage point upward revision relative to the previous *Bulletin*, almost entirely reflecting the boost to year-on-year inflation arising from the inclusion of water and sewage collection charges in the basket of consumer goods and services.

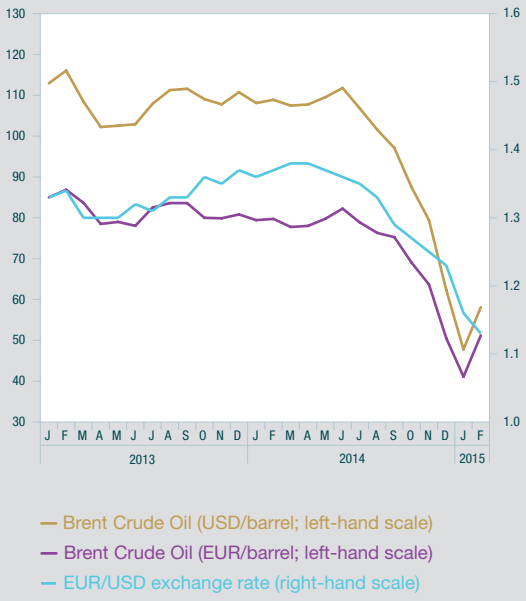
Looking to 2016, oil price futures imply a further gradual rise in prices. Upward base effects, stemming from changes in energy prices in 2015 falling out of the year-on-year comparison, is nevertheless expected to be the single most important factor driving the profile of inflation for 2016. When combined with the impact of a weaker euro, this seems set to further support an increase in price pressures. Reflecting such a combination of developments, consumer prices are expected to rise sharply during 2016, with inflation in average annual terms projected to be 1.7 per cent on both a HICP and CPI basis.

Box B: Impact of oil price developments on Irish inflation

Suzanne Linehan[4]

Oil prices have declined significantly over recent months, with the price of internationally traded Brent crude oil reaching a six-year low of around $45 in January, almost 60 per cent below its most recent peak in June 2014. While oil is priced in US dollars on international markets, it is the price of oil in euro terms that is ultimately relevant in terms of its impact on domestic consumer prices. Therefore, the sharp depreciation of the euro against the US dollar since mid-2014 has meant that the fall in oil prices expressed in euro terms is somewhat less pronounced than suggested by dollar prices, as illustrated in Figure 1.

Box B Fig 1: Evolution of Oil Prices and the EUR/USD exchange rate



Source: Central Bank and EIA.

In the context of such extreme volatility in oil prices, this box outlines the main channels through which movements in oil prices affect developments in consumer prices. As oil is used as both a finished product and as an input into production processes, movements in oil prices affect inflation via a number of related channels. The impact of oil price changes on inflation tends to be decomposed in the literature into three components, namely, direct effects, indirect effects and second-round effects.[5] Direct and indirect effects, when combined, are referred to as first-round effects.

4 Irish Economic Analysis Division.

5 For instance, ECB, (2004) "Oil prices and the Euro Area Economy", ECB Monthly Bulletin November 2004.

Box B: Impact of oil price developments on Irish inflation

Suzanne Linehan

Direct Effects

Direct effects refer to the impact of changes in oil prices solely on consumer energy prices. The bulk of the impact of oil price movements on headline inflation tends to be observed via direct effects reflecting both the speed of pass-through and the fact that the energy component accounts for such a large share of the HICP basket of goods and services, approximately 11.0 per cent in 2014. At a disaggregated level, the most immediate and noticeable direct effects in terms of the energy sub-components are found to relate to liquid fuel prices, which comprise petrol, diesel and home heating oil. When combined, these three items account for almost 65 per cent of the energy component of the HICP, highlighting the importance of their role in driving consumer energy prices. It is noteworthy that the prices of other energy products which are substitutes for oil are also strongly correlated with oil prices – most notable in this respect are gas prices, with higher oil prices tending to be followed by higher gas prices, albeit with a significant lag. A number of studies such as Meyler (2010)[6] have examined the pass-through to liquid fuel prices and found it to generally be complete and quick. Moreover, no evidence of pricing asymmetries is found, see for instance Bermingham and O' Brien (2010).[7] The degree of pass-through of oil price changes is however held to be a function of the oil price level - the lower the oil price, the smaller the impact of moves in oil prices on inflation and vice versa when prices are high.[8] The level-dependent elasticity reflects the importance of excise duties, which are generally set as a fixed amount rather than as a proportion of the retail price.

Indirect Effects

Movements in oil prices also have a broader impact on consumer prices (i.e. beyond the energy component) known as indirect effects. Indirect effects refer to the impact on the prices of non-energy consumer goods and services arising from changes in oil-related input costs whereby firms pass on such changes in an attempt to maintain or rebuild profit margins. One clear example of indirect effects is the impact of oil price fluctuations on the price of air travel given that fuel costs represent the single largest cost faced by airlines. The prices of non-energy consumer goods and services can be more generally affected by changes in transportation costs or movements in the price of imported inputs arising from oil price fluctuations. While indirect effects are generally considered to be smaller in magnitude than direct effects, their precise size is extremely difficult to quantify with any degree of certainty. Furthermore, the pass-through of an input cost change to non-energy consumer prices along the supply chain is likely to take more time to take effect than for energy prices. As is the case with direct effects, indirect effects tend to be temporary, falling out of year-on-year comparisons after a period of twelve months.

Second Round Effects

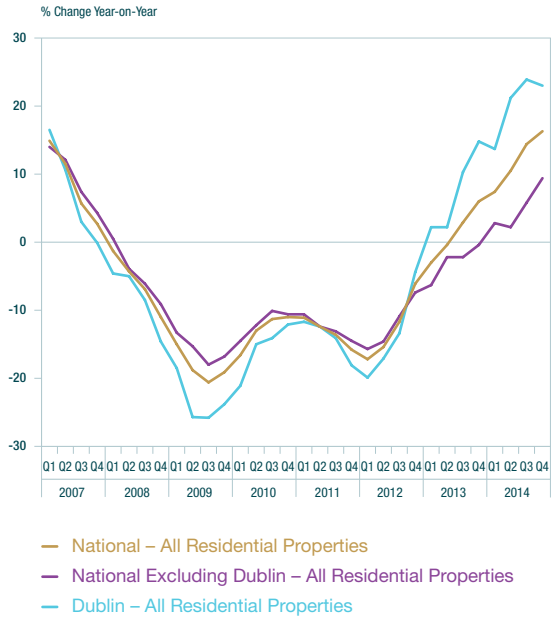
Second-round effects refer to the reaction of wage and price-setters to first-round effects, both direct and indirect – for instance, if first-round price effects are taken into account in wage negotiations to compensate for any change in real income. While first round effects generate a one-off change in the level of consumer prices, second-round price effects tend to be more persistent, influencing longer-term inflation expectations and thereby further affecting price setting behaviour. The relatively high wage flexibility and more specifically, the low incidence of automatic wage indexation in Ireland suggests that the likelihood of second round effects materialising is somewhat reduced.

6 Meyler, (2009) "The Pass-through of Oil Prices into Consumer Liquid Fuel Prices in an Environment of High and Volatile Oil Prices", Energy Economics, Vol. 31 (6).

7 Bermingham and O' Brien, (2010) "Testing for Asymmetric Pricing Behaviour in Irish and UK Petrol and Diesel Markets", Research Technical Papers 3/RT/10, Central Bank of Ireland.

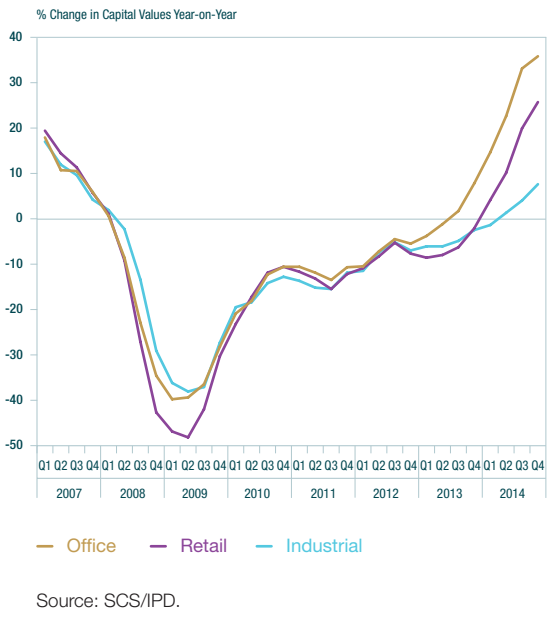
8 ECB, (2010) "Oil Prices – Their Determinants and Impact on Euro Area Inflation and the Macroeconomy", ECB Monthly Bulletin August 2010.

Chart 7: Residential Property Price Indices



Source: CSO.

Chart 8: SCS/IPD Irish Commercial Property Index



Source: SCS/IPD.

Residential Property

At the national level, house prices increased by 15.5 per cent in year-on-year terms in January 2015. However, when compared to December 2014, house prices fell by 1.4 per cent. Price dynamics remain stronger in the Dublin area, with prices rising by 21.6 per cent on a year-on-year basis, though falling by 1.9 per cent over the month. Outside Dublin, the numbers are more muted, but follow a similar pattern, with house prices rising by 9.2 per cent and falling by 0.9 per cent on a year-on-year and month-on-month basis, respectively. When compared to their peak levels in 2007, residential property prices are still down 38.5 per cent nationally and by 36.9 per cent in the Dublin area.

On the supply side of the market, the number of house completions in 2014 stood at just over 11,000 – the latest monthly figure (December 2014) being 1,189 completions. A further rise in house building is projected over the forecast horizon.

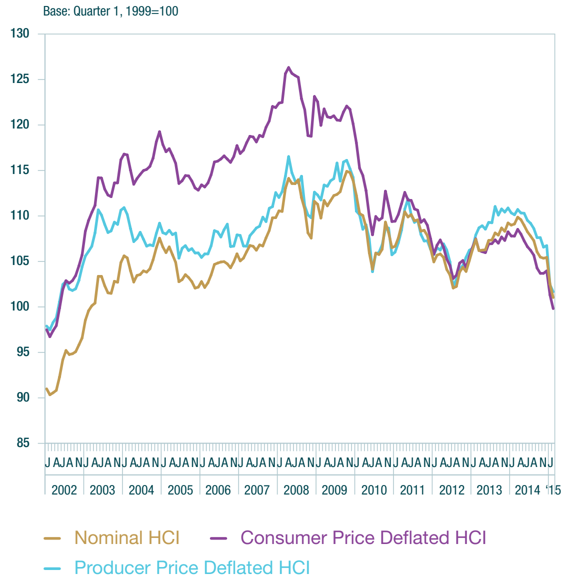
Commercial Property

The latest data (Q4 2014) from the Society of Chartered Surveyors/Investment Property Databank show that commercial property prices continued to grow strongly as the year progressed. Both retail and office capital values grew robustly in Q4 2014, increasing on a year-on-year basis by 35.9 per cent and 25.8 per cent, respectively. Industrial property registered its third year-on-year increase since Q1 2008 rising by 7.7 per cent. The Bank's Macro-Financial Review (December 2014) contains a detailed overview of recent developments in the commercial property market.

Competitiveness

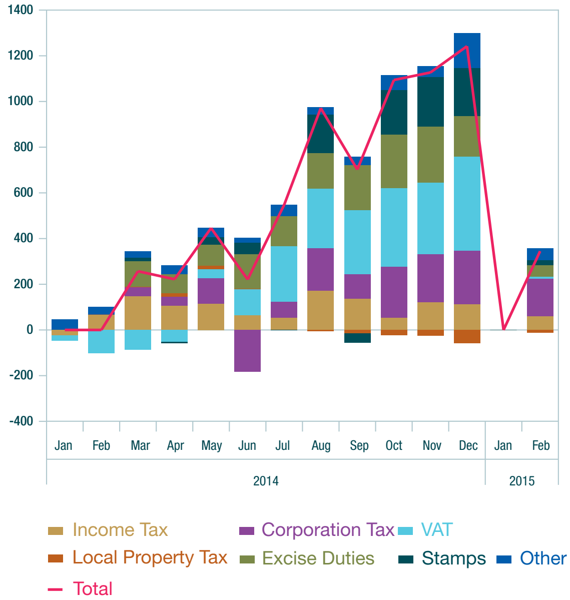
In the opening months of 2015, the value of the euro weakened markedly relative to both the pound sterling and the US dollar. In February, the monthly average GBP exchange rate was 0.74, a level not recorded since December 2007. The monthly average USD exchange rate was 1.13, marking a return to

Chart 9: Harmonised Competitiveness Indicators



Source: Central Bank of Ireland and ECB.

Chart 10: Divergence of Tax Heads from Profile



Source: Department of Finance.

a level not recorded for more than 10 years (September 2003).

The latest Harmonised Competitiveness Index (HCI) data, which is available up to February 2015, show that the nominal HCI depreciated by 7.5 per cent on a year-on-year basis. When deflated by consumer and producer prices, the real HCI decreased by 7.4 per cent and 7.6 per cent, respectively, over the same period. These exchange rate and HCI developments suggest that the Irish economy has made gains in terms of its competitive stance against its trading partners, with the majority of this improvement due to the nominal exchange rate developments.

On the basis of the conventional GDP per worker measure, productivity increased by 2.8 per cent in 2014, following a decline of 2.0 per cent in 2013. Developments in both years are mainly due to divergent compositional effects in labour market dynamics and GDP growth. Employment growth slowed in 2014, while the drag on GDP growth of sector specific issues in pharmaceutical and ICT enterprises was reversed significantly. Looking ahead, average annual productivity growth of 1.6 per cent and 1.5 per cent (on a GDP per worker basis) are forecast in 2015 and 2016 respectively.

Factoring in the projected increases in compensation of employees over the forecast horizon, unit labour costs are expected to rise by 0.7 per cent in 2015 and 0.8 per cent in 2016. The relatively small changes in unit labour costs are attributable to the change in productivity being matched by similar growth in average compensation per employee.

The Public Finances

Overview

Fiscal developments have been positive in the first months of the year. Following a strong performance in 2014 – when it appears the general government deficit achieved its ECOFIN target comfortably and the debt ratio declined for the first time in seven years –

Table 6: Analytical Exchequer Statement for February 2015 (€ millions)

	Jan-Feb 2014 €m	Jan-Feb 2015 €m	Annual Change	Outturn vs Profile
Revenue	7,829	8,875	13.4%	5.5%
– Tax revenue	5,812	6,737	15.9%	5.4%
– Appropriations-in-aid	1,741	1,809	4.0%	5.7%
– Other Revenue	276	328	18.8%	5.3%
Expenditure	10,090	9,854	-2.3%	-2.9%
– Gross Current Primary	9,125	8,969	-1.7%	-1.0%
– Gross Capital	262	325	24.2%	-37.4%
– Interest on National Debt	702	560	-20.3%	-2.5%
Exchequer Balance	**-2,261**	**-979**	**-56.7%**	**-43.6%**

Source: Department of Finance

tax revenues have been buoyant, spending continues to decline and sovereign financing conditions remain favourable. While still very early in the year, such developments are encouraging and suggest, tentatively, that the Government is on track to reduce the deficit below 3 per cent of GDP and exit the corrective arm of the Stability and Growth Pact in 2015 as required.

Exchequer Returns

The Exchequer ran a deficit of €979 million in the first two months of 2015, a decline of €1.2 billion compared to the same period in the preceding year (see Table 6).[9] Revenue growth was buoyant, increasing by 13.4 per cent on an annual basis, while gross government spending declined by 2.3 per cent. The outturn was €760 million better than had been anticipated at the time of the Budget 2015, a sizeable difference for only the first two months of the year.

Taking a closer look at revenue developments, tax receipts were almost €1 billion (16 per cent) higher than in the first two months of 2014, and €345 million ahead of the expectations that underpinned the Budget. All of the 'big four' tax heads - income tax, VAT, corporation tax and excise duties - came in ahead of profile, with stamps also continuing to perform strongly. The recovering labour market was not only evident from robust income tax growth (7 per cent) but also the strength of PRSI receipts which increased by 14 per cent in annual terms and were €106 million higher than expected. Other revenues performed broadly as anticipated, with a notable increase in dividend receipts linked to the state assets disposal programme.

Developments on the expenditure side were less notable, but were positive nonetheless. Government spending was around €300 million below profile in the first two months of 2015, following overspending in the final months of 2014. The annual spending decline reflected developments across all components - current, capital and interest payments all contracted on an annual basis – with the largest falls coming in Social Protection and Health. The divergence from target, meanwhile, was primarily down to the early payment of a capital contribution to Irish Water at the end of last year.

In terms of the broader general government balance, the first official estimates of the 2014

9 This is the Exchequer balance excluding transactions with no general government impact. The Department of Finance now provides this measure, along with the traditional full Exchequer balance, as it provides a closer proxy to the general government balance. The remainder of this section, along with Table 6, focuses on this measure.

debt and deficit figures will be published in April in the context of the Maastricht returns.[10] Despite the overspending mentioned above it appears that the EDP deficit target of 5.1 per cent of GDP was met with a significant margin last year, while the debt ratio is expected to have recorded its first annual decline since the crisis began.

Other Developments

Financing conditions remained very favourable in the first quarter of the year. The National Treasury Management Agency (NTMA) undertook three bond issuances in recent months, raising a total of €8.5 billion at low yields. This represents more than half of their total funding target set for the year. The first quarter of the year also saw the NTMA make a third early repayment Ireland's IMF loan facility. As a result it has now repaid just over €18 billion – or 81 per cent - of Ireland's total IMF borrowings, covering all payments due up to January 2021.

10 Maastricht returns are submitted by each Member State to Eurostat twice yearly, at end-March and end-September.

An Timpeallacht Gheilleagrach

Leanann an téarnamh ar gheilleagar na hÉireann de bheith ag leathnú agus ag luathú agus tá an t-éileamh intíre ag rannchuidiú go suntasach agus go dearfach leis an bhfás anois. Cé go raibh neart an fháis ar ghlanonnmhairí ina spreagadh tábhachtach don fhás anuraidh a bhí comhionann le 4.8 faoin gcéad den OTI de réir réamh-mheastacháin, tá cothromú breise tagtha ar an téarnamh ar an ngeilleagar le bliain anuas. Ar an taobh intíre, thacaigh an téarnamh tosaigh ar chaiteachas tomhaltóirí leis an méadú leanúnach láidir ar chaiteachas infheistíochta, agus tá comharthaí ann go bhfuil an téarnamh sin ag neartú de réir a chéile. Thairbhigh an feabhas ar thomhaltas d'fhorbairtí fabhracha leanúnacha i margadh an tsaothair, go háirithe an fás ar fhostaíocht, rud a chuidíonn le hioncam a mhéadú. Ó tharla go bhfuil fás ag teacht ar chaiteachas tomhaltóirí agus infheistíochta araon, chuir an t-éileamh intíre leis an bhfás anuraidh don chéad uair ó 2007 i leith.

D'ainneoin an fheabhais atá tagtha ar fheidhmíocht an taoibh intíre den gheilleagar, ba shuntasach i gcónaí an méid ar rannchuidigh glanonnmhairí leis an bhfás. Chonacthas fás fíorláidir anuraidh ar onnmhairí agus ar allmhairí araon, rud a léiríonn, tríd is tríd, iarmhairt na monaraíochta ar conradh lasmuigh d'Éirinn (nuair a dhéanann cuideachta in Éirinn conradh le cuideachta thar lear chun earraí a mhonarú thar a ceann). I bhfianaise chion mór allmhairithe na n-onnmhairí Éireannacha, chuir an méadú ar ghníomhaíocht monaraíochta thar lear in 2014 go suntasach leis an méadú ar thomhais na gCuntas Náisiúnta ar onnmhairí agus allmhairí ar bhonn comhlán anuraidh.

Cé go bhfuil éiginnteacht áirithe ann, glactar leis gurb ionann éifeacht na monaraíochta ar conradh in 2014 agus méadú céime ar leibhéal na n-onnmhairí agus na n-allmhairí seachas treocht leanúnach aníos ar a gcuid rátaí fáis. Ag féachaint romhainn, mar sin, meastar go dtosóidh onnmhairí de bheith ag fás athuair i gcomhréir, tríd is tríd, leis an bhfás réamh-mheasta ar an éileamh seachtrach. I bhfianaise naisc thrádála na hÉireann le margaí SA agus RA, ar margaí iad atá ag fás ar bhonn níos láidre, agus i bhfianaise iarmhairt ionchasach éascú cainníochtúil an BCE ar fhás sa limistéar euro agus ar ráta malairte an euro, meastar go mbeidh ráta sách láidir fáis ar onnmhairí thar thréimhse na réamhaisnéise.

Ar an taobh intíre, tá an fuinneamh faoin téarnamh ag géarú agus meastar go mbeidh an fás á spreagadh ag foinsí intíre sna blianta atá le teacht. An feabhas a chonacthas ar an éileamh intíre sa dara leath de 2014, tugtar le tuiscint ó tháscairí ardmhinicíochta gur lean an feabhas sin sa chéad chuid de 2015. I mbliana agus an bhliain seo chugainn, ba cheart go dtacódh méaduithe breise ar fhostaíocht agus ar fhíorioncam indiúscartha le feabhas ar fhás ar chaiteachas tomhaltóirí, agus meastar go dtiocfaidh méadú 2 faoin gcéad ar chaiteachas tomhaltóirí sa dhá bhliain sin. Meastar freisin go leanfaidh an fuinneamh láidir faoin gcaiteachas infheistíochta sa mhéid go bhfuiltear ag súil go dtiocfaidh fás láidir ar infheistíocht foirgníochta, innealra agus fearais, rud a chuideoidh le haisphreabadh na hinfheistíochta ó bhonn íseal.

Cé gur beag athrú atá ar an ionchas foriomlán don OTI in 2015 agus in 2016 i gcomparáid leis na réamhaisnéisí a foilsíodh san *Fheasachán Faisnéise* deireanach, tá athrú beag tagtha ar chomhdhéanamh an fháis sa mhéid go meastar gur mó an méid a chuirfidh an t-éileamh intíre leis an bhfás ná mar a measadh roimhe seo. Meastar go mbeidh fás 3.8 faoin gcéad agus 3.7 faoin gcéad ar an OTI in 2015 agus 2016 faoi seach, is ionann é sin agus athbhreithniú 0.1 faoin gcéad aníos don bhliain seo agus athbhreithniú comhchosúil anuas don bhliain seo chugainn. Na rioscaí a bhaineann leis na réamhaisnéisí seo, tá siad beagán ar an taobh thuas, rud a léiríonn, tríd is tríd, an t-ionchas ar an taobh thuas a bhaineann le himthosca intíre agus iarmhairt ghluaiseachtaí na rátaí malairte.

Maidir le saincheisteanna beartais, thairbhigh téarnamh éabhlóideach eacnamaíoch na hÉireann de bheartais fhioscacha agus airgeadais agus é ag gluaiseacht go cothrom ar an gconair um chomhdhlúthú agus um choigeartú. De thoradh chur chun feidhme láidir beartais, cumasaíodh d'Éirinn, an Stát agus na bainc araon, tairbhiú go mór de na dálaí fabhracha idirnáisiúnta airgeadais. Cé go bhfuil go leor dul chun cinn déanta agus cé gur sáraíodh roinnt mhaith de na leagáidí ón ngéarchéim, ní mór a áirithiú go bhforbróidh an téarnamh eacnamaíoch atá ag teacht chun cinn chun go mbeidh filleadh inmharthana ar fhás cothrom agus méadú ar fhostaíocht. D'fhonn an cuspóir seo a bhaint amach, ní mór beartas a dhíriú ar na leochaileachtaí atá fós ar marthain a laghdú agus ar stóinseacht a neartú chun go n-íoslaghdófar rioscaí don chobhsaíocht eacnamaíoch, fioscach agus airgeadais amach anseo.

Maidir leis an airgeadas poiblí, cé nach bhfuil na figiúirí go léir ar fáil go fóill, is cosúil gur thit an tEasnamh Rialtais Ghinearálta go dtí thart ar 4 faoin gcéad den OTI in 2014, go mór faoi bhun na sprice, fad a laghdaigh cóimheas an Easnaimh Rialtais Ghinearálta don chéad uair ó 2007 i leith. Tugann na sonraí is déanaí le tuiscint go raibh forbairtí Státchiste sna míonna tosaigh de 2015 fabhrach agus go bhfuil Éire ar an gconair cheart chun imeacht as an Nós Imeachta um Easnamh Iomarcach in 2015, mar a bhí sceidealaithe. Cé gurb é coigeartú buiséadach beartaithe príomhspreagadh an fheabhsaithe ar an staid fhioscach thar thréimhse ama, tá ról níos tábhachtaí anois ag an bhfeidhmíocht eacnamaíoch fheabhsaithe agus ag laghduithe ar bhille an úis, sa mhéid go ndearnadh róchaiteachas a fhritháireamh in 2014. Ó tharla go bhfuil ionchas ann d'fhás sách láidir, tá sé tábhachtach nach ndéanfar brúanna timthriallacha a dhianú leis an staid fhioscach. D'fhéadfaí é seo a áirithiú trí dhul chun cinn cothrom a dhéanamh i dtreo an chuspóra mheántéarmaigh, eadhon an buiséad a chomhardú i dtéarmaí struchtúracha (arna choigeartú don timthriall eacnamaíoch). Thairis sin, chinnteodh sé go ndéanfaí leibhéal agus ualach an fhiachais phoiblí, atá an-ard i gcónaí, a laghdú go dtí leibhéil ní b'ísle agus ní ba shábháilte.

Cé go bhfuil dúshláin shuntasacha fós ar marthain san earnáil baincéireachta, tá dul chun cinn á dhéanamh agus tá cláir chomhardaithe na mbanc agus a gcuid iasachtaithe á réiteach de réir a chéile. Cé go bhfuil leibhéal foriomlán na riaráistí tar éis titim, tá iasachtaí áirithe á n-aistriú go fóill chuig aicme na riaráistí fadtéarmacha. Leanfaidh an Banc Ceannais lena chuid oibre chun a áirithiú go ndéanfaidh iasachtaithe morgáiste a bhfuil riaráistí acu buanréitigh a thabhairt chun críche.

I dteannta leis an ngá atá ann déileáil le saincheisteanna leagáide, bhí an Banc réamhghníomhach ó thaobh stóinseacht na mbanc agus na n-iasachtaithe agus, dá réir sin, stóinseacht an gheilleagair i gcoitinne, a fheabhsú i gcás leochaileachtaí ionchasacha airgeadais. Chuige sin, tá rialacháin nua tugtha isteach ag an mBanc lena ndéantar teorainneacha comhréireacha, i bhfoirm cóimheasa iasachta le luach agus cóimheasa iasachta le hioncam, a chur i bhfeidhm maidir le hiasachtú morgáistí cónaithe. Tá na teorainneacha sin forlíontach ar bheartais chreidmheasa na mbanc aonair agus níl sé i gceist go gcuirfear iad in ionad na bhfreagrachtaí a bhíonn ar iasachtóirí inacmhainneacht a mheasúnú agus iasachtú stuama a dhéanamh ar bhonn gach cáis ar leith.

Is é príomhchuspóir na rialachán nua seo stóinseacht na hearnála baincéireachta agus earnáil na dteaghlach a neartú i gcás deacrachtaí sa mhargadh tithíochta agus an baol go rachadh creidmheas bainc agus praghsanna tithe ó smacht arís a laghdú. Agus é á aithint nach bhfuil san iasachtú morgáiste ach gné amháin den mhargadh tithíochta, tá iarracht déanta iarmhairtí neamhbheartaithe a theorannú, trí iasachtaithe a bhfuil cothromas diúltach acu a eisiamh ó fheidhmiú na mbeart agus trí theorainneacha difreáilte a bhunú do cheannaitheoirí céaduaire, i bhfianaise go bhfuil rátaí mainneachtana níos ísle ag ceannaitheoirí céaduaire. Déanfaidh an Banc monatóireacht agus measúnú ar iarmhairt agus ar éifeachtacht na mbeart nua de réir mar a bheidh sonraí nua ar fáil.

Financing Developments in the Irish Economy

Overview

Financing conditions were very favourable for most sectors of the Irish economy in late 2014 and early 2015, with the exception of new bank lending to households and non-financial corporations. Central Bank interest rates remain at historically low levels in most advanced economies. As a result, rates have declined across the risk spectrum in financial markets, reflecting these low policy interest rates and anticipation of the impact of quantitative easing by the Eurosystem. Irish sovereign borrowing costs are benefitting from record low yields on government bonds, reflecting the stabilisation of public finances as well as international developments to stimulate global economic growth. These lower borrowing costs have been reflected in the yields for non-sovereign debt securities, particularly for banks. Irish banks have further reduced their reliance on central bank funding, reflecting the completion of a number of successful bond issuances and a much more stable deposit funding base.

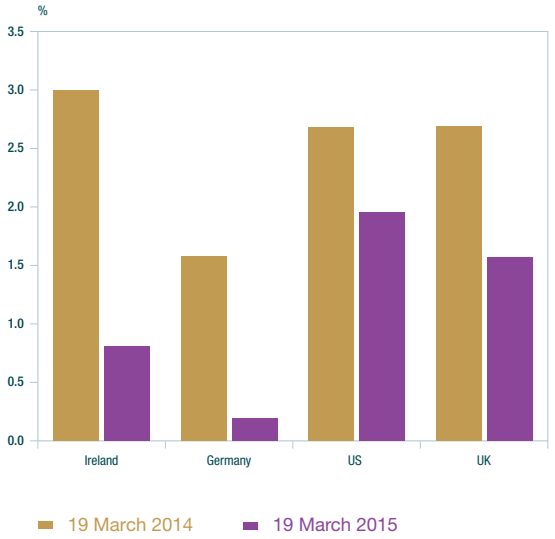
However, lower interest rates have not extended to new bank lending to households and non-financial corporations. Both sectors have continued to reduce debt levels, as repayments on existing debt more than offset new lending. Nevertheless, new lending has been on an upward trend, in line with improving employment and corporate investment trends. With government debt stabilising in monetary terms, the overall level of debt in the economy continues to moderate though it still remains high relative to most other advanced economies.

Financial Market Developments

Irish debt securities benefitted from the buoyancy of euro area bond markets in early 2015, as markets factored in the prospect of the Eurosystem engaging in large-scale purchases of euro area debt. In the event, the ECB announced purchases of €60 billion of public and private euro area debt on a monthly basis for eighteen months from March 2015, which is in excess of the expected volume of net issuances by euro area governments over the same period. As a result, euro area debt markets have diverged significantly from other advanced economies, with German bond yields entering negative territory over much of the yield spectrum. Irish government debt yields were negative up to the three year horizon by 19 March while benchmark 10-year bond yields, at 0.81 per cent, were substantially below those of the UK (1.57 per cent) and US (1.95 per cent), as shown in Chart 1. Bank debt declined in tandem as spreads with government debt were largely maintained. Both the NTMA and Irish banks were active in bond markets over the period. The NTMA availed of the favourable market conditions to extend the maturities of Irish government debt. Irish non-financial corporations with recourse to bond markets have also benefitted significantly from lower interest rates, though this market is largely restricted to larger corporates.

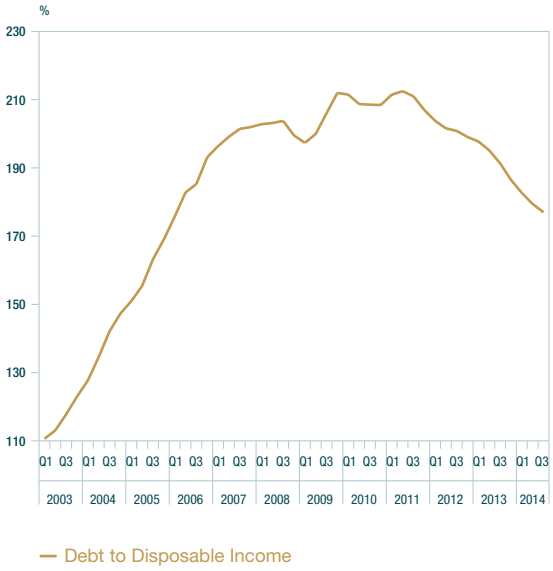
Irish equity prices also benefitted, reflecting the improved performance of the domestic economy and persisting strength in global equity markets. Nevertheless, the issuance

Chart 1: 10-year Sovereign Bond Yields - Selected Countries



Source: Thomson Reuters Datastream.

Chart 2: Household Debt as a Percentage of Disposable Income



Sources: Quarterly Financial Accounts, Central Bank of Ireland and Quarterly National Accounts, Central Statistics Office.

of new equity on the Irish stock market was relatively limited since late 2014.

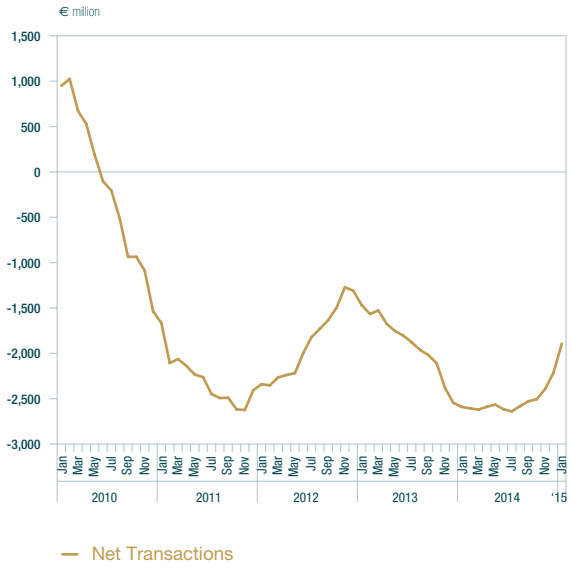
Households

Indicators of debt sustainability continued to improve in Q3 2014, with household debt as a proportion of disposable income declining by 2.4 percentage points to 177 per cent, the lowest rate since Q1 2006 (see Chart 2). The main driving factor was the extent to which households' repayments on existing debt exceeded new lending. Rising disposable income also contributed positively to the improvement in this ratio, in contrast to the crisis period when reductions in the debt burden were offset by falling disposable income. In monetary terms, household debt declined to €161 billion, or €34,846 per capita in Q3 2014, which is 21 per cent lower than its peak in Q3 2008. Household net wealth rose to €574 billion in the third quarter, or €124,523 per capita, which is 28 per cent above its lowest point in Q2 2012, mainly reflecting residential property price increases in tandem with debt reduction.

Mortgage loans, for which more recent data are available, suggest some continuation of these trends. Repayments exceeded new lending in this category by €1.9 billion in the year to January 2015, as Chart 3 illustrates. Nevertheless, house prices have declined somewhat since the start of the year and there are signs that household savings, which accumulated strongly in recent years, may be close to a peak as consumer spending recovers. Household deposits increased by just €49 million, or 0.1 per cent, in the year to January and there was a notable shift towards overnight deposits from those with agreed maturities.

Household interest rates remain elevated for new lending, despite record low policy interest rates and declining deposit rates. On an overall basis, the interest rate on outstanding loans for house purchase, at 2.7 per cent at the end of January, was almost 40 basis points above the euro area average. This is despite an average interest rate on outstanding tracker mortgages of just over 1 per cent. The weighted average rate on new floating rate mortgages was 3.3 per cent, though when renegotiated loans

Chart 3: Net Transactions of Loans for House Purchase, 12-month moving sum



Source: Money and Banking Statistics, Central Bank of Ireland.

are excluded, the average standard variable rate was 4.2 per cent. The weighted average interest rate on deposits continued its declining trend and was just 1.6 per cent by the end of January. These developments show that banks are increasing margins on new loans by maintaining lending rates despite reduced funding costs. Further details are provided in Box B which appears under the Financial Corporations section.

The number of mortgages in arrears continues to decline in line with improving economic trends and an increasing stock of restructured mortgages. By Q4 2014, 78,699 mortgages, or 10.4 per cent of all mortgages, were in arrears for over 90 days, which marks the sixth consecutive quarterly decline though the figure remains very high. However, longer-term arrears of over 720 days continue to increase, albeit at a slower pace. Longer-term arrears are particularly prevalent for loans held by non-bank financial institutions, where over 20 per cent of mortgage accounts are in long-term arrears. Levels of arrears with non-bank lenders are further elaborated in Box A below.

Box A: Residential Mortgage Arrears and Non-Bank Entities
By Jean Cassidy[1]

In recent years the number of non-bank entities holding mortgage portfolios has increased. This group of non-bank lenders includes authorised retail credit firms, as well as entities holding mortgage loans that were previously on the balance sheets of Irish resident banks. A number of these entities are currently unregulated, however the Central Bank has made significant efforts to ensure that the loans currently held by these entities are included in the aggregate *Residential Mortgage Arrears and Repossessions Statistics*. The most recently published data, which refer to end-December 2014, include all mortgage loans sold to non-bank entities.[2] This box provides, for the first time, disaggregated information on non-bank lenders.

The relative importance of non-bank entities in the overall mortgage market has increased significantly, particularly over the last year. At end-2013, non-bank entities held 2 per cent of all mortgage loans in volume terms and 2.5 per cent in value terms. By end-2014, non-bank entities accounted for 5.6 per cent of all outstanding mortgage loans (6.3 per cent in value terms), following sales of mortgage loans by a number of banks during 2014. Another contributing factor to this increase during 2014 was the surrendered banking licenses of a small number of mortgage-lending institutions. While this was, for the most part, preceded by sales of loans to other entities, some residual mortgage loans are still held by these former banks. Data relating to these mortgages are still collected by the Central Bank, but the entities are now classified as non-banks.

1 The author is a senior Economist in the Statistics Division of the Central Bank of Ireland.

2 http://www.centralbank.ie/polstats/stats/mortgagearrears/Pages/releases.aspx

Box A: Residential Mortgage Arrears and Non-Bank Entities

By Jean Cassidy

The quarterly mortgage arrears data allow us to separately identify non-bank entities, and examine the performance of their mortgage books.[3] While the aggregate statistics have reflected an improving situation in terms of overall arrears in recent quarters, the data for the non-bank entities indicate much higher arrears levels among these institutions (Table 1). Almost half of all principal dwelling house (PDH) mortgage accounts held by these institutions were in arrears at end-2014. While the number of PDH accounts in arrears over 90 days among all lenders has fallen to 10.4 per cent of total mortgages from a peak of 12.9 per cent, the data for non-bank entities show 38.3 per cent of PDH mortgage loans in arrears of over 90 days. Of greater concern is the large number of accounts in very long-term arrears. One in five mortgage accounts held by non-bank entities was in arrears of over two years at end-2014. This highlights the growing relevance of these institutions in the overall approach to arrears resolution. While these institutions account for 6.4 per cent of the value of all PDH mortgages, they account for 20.1 per cent of the value of all PDH accounts in arrears, and 26.7 per cent of those in very long-term arrears.

In terms of arrears resolution, it is perhaps surprising to note that at end-2014 the non-bank entities reported a higher number of restructured accounts as a share of their total PDH mortgages (22.3 per cent), compared to the market as a whole (15.1 per cent). In many cases, the entities that recently purchased loan books have acquired mortgages with existing restructure arrangements in place. The quarterly data also indicate that other non-bank entities are still actively restructuring their mortgages. It is worth noting that most of these non-bank entities are not currently active in the mortgage market, in terms of issuing new loans.

Table 1: PDH Mortgages, Arrears and Restructures, Non-bank Entities and All Lenders (end-2014)

	Non-bank entities				All lenders			
	Number of Accounts	% of total*	Outstanding Balance (€000)	% of total*	Number of Accounts	% of total*	Outstanding Balance (€000)	% of total*
Total mortgage accounts	42,169		6,747,250		758,988		104,948,203	
Total mortgage arrears:	19,753	46.8	4,056,364	60.1	110,366	14.5	20,206,883	19.3
In arrears up to 90 days	3,619	8.6	519,981	7.7	31,667	4.2	4,679,496	4.5
In arrears over 90 days	16,134	38.3	3,536,383	52.4	78,699	10.4	15,527,387	14.8
In arrears over 720 days	8,462	20.1	2,201,030	32.6	37,778	5.0	8,242,319	7.9
Total restructured accounts	9,415	22.3	1,691,275	25.1	114,674	15.1	17,455,706	16.6
of which:								
Not in arrears	4,058	(43.1)	625,778	(37.0)	78,418	(68.4)	10,934,811	(62.6)
Meeting the terms of the arrangement	6,092	(64.7)	1,035,172	(61.2)	97,449	(85.0)	14,413,664	(82.6)

*The figures in parentheses are expressed as a percentage of restructured accounts, not total mortgage accounts.

3 The analysis presented here focuses on mortgages on principle dwelling houses (PDH) only.

Box A: Residential Mortgage Arrears and Non-Bank Entities
By Jean Cassidy

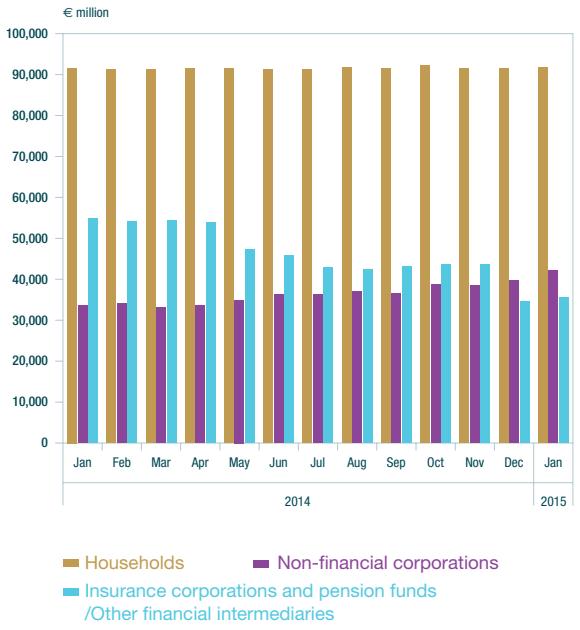
With regard to the performance of restructured accounts, the non-bank entities again fare worse. Of the total stock of restructured accounts held by these institutions at end-2014, 64.7 per cent were deemed to be meeting the terms of their restructure arrangement. This means that the borrower is, at a minimum, meeting the agreed monthly repayments according to the current restructure arrangement. The corresponding figure for all mortgage lenders at end-2014 was 85 per cent. Inability to meet the terms of the arrangement implies that the account has re-defaulted. The figures for the non-bank entities imply that over a third of restructured accounts have re-defaulted since entering their current restructure arrangement. This could be partly explained by the heavy reliance on arrears capitalisation as a resolution strategy. At end-2014, arrears capitalisation restructures accounted for 38.8 per cent of all arrangements in place, compared to 25.8 per cent for all mortgage lenders. Arrears capitalisation restructures have been shown to have among the highest rates of re-default.[4]

4 The latest *Residential Mortgage Arrears and Repossessions Statistics* show that (for the full reporting population) 28.7 per cent of the current stock of arrears capitalisation restructures have re-defaulted since entering into the arrangement.

Financial Corporations

The funding profile for Irish banks continued to improve late last year and into 2015. Irish banks undertook a number of debt issuances at various maturities and at very favourable yields. For example, AIB issued €500 million of fixed rate senior unsecured debt with a maturity of five years and coupon of 1.4 per cent in early March 2015. The outstanding stock of Irish private sector deposits with Irish banks declined, however, by 5.9 per cent to €169 billion in the year to January 2015, as the aggregate balance sheet of domestic banks continued to contract (see Chart 4). Despite a fall in deposit levels, the share of deposits in the balance sheet of the domestic market group of banks (i.e. those with retail operations in Ireland) has increased to 65 per cent in January 2015, compared to 62 per cent one year earlier. In addition, credit institutions' borrowings from the Central Bank declined by €1.6 billion in the month of January to €19.1 billion, down from €37.1 billion in January 2014. The balance sheet contraction arises from net repayments by borrowers and the ongoing disposal of loan assets by banks.

Chart 4: Private Sector Deposits with Irish Resident Banks



Source: Money and Banking Statistics, Central Bank of Ireland.

Box B: Retail Interest Rate Developments

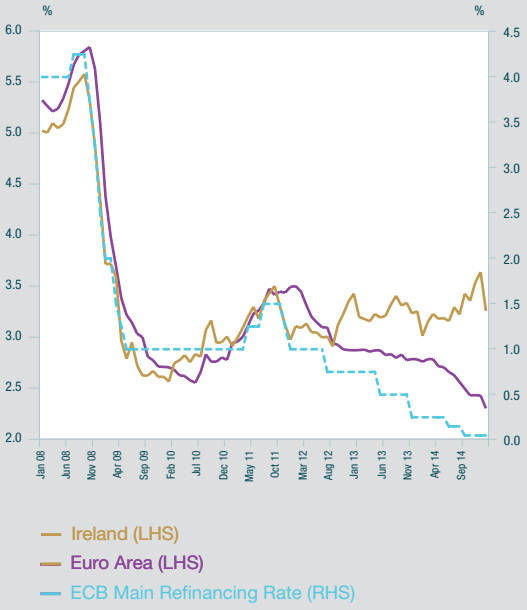
By Gavin Doheny[1]

Retail interest rates have garnered a great deal of attention recently as high street interest rates have not declined in line with reductions in the ECBs main refinancing rate (MRO). This rate is currently at the historically low level of just 0.05 per cent, following a number of reductions by the ECB in order to maintain inflation within the target range and stimulate economic activity. This box examines recent trends in retail interest rate statistics, using the ECB MIR framework.[2] In addition, it presents new data on interest rates applicable to actual mortgage drawdowns and outstanding mortgages by type of loan. It is important to note that new business MIR framework loans include renegotiations of existing contracts and do not solely reference 'mortgage' loans. The inclusion of renegotiations, particularly for tracker mortgages, means that new business rates quoted in the MIR series are lower than those advertised by high street banks for new mortgage business.

Decoupling from the ECBs main refinancing rate

Traditionally the MRO has provided a baseline for the cost of funding for credit institutions. This rate at which the ECB lends to credit institutions is central to the monetary policy transmission of rate changes from the ECB to retail credit institutions. Traditionally, variable or floating rates in Ireland have moved in line with ECB rate changes. In the case of tracker mortgages, which became common in the pre-crisis period, the one-to-one relationship was a contractual arrangement. The MIR series presented in Chart 1 demonstrates the close correlation between floating rates for house purchase and MRO rates up until early 2012. However, more recently, Irish credit intuitions pricing decisions have not reflected decreases in the MRO, unlike developments in other euro area countries. In mid-2012 Irish and euro area interest rates for household loans for house purchase were broadly equal, standing at just over 3 per cent. The MRO has since decreased from 1 per cent in mid-2012 to just 0.05 per cent in September 2014, which remains the current rate. During this period, the average euro area floating rate responded and declined to just 2.3 per cent. However, the equivalent Irish rate did not follow this declining trend and fluctuated in excess of 3 per cent, indicating an obvious decoupling from the traditional relationship with the benchmark ECB rate.

Box B Chart 1: New Business Loans to Households for House Purchase - *Floating and initial fixation period of up to 1 year (including renegotiations)*



Source: Money and Banking Statistics, Central Bank of Ireland.

1 The author is an Economist in the Statistics Division of the Central Bank of Ireland.

2 MIR Regulation (EU) No 1072/2013.

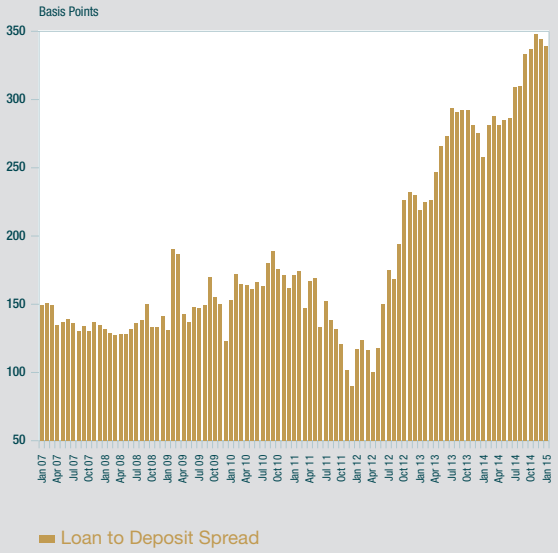
Box B: Retail Interest Rate Developments

By Gavin Doheny

Loan to Deposit spreads

In trying to understand the dynamics behind the Irish decoupling from the MRO benchmark, it is important to understand the pricing decisions behind loan and deposit products offered by credit institutions. Chart 2 illustrates the loan to deposit spread for domestic banks over the last number of years. It is evident that since mid-2012 Irish banks have increased the spread between loans and deposits, thereby improving interest margins. The loan to deposit spread has increased from circa 100 basis points in April 2012 to nearly 350 basis points towards the end of 2014. This reflects both falling deposit rates and the failure to reduce loan rates in line with MRO reductions. New business term deposit rates have fallen from nearly 2.5 per cent in early 2012, to just under 0.5 per cent in January 2015. At the same time, the weighted average interest rate on new business loans offered to households for either house purchase or consumer purposes has remained stable or indeed increased, standing somewhat closer to 4 per cent towards the latter part of 2014. Decreasing deposit rates in conjunction with stable or slightly higher loan interest rates have served to increase the loan to deposit spreads of domestic credit institutions more generally.

Box B Chart 2: Loan to Deposit Spread for Domestic Banks - *The loan to deposit spread is the difference between new business term deposits and the weighted average rate on new business loans to Households for either house purchase or consumer purposes, with a floating or up to one year initial fixation rate.*



Source: Money and Banking Statistics, Central Bank of Ireland

Tracker Mortgage Rates - Interest Margin Developments

The dynamics underlying interest rate changes to deposits and loans in Ireland are heavily impacted by the structure of banks' loan books, particularly for mortgage lending. The prevalence of low interest tracker mortgages previously offered by domestic banks has had the effect of lowering average interest margins when the average cost of funds did not fall as far as the MRO. Table 1 illustrates that the tracker rate on outstanding mortgages (for either primary dwelling or buy-to-let loans) was just over 1 per cent as of December 2014. Up to 65 per cent of all buy-to-let mortgages held by Irish credit institutions are trackers, while 45 per cent of primary dwelling mortgages are held at tracker rates. Generally, tracker mortgages generate a very low interest margin over deposits relative to other products. Based on current deposit rates, the margin on tracker loans is just over 50 basis points. However, banks have been increasing margins on other floating rate mortgage rates to counteract this. The most recent mortgage data collected by the Central Bank suggests that the average Standard Variable Rate (SVR) offered to Irish customers for a primary dwelling house is 4.2 per cent, some 300 basis points higher than the equivalent tracker rate previously offered. This is a better measure of rates offered by high street banks for new mortgage loans.

Box B: Retail Interest Rate Developments
By Gavin Doheny

Table B1: Irish Mortgage Rates (as of December 2014)

	New Business		Outstanding Amount	
	Primary Dwelling House	Buy-to-Let	Primary Dwelling House	Buy-to-Let
Standard or LTV Variable	4.20	5.22	4.18	4.53
Tracker Mortgages*	n/a*	n/a	1.04	1.09
Fixed Rate				
- 1 to 3 years	4.25	5.70	4.52	5.34
- 3 to 5 years	4.09	6.25	4.17	5.02
- over 5 years	3.91	5.34	3.69	4.14

* no active market
Source: Money and Banking Statistics, Central Bank of Ireland.

Non-Financial Corporations

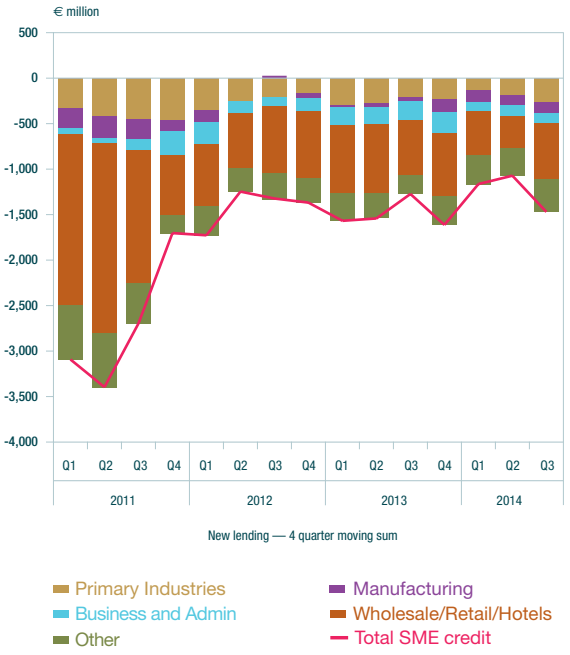
Non-financial corporations (NFCs) continued to reduce their overall debt burden, once multinational corporations (MNCs) are excluded. Domestic NFCs, and particularly small- and medium-sized enterprises (SMEs), rely more heavily on bank finance than MNCs. In the year to January 2015, repayments on existing debt exceeded new lending by €5.7 billion resulting in a decline of 8.1 per cent in overall lending. NFCs have also increased savings with net inflows of deposits to banks of €7.7 billion in the year to January 2015. The rise in deposits may indicate that NFCs are reducing their reliance on bank funding. SMEs[6] which are particularly important to the domestic economy due to their employment intensity, undertook new loans of €2.4 billion in the first nine months of 2014, some €482 million higher than in 2013. Nevertheless, outstanding credit to SMEs continued to decline in both quarterly and annual terms (Chart 5).

Interest rates for NFCs remain unfavourable when compared to average euro area rates. The interest rate on new NFC business loans up to €1 million and up to 1-year fixation (often used as a proxy for lending to SMEs) was 4.6 per cent at end-January 2015, though this represents a reduction from a peak of 5.2 per cent in October. The equivalent rate for the euro area as a whole was much lower, at 3.1 per cent. At the same time, deposit rates for new business are very low, at 0.22 per cent in January 2015, having been on a declining trend since May 2014.

For MNCs, there is little evidence of financing restrictions. These entities have greater access to financial markets through the issuance of debt securities and through global treasury operations. They have been able to take advantage of low corporate yields, as investors look beyond government bonds in a search for higher yields. NFCs as a whole, resident in Ireland issued €1.6 billion in long-term debt securities in the 12 months to January 2015. Excluding IFSC entities, net direct investment

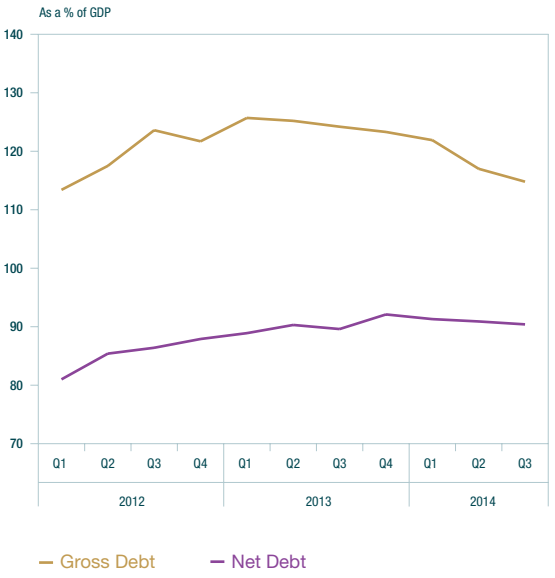
6 Small- and Medium-sized Enterprises, excluding financial intermediation and property sectors.

Chart 5: Net Lending Decomposed by SME Sector



Source: Money and Banking Statistics, Central Bank of Ireland.

Chart 6: Gross and Net Government Debt to GDP Ratios



Source: Government Finance Statistics, Central Statistics Office.

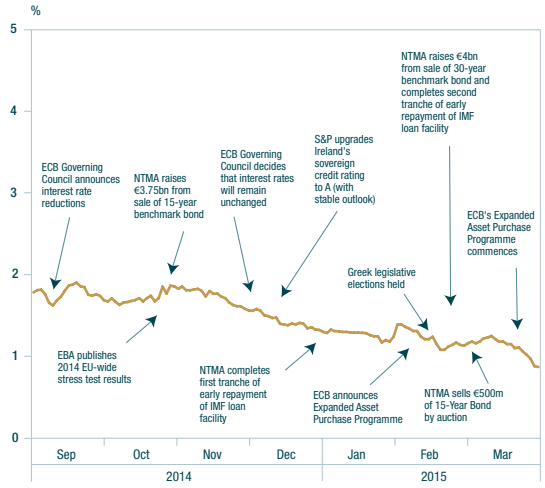
inflows by foreign-owned MNCs into their Irish operations amounted to €3.9 billion in the fourth quarter and to €2.7 billion for the whole of 2014. Foreign direct investment by Irish-owned MNCs abroad was €3.8 billion in the fourth quarter and €26.6 billion over the year. However, this predominantly reflects the operations of multinational NFCs who have established their corporate headquarters in Ireland.

Government

Government debt to GDP ratios continued to improve in Q3 2014, reflecting strong growth dynamics and fiscal consolidation. The fiscal deficit has been more than offset by increases in nominal GDP since the end of 2013. Net debt rose by almost €1 billion to €163.9 billion in Q3 2014 though the ratio of net debt to GDP has declined for the third successive quarter, to 90.4 per cent from a peak of 92.1 per cent in Q4 2013. As Chart 6 shows, gross debt declined by €1.5 billion in Q3 2014 to €208 billion, reducing the gross debt to GDP ratio to 114.8 per cent from a peak of 125.7 per cent in Q1 2013.

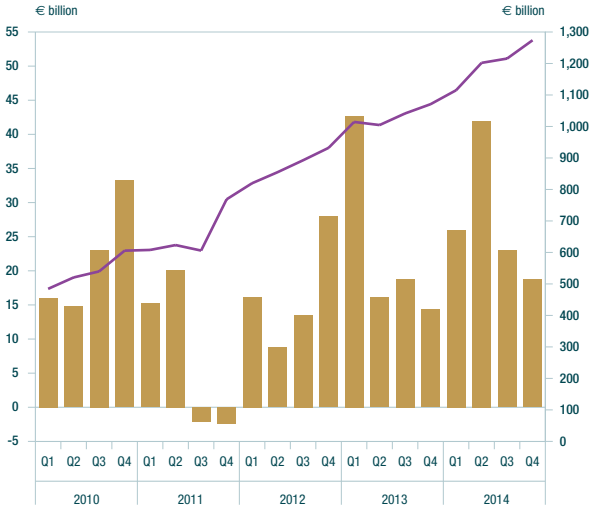
The government sector has availed of record low interest rates on euro area sovereign debt to raise funds to pay down IMF loans with interest rates of close to 5 per cent. Since the start of 2015, yields on benchmark 10-year Irish government bonds have declined by around 45 basis points to new record lows of close to 0.8 per cent by mid-March. On 19 March, the NTMA sold €500 million of six-month treasury bills at a negative yield for the first time, of -0.01 per cent. In this environment, the NTMA is improving the maturity spectrum of Irish debt with the issuance of 15 and 30 year bonds at rates of 1.3 to 1.6 per cent.

Chart 7: Irish Government Ten-Year Bond Yields



Source: Thomson Reuters Datastream.

Chart 8: Value of Investment Funds Shares/Units



Source: Investment Funds Statistics, Central Bank of Ireland.

Note: The movement from Q3 2011 to Q4 2011 includes €114 billion of money market funds that were reclassified as investment funds.

IFSC - Investment Funds, Money Market Funds and Financial Vehicle Corporations

IFSC non-bank entities benefitted from strong global financial markets in the final quarter of last year. Investment funds (IFs), as measured by the value of their units/shares in issue, rose to €1,274 billion in Q4 2014 from €1,216 billion in the previous quarter, driven by investor inflows and positive revaluations in holdings of both equities and debt securities. Investor inflows to IFs amounted to €18.7 billion, continuing a longer-term trend of strong growth, as shown in Chart 8. Money market funds, also measured by unit/share valuations in issue, increased in value to €387.1 billion from €382.4 billion over the same period, partly driven by further increases in the value of short-term debt security holdings.

The activities of Financial Vehicle Corporations (FVCs) showed signs of recovery in the second half of 2014, following a sharp decline in activity during the financial crisis. FVCs primarily undertake securitisation activities for banks and other corporates. Ireland is the largest host country for FVCs in the euro area, accounting for 21.7 per cent of total euro area assets. The number of FVCs, at 763 in Q4 2014, is the highest since records began in Q4 2009. Total FVC assets rose by €5.8 billion to €401.2 billion in Q4 2014, arising from an increase in issuance of corporate asset backed securities and commercial mortgage backed securities. These trends are evident for euro area FVCs as a whole, which recorded inflows of €3.4 billion in Q4 2014 bringing total assets to €1,849 billion. The rise in FVC numbers may indicate an increased appetite for higher yields among investors, particularly in an environment of historically low bond yields.

For detailed commentary on the latest developments in financial statistics, please see the following:

- **Monetary Financial Institutions**

  Money and Banking Statistics, January 2015
  http://www.centralbank.ie/polstats/stats/cmab/Pages/releases.aspx

  Security Issues Statistics, January 2015
  http://www.centralbank.ie/polstats/stats/sis/Pages/releases.aspx

  Locational Banking Statistics, Q3 2014
  http://www.centralbank.ie/polstats/stats/locational/Pages/releases.aspx

  Consolidated Banking Statistics, Q3 2014
  http://www.centralbank.ie/polstats/stats/conbs/Pages/releases.aspx

- **Non-Financial Private Sector**

  Money and Banking Statistics, January 2015
  http://www.centralbank.ie/polstats/stats/cmab/Pages/releases.aspx

  Trends in Personal Credit and Deposits, September 2014
  http://www.centralbank.ie/polstats/stats/cmab/Pages/releases.aspx

  Trends in Business Credit and Deposits, September 2014
  http://www.centralbank.ie/polstats/stats/cmab/Pages/releases.aspx

  Interest Rate Statistics, January 2015
  http://www.centralbank.ie/polstats/stats/cmab/Pages/releases.aspx

  Quarterly Financial Accounts, Q3 2014
  http://www.centralbank.ie/polstats/stats/qfaccounts/Pages/releases.aspx

  Mortgage Arrears Statistics, December 2014
  http://www.centralbank.ie/polstats/stats/mortgagearrears/Pages/releases.aspx

- **Government**

  Quarterly Financial Accounts, Q3 2014
  http://www.centralbank.ie/polstats/stats/qfaccounts/Pages/releases.aspx

  Holders of Irish Government Bonds, January 2015
  http://www.centralbank.ie/polstats/stats/sis/Pages/releases.aspx

  Government Finance Statistics, Central Statistics Office, Q32014
  http://www.cso.ie/en/releasesandpublications/nationalaccounts/governmentfinancestatistics/

- **Funds and Financial Vehicle Corporations**

  Investment Funds, Q4 2014
  http://www.centralbank.ie/polstats/stats/investfunds/Pages/default.aspx

  Money Market Funds, December 2014
  http://www.centralbank.ie/polstats/stats/cmab/Pages/MoneyMarketFunds.aspx

  Financial vehicle Corporations, Q4 2014
  http://www.centralbank.ie/polstats/stats/fvc/Pages/fvc.aspx

For up-to-date charts on the latest financial statistics, please see the following:
http://www.centralbank.ie/polstats/stats/summarychart/Documents/ie_financial_statistics_summary_chart_pack.pdf

Developments in the International and Euro Area Economy

Overview

Global growth momentum has recovered again having eased somewhat towards the end of 2014. The pattern remains uneven across regions, however, as the prospects of emerging market economies have diverged from those of the advanced economies. The fall in oil prices seen since the middle of last year reflected, in part, a lower level of global demand, but the main driver appears to have been related to oil supply developments. In general, consumer confidence and associated retail sales have reacted favourably to the sharp fall in oil prices in the context of a steady improvement in labour market prospects. Lower energy prices have pushed down headline inflation rates globally while core inflation has generally been stable, albeit at low levels. Financial conditions have stabilised since the beginning of the year and long-term interest rates remain at exceptionally low levels. Monetary policy remains very accommodative and non-conventional policy measures have been extended in the euro area. The reaction of financial markets was positive to the announcement of an expanded asset purchase programme by the ECB, with the size and pace of purchases higher than expected. Consequently, euro area sovereign debt yields fell, the euro weakened markedly against its main trading currencies and euro area equity indices performed strongly over the first quarter.

According to the IMF, global growth is projected to be 3.5 per cent in 2015 and 3.7 per cent in 2016; a downward revision relative to previous projections. The revisions reflect a reassessment of the growth situation in emerging market economies most notably Russia and China. The risks to the projections have changed as the main upside development, a boost in activity from lower oil prices, is now less certain. The appreciation of the dollar has partly offset the fall in oil prices in some countries including the euro area.

Among the major advanced economies, growth in the United States exceeded expectations for 2014 as a whole, and unemployment continues to decline. Short-term indicators point to a sustained growth momentum, especially in private consumption, through Q1 2015. In Japan, positive growth returned in the final quarter, after a contraction in preceding quarters, on the foot of a rise in exports and corporate earnings. Despite some softening in the fourth quarter, the UK economy continues to expand at a relatively robust pace. Consumer spending is growing strongly supported by an increase in household real income growth. In contrast, activity in the UK housing market remains muted and housing investment has fallen. House prices continued to rise, but at a slower rate than this time last year. Business investment also fell, but the data are volatile and survey indicators continue to point to robust investment growth.

The outlook among some large emerging economies has deteriorated. Growth in China slipped back again on its last reading. Disappointing early-year industrial production and investment data may create strong headwinds to Q1 GDP growth although sentiment has edged up through the first quarter. Lower growth in China will have spillover effects for other emerging economies which could partly offset the gradual acceleration in external demand from advanced economies. Russia's economy

Table 1: Changes in forecasted real GDP in selected economies

	Percentage Change		
	2014	2015[f]	2016[f]
Global	3.3	3.5	3.7
United States	2.4	3.6	3.3
Euro Area	0.8	1.2	1.4
United Kingdom	2.6	2.7	2.4
China	7.4	6.8	6.3
Japan	0.1	0.6	0.8

Source: IMF WEO Update, January 2015.

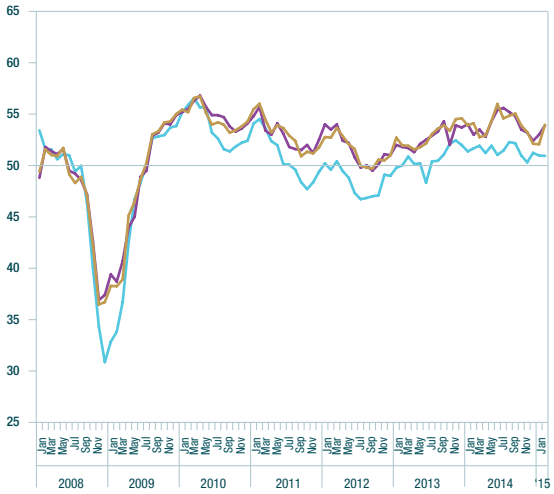
f Forecast

deteriorated significantly at the beginning of 2015 following the steep depreciation of the rouble and financial market tensions.

Global trade continues to recover slowly and has finally reached its long-term average. Recent trade data show a broad-based pickup across advanced and emerging market regions, with the main exception being the euro area, where import growth was firmly negative at the end of last year. While export volume growth in merchandise was negative for most advanced economies, service trade appears to have remained more resilient at the last reading. Looking ahead, world trade is highly dependent on the recovery in global investment.

Global inflation has fallen, particularly among advanced economies, in light of global spare capacity and the significant fall in oil prices. Annual OECD inflation decreased to 0.5 per cent in January, from 1.1 per cent in November, driven by a strong negative contribution from energy prices. Excluding

Chart 1: Global Purchasing Managers' Index



Source: Markit.

Note: For PMI indicators, above 50 represents expansion, below 50 represents contraction.

Table 2: Inflation in selected economies, 2014 and forecasts for 2015 and 2016.

	Percentage Change		
	2014	2015[f]	2016[f]
Euro Area	0.5	0.6	1.0
United States[a]	1.7	1.4	2.0
United Kingdom	1.6	1.8	2.1
China	2.1	2.6	3.0
Japan	2.9	1.8	1.6

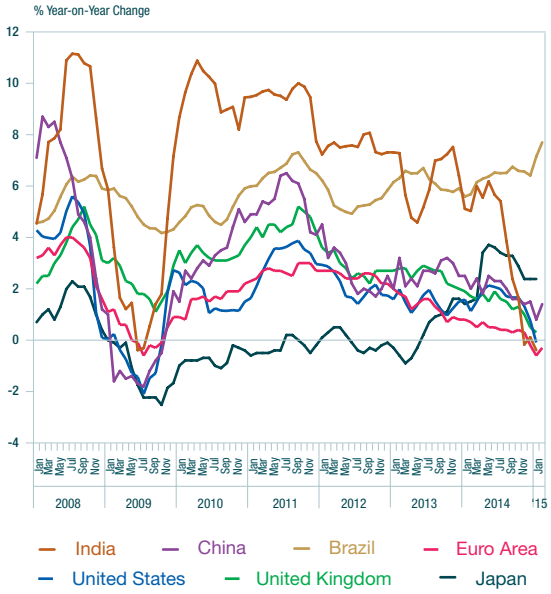
Source: OECD Economic Outlook no.96.

a based on the CPI measure of US inflation. Other rates are HICP inflation rates.

e estimated

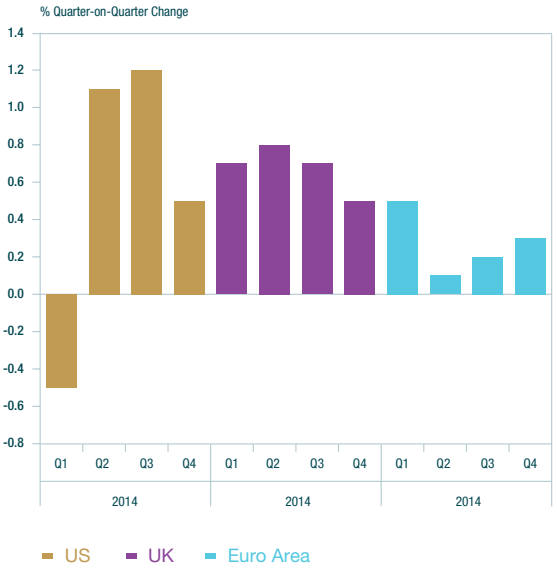
f forecast

Chart 2: Selected Global Inflation Rates



Source: Thomson Reuters Datastream.

Chart 3: GDP Growth Rates



Source: Thomson Reuters Datastream.

food and energy, annual OECD inflation remained stable at 1.7 per cent. Disinflation has become a feature in the US as headline CPI inflation has slowed since November, and turned negative in January for the first time since October 2009, mostly driven by lower oil prices. Inflation dynamics in Japan are also very subdued with headline and core inflation (excluding the direct impact of the April VAT hike) remaining unchanged in January at 0.3 per cent and 0.4 per cent, respectively. Weak domestic cost growth has also continued to pull down UK inflation which was 0.3 per cent in January, down from 0.5 per cent in December and 1.2 per cent since September. It is well below its 2 per cent target. Unit labour costs grew marginally, as subdued productivity growth was only just outpaced by pay growth. A disinflationary trend in the euro area continues, driven by lower commodity prices, especially for energy, and the sluggish economic environment.

Box A: The ECB's Public Sector Purchase Programme

Rebecca Stuart [1]

On 21 January 2015, the Governing Council of the ECB announced a public sector purchase programme (PSPP) which would entail the purchase of euro area sovereign bonds. Combined with other programmes, the Governing Council aims to purchase in excess of €1 trillion of securities over 18 months. The PSPP was announced as the headline inflation rate in the euro area became negative, and it aims to return inflation to a path consistent with the ECB's stated target of below, but close to, 2 per cent. This Box discusses the PSPP, placing it within the suite of asset purchase programmes the Eurosystem is conducting, discussing the Governing Council's reasoning in implementing it, and outlining some of its key features.

1 Monetary Policy Division

Box A: The ECB's Public Sector Purchase Programme

Rebecca Stuart

On 5 June 2014, the Governing Council announced a package of measures to ease the monetary stance.[2] That package included intensifying preparatory work related to the outright purchases in the asset-backed securities (ABS) market. On 4 September 2014, the Governing Council announced that the Eurosystem would purchase simple and transparent ABSs and covered bonds issued by euro area financial institutions. These were referred to separately as the Asset Backed Securities Purchase Programme (ABSPP) and the third covered bond purchase programme (CBPP3).[3]

Both of these announcements were made in the context of downward revisions to ECB staff inflation projections and falling inflation. Through the end of the 2014 and into early 2015, many indicators of actual and expected inflation in the euro area drifted downwards. The Governing Council noted that since 'potential second-round effects on wage and price-setting threatened to adversely affect medium-term price developments, this situation required a forceful monetary policy response'.[4] Furthermore, the sharp decline in crude oil prices had reinforced market expectations of lower inflation and a more accommodative monetary policy in the euro area.[5] In addition, economic slack remained sizeable and money and credit developments were subdued. As a result, on 21 January 2015 the Governing Council announced that it was launching an expanded asset purchase programme, adding a public sector purchase programme (PSPP) to the existing ABSPP and CBPP3 programmes.

The aim of the programme was to fulfil the ECB's price stability mandate, and to mitigate the risk of a too prolonged period of low inflation by firmly anchoring medium to long-term inflation expectations. With interest rates at their lower bound, the Governing Council intends that the expansion of the ECB's balance sheet, and the easing in the monetary stance that this entails, will improve the financing conditions for firms and households in the euro area.[6] Furthermore, it is intended that the programme will reinforce the Governing Council's forward guidance and highlight the differences in the monetary policy cycle between major advanced economies.

The Governing Council has stated that monthly purchases of €60 billion of public and private sector securities will continue until September 2016 or until it believes that the inflation path is consistent with rates in line with the ECB's medium term target.[7] Programme purchases will be of bonds issued by euro area central governments, agencies and European institutions, and they will take place in secondary markets. With regard to agencies and institutions who sell assets to the ECB, the intention is that these institutions will buy other assets and extend credit to the real economy. In terms of central government debt, each National Central Bank (NCB) will focus exclusively on its home market, with purchases determined by the ECB's capital key.

Public sector securities must have a remaining maturity of between 2 and 30 years at the time of purchase. The Eurosystem will be pari passu with private investors in terms of creditor treatment. To ensure that the Eurosystem does not obtain a blocking minority in the event of a debt restructuring involving collective action clauses, the securities will also be subject to an issue limit of 25 per cent, and an issuer limit of 33 per cent. The issuer limit is also intended to 'safeguard market functioning and price formation as well as to mitigate the risk of the ECB becoming a dominant creditor of euro area governments'.[8] Purchases of securities of European institutions (which will be 12% of PSPP purchases) will be subject to loss sharing, but NCBs' purchases of sovereign bonds will not.

Purchases under the programme began on 9 March 2015. Weekly and monthly reports listing holdings of securities purchased under the programme, are available on the ECB's website.[9]

2 These measures were previously discussed in Box B: Recent Monetary Policy Measures, Central Bank of Ireland Quarterly Bulletin No 3, 2014.

3 On the same day the Governing Council also lowered the interest rate on main refinancing operations by 10 basis points to 0.05%, the rate on the marginal lending facility by 10 basis points to 0.30% and the rate on the deposit facility by 10 basis points to -0.20%.

4 See press statement, 22 January 2015: http://www.ecb.europa.eu/press/pr/date/2015/html/pr150122_1.en.html

5 Referred to in the Account of the January 21-22 Governing Council meeting. See: http://www.ecb.europa.eu/press/accounts/2015/html/mg150219.en.html

6 Specifically, the fall in sovereign bond yields associated with increased demand due to ECB purchases should spill over to prices for many asset classes, easing financing conditions.

7 The medium term target is inflation of below, but close to, 2 per cent.

8 See Q&A on PSPP: https://www.ecb.europa.eu/mopo/liq/html/pspp-qa.en.html

9 See here: https://www.ecb.europa.eu/press/pr/wfs/2015/html/index.en.html

Table 3: Contributions of Expenditure Components to Quarterly Change in Euro Area GDP

	2014			
	Q1	**Q2**	**Q3**	**Q4**
Consumption	0.1	0.1	0.3	0.2
Government	0.0	0.0	0.1	0.0
Investment	0.1	-0.1	0.0	0.1
Inventories	0.1	0.0	-0.1	-0.2
Exports	0.2	0.6	0.7	0.4
Imports	-0.2	-0.5	-0.7	-0.2
GDP	**0.3**	**0.1**	**0.2**	**0.3**

Source: Eurostat.

Section 1: Euro Area

Economic Growth – Recent Developments

The euro area expanded by 0.3 per cent in the final quarter of 2014, having expanded by 0.2 per cent in Q3 (Eurostat, 2015). For 2014 as a whole, GDP rose by 0.9 per cent, which follows a contraction of 0.5 per cent in 2013. Final quarter growth was held back by developments in France, Italy, Austria and Finland. A return to strong growth in Germany was driven primarily by domestic demand especially from households who markedly increased their final consumption expenditure. While exports of goods and services increased, imports rose to a similar extent in Germany. Several non-core EU countries recorded solid growth as structural reforms have begun to take effect.

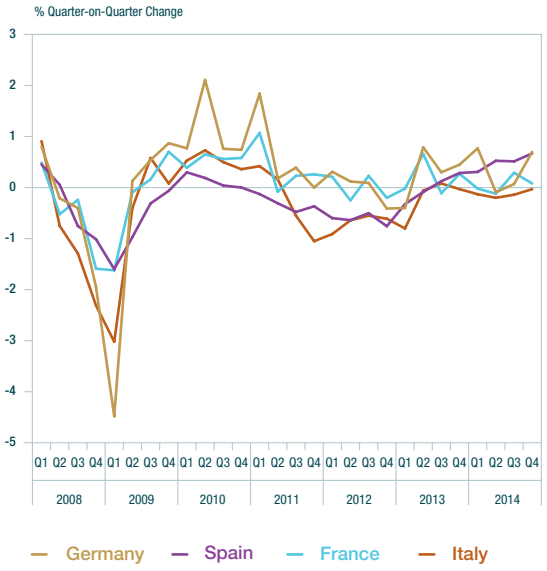
Euro area growth was fairly balanced across expenditure components (Table 3). Consumer spending picked up during the course of 2014 and posted a seventh consecutive increase in the final quarter but fell back slightly to growth of 0.4 per cent in Q4. Coupled with a modest increase in government spending, investment returned to positive growth – significantly in Germany. The pick-up in household spending growth is likely to be sustained in the coming quarters as it arises against a backdrop of falling unemployment and slightly better, albeit weak, income growth. The contribution from net exports to GDP growth also turned positive in the latest quarterly data despite export growth weakening from 1.5 per cent in Q3 to 0.8 per cent in Q4, reflecting the prevailing muted world trade conditions. A decline in imports contributed positively to overall GDP and can be related to the sluggish situation of investment in gross fixed capital formation.

Survey and monthly activity data for the opening quarter of 2015 point towards a continuation, and possible slight improvement, on the modest final quarter growth in GDP. In January compared with December, the seasonally-adjusted volume of retail trade rose by 1.1 per cent in the euro area with the strongest increases recorded for Germany, Portugal and Slovenia. Despite a setback in January, the trend in euro area industrial production is picking up. In the latest three months, production rose 0.7 per cent compared to the previous three months, which is the best performance seen for a year.

Recent survey data in the form of the EU Commission's economic sentiment index (ESI), continue to point to a pick-up in the euro area. The positive development was fuelled mainly by more optimistic consumers with no change for industrial, services and construction sentiment between the January and February readings. Among the largest euro area economies, the ESI improved most in Italy and Spain while it declined in Germany and the Netherlands. At the same time, euro area PMI data show service sector economic activity is improving but the outlook is more nascent for the goods-producing sector.[1] At 51.0 for the euro area as a whole, the manufacturing PMI showed the sector barely expanding in February. Within that, different parts of the manufacturing economy are moving at different

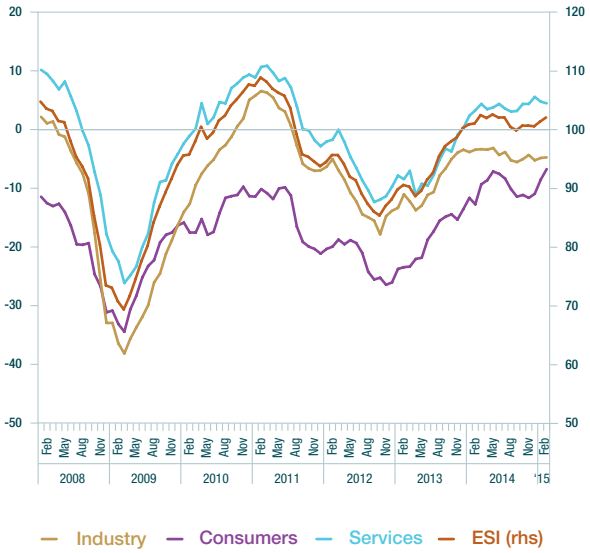
1 The PMI is a diffusion index with a value greater than 50 indicating an expansion in output with a value less than 50 indicating a contraction.

Chart 4: Euro Area GDP Growth



Source: Thomson Reuters Datastream.

Chart 5: Economic Sentiment Indicator & Selected Components



Source: European Commission.

speeds. Germany, the Netherlands and Italy are managing very small rates of expansion. France, Greece and Austria are all seeing their manufacturing economies contract again in February. The indication from other business and investment surveys is that, despite a highly uncertain global environment, the positive impact of the weaker currency on both export prospects and investment intentions is widely expected from March 2015.

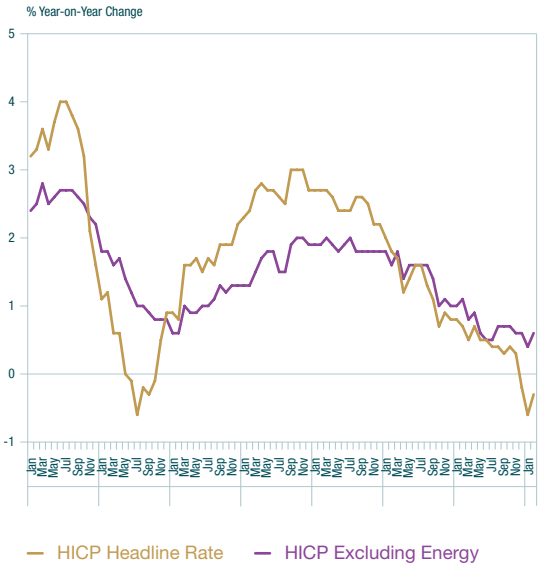
Euro area employment increased by 0.1 per cent in Q4, while labour productivity per person employed has increased by 0.2 per cent on an annual basis. The unemployment rate decreased by 0.1 percentage points to 11.2 per cent in January 2015, following similar declines in the two previous months. Among Member States, the lowest unemployment rates in January were recorded in Germany (4.7 per cent) and Austria (4.8 per cent) and the highest in Greece (25.8 per cent in November) and Spain (23.4 per cent). Youth unemployment remains stubbornly high in the euro area, most notably in the southern periphery, while long-term unemployment also remains elevated. Survey data point to continued moderate employment growth in the final quarter of last year and in Q1 2015.

Economic Growth – Outlook

According to ECB staff projections, euro area GDP is set to maintain a low rate of growth during the first quarter, with the pace of growth likely to pick up towards the end of 2015. The sharp fall in oil prices will likely have a substantial upward impact on real disposable income. Activity will also be increasingly supported by the less sluggish external demand, and the impact of the depreciation of the euro. A gradual recovery in domestic demand is expected as the year progresses. The drag on private consumption from high unemployment rates in some countries is expected to attenuate slowly, while ample spare capacity could continue to hold back investment spending. Demand from the euro area's main trading partners is expected to hold its current pace, allowing net exports to augment growth, albeit at a very modest rate.

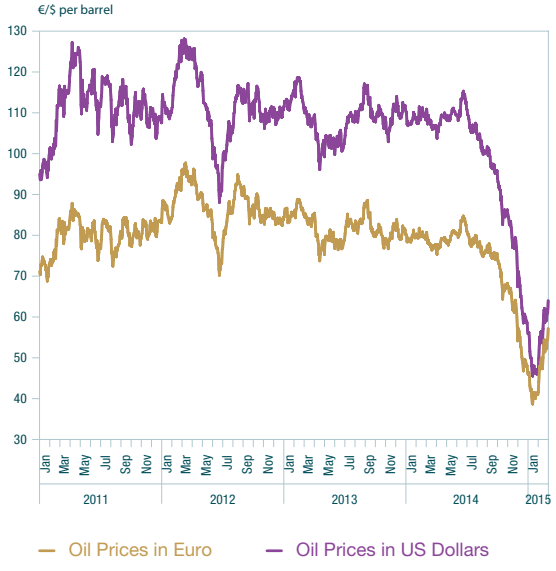
The ECB's recent monetary policy measures are expected to support a pick-up in investment. The expanded asset purchase programme will have a direct impact on market yields, the exchange rate of the euro and equity prices. The drag on investment following necessary deleveraging has diminished as indicators show

Chart 6: Euro Area Inflation



Source: Thomson Reuters Datastream.

Chart 7: Oil Prices – Brent Crude



Source: Thomson Reuters Datastream.

a return to more sustainable levels of corporate indebtedness. Government consumption, reflecting less fiscal consolidation across the euro area, is expected to pick up slightly in 2015. Consumption is expected to contribute most as labour markets stabilise, fiscal effects wane and real disposable income improves. Imports are expected to pick up throughout the year in response to growing domestic demand with the effect that these could neutralise the growth contribution of exports, especially if these have high import content. As such, the net trade position may only make a marginally positive contribution to GDP growth during 2015.

In their March *"Broad Macroeconomic Projections Exercise"*, ECB staff substantially revised up their forecast for 2015 to 1.5 per cent, while projecting 1.9 per cent growth in 2016. The risks to the forecasts are judged, however, to be slightly on the downside. In particular, external factors including a weaker outlook for exports reflect a weaker pace of euro area foreign demand over the projection horizon. With the pace of potential output estimated to only reach 1 per cent in 2017, the output gap will close only slowly.

Inflation – Recent Developments

Having been persistently low for some time, headline year-on-year HICP inflation in the euro area declined sharply in the months around the turn of the year. Inflation fell to a joint record low of -0.6 per cent in January 2015 and was -0.3 per cent in February. The primary driver of the decline in headline inflation related to the path of the energy component and the pass-through of the fall in the international price of oil. Relative to headline inflation, core inflation displays a more gradual downward trend, reflecting the fact that lower food and energy prices account for a significant proportion of the decline in euro area headline inflation rates over the past two years. Nevertheless, HICP excluding unprocessed food and energy reached a record low of 0.6 per cent in February 2015. Of the two sub-components that make up this measure of core inflation, services inflation has been considerably stickier, recording a rate of 1.2 per cent in February. Non-energy industrial goods inflation, on the other hand, remained in negative territory with a reading of -0.1 per cent in February.

Based on developments at the early stages of production the outlook for inflation remains

subdued. Producer price inflation has been in negative territory for twenty-two consecutive months. Producer price inflation (excluding construction) declined by 3.4 per cent year-on-year in January 2015. The most recent soft data also points to weak price pressures: both PMI input and selling prices in the manufacturing sector indicate falling prices, with a reading of 48.5 and 44.7, respectively, in February 2015. Furthermore, according to the PMI, selling prices in the services sector have been falling for 42 months. Labour cost growth remained weak in the third quarter of 2014. Both total hourly labour costs and compensation per employee fell to 1.1 per cent year-on-year from 1.4 per cent the previous quarter. Meanwhile, unit labour costs increased marginally to 1.1 per cent, driven principally by lower labour productivity growth.

Inflation – Outlook

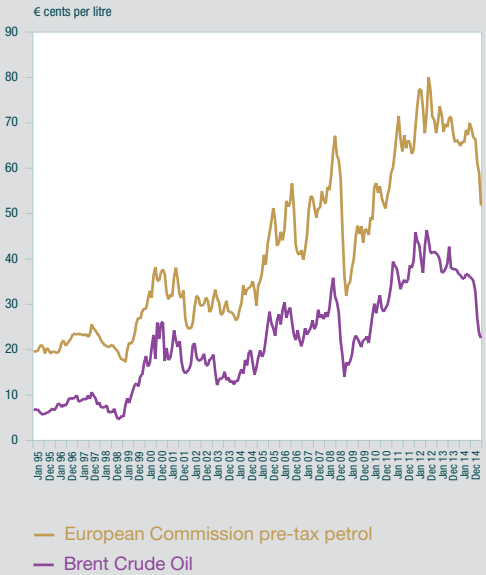
Euro area inflation is expected to remain low in 2015 and increase thereafter. According to the March 2015 Eurosystem staff macroeconomic projections for the euro area, annual HICP inflation is expected to be zero per cent in 2015, 1.5 per cent in 2016 and 1.8 per cent in 2017. Relative to the previous projections, the inflation forecast for 2015 has been revised down considerably, mainly reflecting the decline in oil prices. The 2016 projection has been revised upwards, taking into account the expected impact of the recent monetary policy measures.

Box B: Are there asymmetries in the oil price pass through to retail petrol prices in the euro area?

John Larkin

It is often believed that the prices charged for oil-related consumer products such as petrol increase rapidly when global oil prices rise but are less responsive when oil prices fall. This question has arisen once again following the recent sharp decline in oil prices. In this Box we test for such asymmetric pricing behavior between crude oil prices and retail petrol prices at the euro area aggregate level and find no statistically significant evidence of this so called “rocket and feathers” theory.

Box B Chart 1: Euro area pre-tax petrol prices and Brent crude oil



Source: European Commission, Datastream and author’s calculations.

There has been increased interest in oil prices in recent years partly due to the large price swings that have occurred. Consumers are particularly sensitive to the price of oil based products such as petrol and diesel relative to other goods. Part of the reason for this is that, given the volatility of oil prices, the movements in recent years can make a sizable impact on consumer’s disposable income. Perhaps this sensitivity contributes to the feeling that prices increase like a rocket but fall like a feather.

A large number of studies have examined whether asymmetric pricing behavior exists between oil prices and a range of consumer petroleum products. The original study by Bacon (1991) found evidence of asymmetry for the UK petrol market. More recent studies relating to the euro area such as Meyler (2009) and Clerides (2010) find limited evidence of asymmetries in a small number of euro area countries and, in the case of Meyler, no significant evidence on the euro area aggregate. Bermingham and O’Brien (2010) find no evidence in the case of the UK and Ireland.

Box B: Are there asymmetries in the oil price pass through to retail petrol prices in the euro area?

John Larkin

While there are a number of methodologies for testing for asymmetric pricing behaviour, here we estimate a simple Error Correction Model, using Engel-Granger's (1987) two step method, allowing for asymmetries between upstream and downstream oil prices.[1] As upstream prices we use monthly Brent crude oil prices and as downstream prices we use pre-tax retail petrol prices for the euro area as supplied by the European Commission Oil Bulletin.[2]

An error correction model (ECM) is appropriate when two non-stationary time series have the same trend, that is, they are co-integrated. Standard diagnostic tests confirm that crude oil prices and retail petrol prices are non-stationary and co-integrated.[3] Following Engle and Granger (1987), in the first step, we estimate the long run relationship between the variables, where PC_t is the consumer price of petrol and PO_t is the price of crude oil (equation (1)). The residual from this regression provides us with an error correction term (ε), which are estimates of the deviation from the long run equilibrium.

$$PC_t = \alpha + \phi PO_t + \varepsilon_t \quad (1)$$

In the second step, equation (2) specifies that any changes in PC_t come from either short-term or long-term effects. β is the short-run adjustment coefficient, which measures the response that can be attributed to the change in the refined price of oil, PO_t. θ is interpreted as the coefficient that measures the speed of adjustment to the long-run equilibrium (ε).

$$\Delta PC_t = \gamma + \theta\varepsilon_{t-1} + \eta\,\Delta PC_{t-1} + \beta\Delta PO_{t-1} + \upsilon_t \quad (2)$$

The above ECM model assumes that the response to both positive and negative shocks is the same, however. To test the 'rocket and feathers' hypothesis, it is necessary to move away from the symmetric ECM to an asymmetric ECM. Here, we use an extension of Clerides (2010), equation (3), which specifies the response of PC to positive and negative shocks to the variables on the right hand side. ΔPO^+ and ΔPO^- are defined as positive and negative changes in the price of crude oil respectively.[4] Similarly ε^+ and ε^- are defined as positive and negative deviations from the long run equilibrium. We can conclude that there is evidence of asymmetry if the coefficients on the positive and negative terms are statistically different from each other.

$$\Delta PC_t = \gamma + \theta^+\varepsilon^+_{t-1} + \theta^-\varepsilon^-_{t-1} + \eta\Delta PC_{t-1} + + \beta^-\Delta PO_{t-1} + \beta^+\Delta PO_{t-1} + \upsilon_t \quad (3)$$

Table 1 summarises the key findings, displaying the coefficients on the short-run pass through and the catch up speed terms in equation (3). The coefficients β^+ and β^- are statistically significant and positive as expected. The difference between the positive and negative coefficients is not statistically different from zero, based on a chi square test. Therefore there is no evidence of asymmetry. The coefficients θ^+ and θ^-, which measure the catch up speed, are significant and negative as expected. Again, a chi squared test indicates that the coefficients are not statistically different from each other and therefore there is no evidence of asymmetry.

Table 1: Coefficients on short-run pass through and on the catch up speed

β - short run pass through			*θ - catch up speed*		
Positive	Negative	Difference	Positive	Negative	Difference
0.554 (0.071)	0.677 (0.082)	0.133 (0.261)	-0.501 (0.067)	-0.443 (0.067)	0.058 (0.531)

Standard errors in parenthesis, significance level of chi-squared test reported for difference column.

1 For a comprehensive review of the literature and various approaches to modelling asymmetric pricing behaviour in petrol and diesel markets see Honarvar (2010).

2 We use data from February 1995 to December 2014. Much of the recent literature uses refined oil prices instead of crude oil.

3 We use the augmented Dick-Fuller unit root test and the Engel Granger co-integration test.

4 Including the contemporaneous change in crude oil prices and numerous lags in the specification does not materially change the results.

Box B: Are there asymmetries in the oil price pass through to retail petrol prices in the euro area?
John Larkin

In conclusion, we have estimated a simple model to illustrate that at the euro area aggregate level there is limited evidence of the "rocket and feathers" theory that consumer petrol prices are more sensitive to increases in global oil prices than to decreases. This result is in line with the recent literature. However, the presence of asymmetric pricing behaviour at a regional level cannot be discounted, given that this analysis is based on aggregate data. Furthermore, this is a very simple model and statistically significant asymmetries might be found using more sophisticated techniques.

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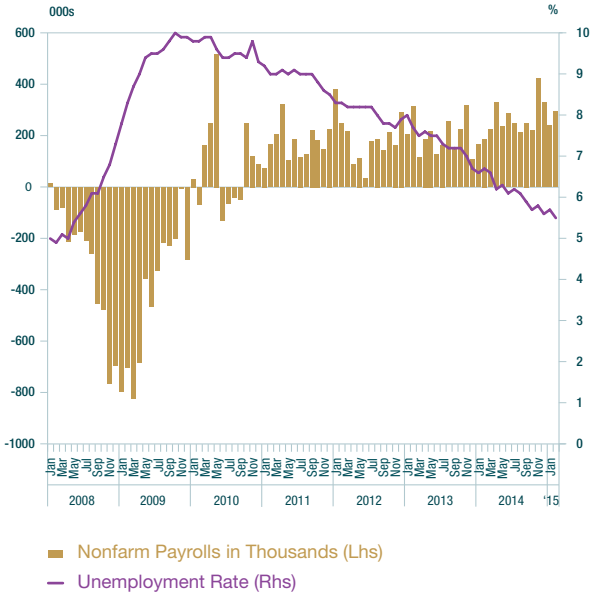
Section 2: External Environment

United States

Activity in the United States remained strong in the last quarter of 2014, led by strong growth in domestic demand, particularly personal consumption and residential investment. The upturn in economic activity continues to be supported by an accommodative monetary policy and a more neutral fiscal policy. The second estimate of real GDP, released by the Bureau of Economic Analysis (BEA), indicated that US growth grew at an annualised rate of 2.2 per cent in the fourth quarter of 2014; revised downwards from the advance estimate and lower than the 5.0 per cent reported for the third quarter of 2014.

The labour market has been improving, with better than expected non-farm payroll readings in the opening months of 2015. The housing market has also continued to show signs of buoyancy. Looking ahead, recent hard and survey data have been consistent with continued robust economic activity. Business survey indicators have remained positive with both the manufacturing PMI and non-manufacturing ISM remaining firmly in expansion territory. Turning to price developments, consumer price inflation has declined sharply, mostly driven by lower oil prices and the US dollar appreciation. Headline and core CPI declined by 0.7 per cent and 0.1 per cent, respectively, in January 2015. With energy prices falling by almost 10 per cent (and the gasoline index by 18.7 per cent) month-on-month in January, headline inflation turned negative for the first time in January to -0.1 per cent. After its March meeting, the Federal Open Market Committee (FOMC) reaffirmed its view that the current zero to a quarter per cent target range for the federal funds rate remains appropriate. Based on its current assessment, the Committee anticipates that it will be appropriate to raise the target range when further improvement in the labour market is coupled with inflation moving back to its 2 per cent objective over the medium term.

Chart 8: US Labour Market



Source: Bureau of Labor Statistics, US Department of Labor.

Looking forward, inflation is projected to decline further, reaching a trough in the second quarter of 2015, followed by a gradual increase. The on-going recovery is expected to be slightly less strong due to weaker external demand, a stronger dollar and less pronounced housing wealth effects. Lower oil prices will help sustain the upturn in domestic demand, supported by fading headwinds from fiscal policy and household balance sheet repair. According to the latest forecasts from the IMF World Economic Outlook, real GDP is expected to show an outturn of 2.4 per cent for 2014 and expand by 3.6 per cent in 2015 and 3.3 per cent next year.

United Kingdom

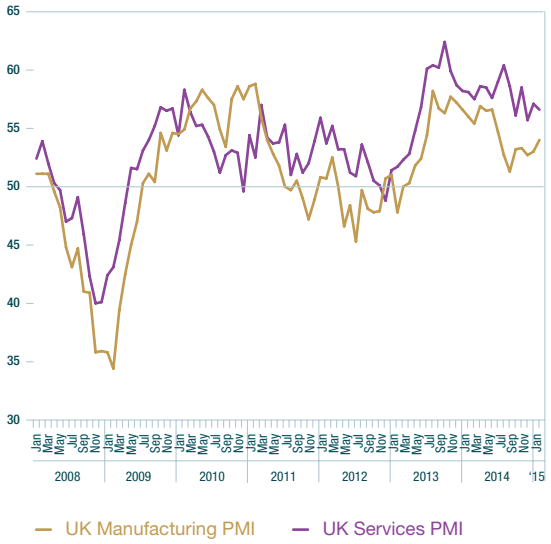
According to the Office of National Statistics' (ONS) most recent estimate, the UK economy grew by 0.5 per cent during the final quarter of 2014 compared with the previous quarter, representing the eighth consecutive quarter of growth. The expansion in economic activity was largely attributed to growth in manufacturing and services. Agricultural and industrial output also contributed positively to economic growth, while construction was the only component to decrease. The trade balance deficit narrowed and the largest contribution to GDP growth, at 0.6 percentage points, came from net trade, followed by household final consumption expenditure which contributed 0.3 percentage points. Government consumption was flat while investment and the change in inventories made negative contributions to Q4 growth.

The expansion in the labour market continued between October and December 2014, with employment rising by 103,000, compared with the previous three months. The unemployment rate continued to improve gradually, falling by 0.3 percentage points to 5.7 per cent over the same period, which is the lowest level of unemployment since 2008. According to the ONS, the annual increase in average UK house prices was 9.8 per cent in December, a decrease from 12.1 per cent in the year to September. The increases in UK house prices continue to be driven largely by increases in the property market in London of 13.3 per cent, and to a lesser degree in the East and South East.

Sentiment indicators relating to Q1 2015 provide positive signals. With regard to the outlook for growth, the manufacturing PMI for February rose from 53.1 in January to a seven-month high of 54.1. Moreover, the largest monthly jump in new orders since November was also recorded. The PMI for services, however, slowed but remained above its long-term trend of 55. Construction activity continued to retain its strong performance but has declined in recent months, falling from 67 in August to 61 in February. The IMF has forecast UK GDP growth to be 2.7 per cent for 2015, falling back to 2.4 per cent for 2016 (Table 1).

The consumer price index of annual inflation decreased from 0.5 per cent in December to 0.3 per cent in January. This is a record low. The most significant contribution to the latest decrease in inflation was a decline in

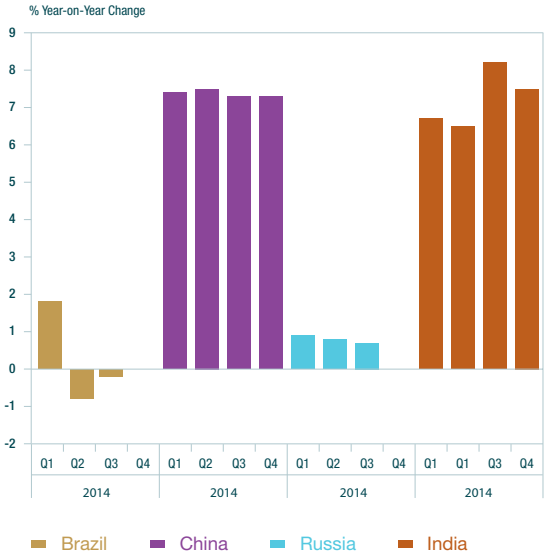
Chart 9: PMI Indicators for the UK



Source: Markit.

Note: For PMI indicators, above 50 represents expansion, below 50 represents contraction.

Chart 10: BRIC GDP Growth Rates



Source: Thomson Reuters Datastream.

transport costs and the price of food and non-alcoholic beverages. Smaller price falls than a year previous for clothing partially offset the reduction.

No changes were made by the Bank of England's Monetary Policy Committee (MPC) to the bank rate at its March meeting, which continues to remain at 0.5 per cent and marks the six-year anniversary of record-low interest rates. In the short-term, inflation is expected to remain below 1 per cent due to the decline in oil and food prices. Inflationary pressure in the medium-term will depend on the persistence of these effects, as well as the appreciation of sterling and developments in wage growth.

Japan

According to the Government's second estimate, real GDP expanded by 0.4 per cent quarter-on-quarter during Q4 2014. The resumption in economic growth was mainly attributed to higher exports which expanded by 2.8 per cent quarter-on-quarter. Capital expenditure fell 0.1 per cent compared with the previous quarter while private consumption rose by 0.5 per cent.

Hard and sentiment data suggest a further expansion in economic activity for the first quarter of 2015. Industrial production expanded by 3.6 per cent month-on-month during January following an increase of 1.0 per cent in December. The manufacturing PMI remains above 50 – which is consistent with an expansion in economic activity – although it dropped from 52.2 in January to 51.5 in February. Accommodative policy responses – additional quantitative and qualitative monetary easing and the delay in the second consumption tax rate increase – are expected to support the rebound in activity during 2015. The IMF has forecast Japanese GDP growth to strengthen to 0.6 per cent in 2015 from 0.1 per cent in 2014 (Table 1).

CPI inflation has stabilised in Japan and stood at 2.4 per cent in February. The weakness in the yen during the fourth quarter of 2014 may provide a further boost to inflation in the coming quarters. The growth of the monetary base continues to slow, to 36.7 per cent on an annualised basis in February, from 37.4 per cent in January and 51.9 per cent in January 2014. At its January and February meetings, the Bank of Japan's policy board voted to continue with its current programme

of asset purchases. However, to stimulate bank lending, the Bank of Japan will increase the amount of funds that it can provide to each institution from ¥1trillion to ¥2 trillion as part of the Growth-Supporting Funding Facility.

BRIC Economies

The outlook for emerging markets remained subdued during the first quarter of 2015 due to weak economic conditions in Russia, the deceleration of economic growth in China, and increased vulnerabilities for oil-exporting emerging economics due to lower oil prices. According to the IMF, growth in emerging markets is expected to be stable overall, with annual economic growth, forecast to be 4.3 per cent in 2015, increasing to 4.7 per cent in 2016.

In Brazil, real GDP growth continued to decline but at a slower pace; from -0.8 per cent in the second quarter of 2014 to -0.2 per cent in the third quarter of 2014. Inflation rose to 7.7 per cent in February, up from 5.7 per cent in the same month last year, which was the highest level since May 2005. It continued to remain above the Central Bank of Brazil's inflation target of 4.5 per cent. The main policy rate of the central bank, the selic, was increased by 50 basis points to 12.25 per cent in January.

In India, GDP growth was 7.5 per cent year-on-year in the final quarter of 2014, a decrease from 8.2 per cent in the previous quarter. Inflation, as measured by the wholesale price index, fell to -0.4 per cent in January 2015, down from 5.1 per cent in the same month last year. The decline was mainly due to falling fuel prices and lower food costs. Outside of its regular monetary policy meeting, India's central bank cut its key interest rate by 25 basis points to 7.5 per cent on March 4th due to continuing disinflationary pressures. The marginal standing facility was cut to 8.5 per cent, while the cash reserve ratio was kept unchanged at 4 per cent.

In China real GDP grew by 7.3 per cent in the fourth quarter of 2014, a decline of 0.4 per cent from the same quarter of 2013. The annual decline in output growth was attributable to a slowdown in the property market and weak investment, coupled with softer global demand which impacted Chinese exports. The manufacturing PMI increased from 49.7 in January to 50.7 in February, reflecting a stabilisation in output. New export orders fell by 1.7 to 48.5 in February, indicating an expected decline.

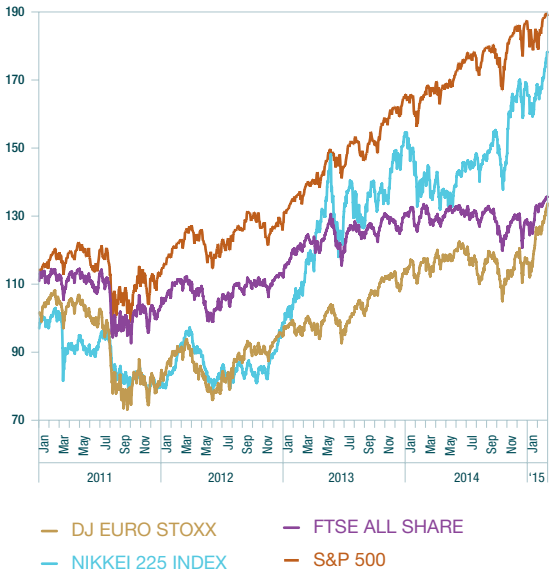
At end-January, credit and loan growth in local currency increased by 13.9 per cent, an increase of 1 percentage point from the previous month but a decline of 0.6 percentage points from the corresponding month last year. While inflation remains below the People's Bank of China's target of 3.5 per cent, consumer prices rose in February by 1.4 per cent year-on-year. The People's Bank of China cut its benchmark loan and deposit interest rates on March 1st to 5.35 and 2.5 per cent, respectively.

According to the Federal State Statistics Service, Russian GDP was 0.7 per cent in the third quarter of 2014, the third consecutive quarter of a slowdown in economic growth. Annual CPI inflation was 16.7 per cent in February and is expected to decline gradually due to weaker economic activity. The Bank of Russia cut its main interest rate twice in the first quarter of 2015, totalling 3 percentage points to 14 per cent down from 17 per cent. Further cuts are expected to occur as inflation falls further.

Section 3: Financial Market Developments

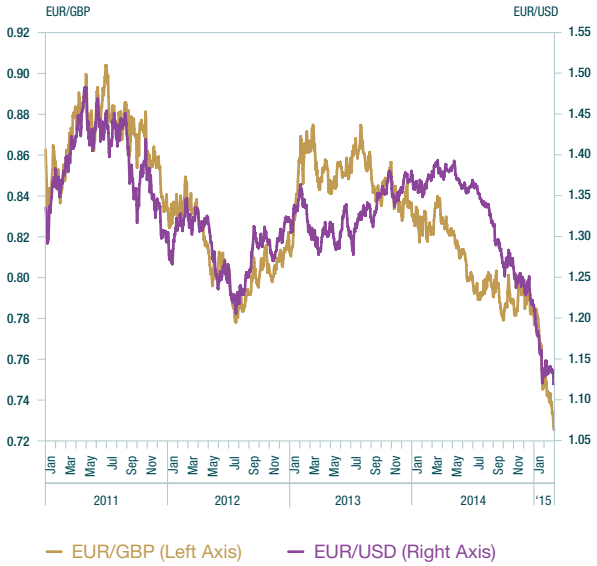
Financial market developments in the first quarter of 2015 were dominated by the ECB's long-awaited announcement of an expanded asset purchase programme including sovereign bonds. The details of the announcement were largely positively received by markets, with both the size of the programme and the pace of purchases supporting asset prices. Meanwhile, subdued inflationary pressures globally saw a number of other central banks enhance their accommodative monetary policy stance. Dovish statements by the Federal

Chart 11: International Share Price Indices (end-December 2009 = 100)



Source: Thomson Reuters Datastream.

Chart 12: Euro Exchange Rates



Source: Thomson Reuters Datastream.

Reserve and the Bank of England indicated that interest rate increases are unlikely in the immediate future. All of these developments supported positive momentum in global financial markets.

Aside from monetary policy, the other items affecting financial market developments during Q1 were oil prices and the Greek election. Oil prices began 2015 in the manner that they had finished the previous period and fell to their lowest level in 6 years in late January. Since then, prices have increased somewhat. In Greece, the uncertainty associated with the end-February deadline to agree an EU-IMF programme extension triggered a significant rise in domestic short-term borrowing costs but there was a notable absence of spillover effects to other peripheral economies. Over the period as a whole, euro area sovereign debt yields fell for both core and periphery issuers.

Equities

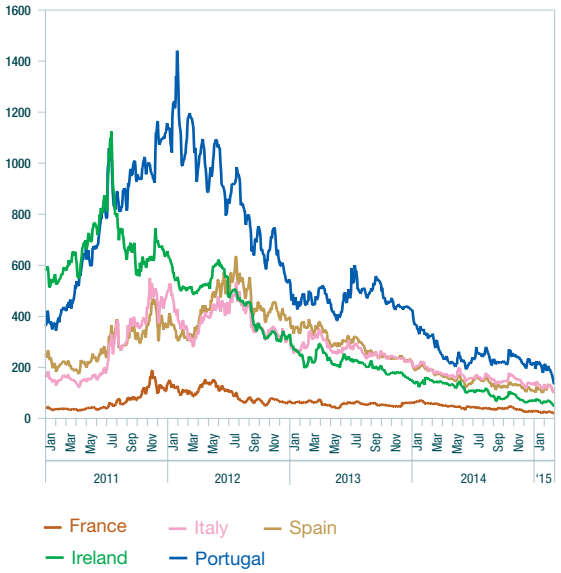
The ECB's expanded asset purchase programme has already had a positive effect on euro area equity markets, with investors expecting spillovers into demand for equity securities as a result of the portfolio rebalancing transmission channel of quantitative easing. This was reflected in an increase of 16.8 per cent in the DJ Eurostoxx index between the end of 2014 and mid-March. Elsewhere, the Japanese Nikkei 225 index again performed strongly, rising by 8.8 per cent over the review period, reaching a 15-year high. Equity market performance was supported by strong export data and improved corporate earnings, as the benefits of a weaker yen begin to show.

Record levels were also reached in the UK, with the FTSE All Share Index reaching record highs in February before retreating towards the end of the review period. Overall, the FTSE All Share finished the review period up 3.5 per cent. In the US, equity market developments were less striking, with the S&P 500 indices rising by 0.3 per cent.

Foreign Currency Developments

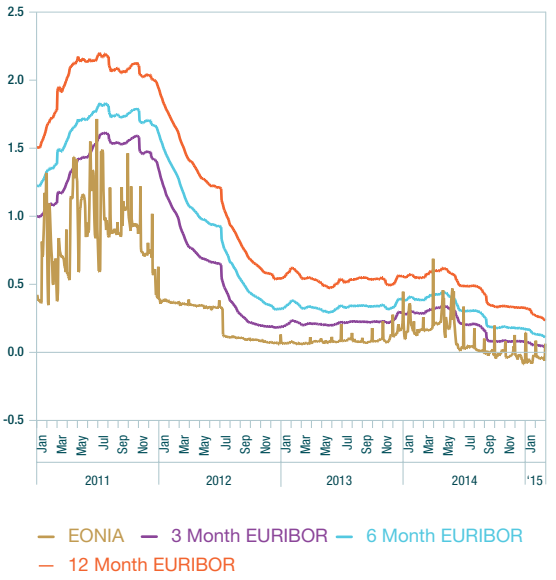
Although it had been introduced as a temporary measure, January's announcement

Chart 13: Selected Euro Area 10-Year Sovereign Bond Yield Spreads over Germany (bps)



Source: Thomson Reuters Datastream.

Chart 14: Selected Euro Area Money Market Interest Rates



Source: Thomson Reuters Datastream.

by the Swiss Central Bank that it was to remove the interest rate floor of 1.2 EUR/CHF came as a surprise to financial markets. Intraday volatility was extremely high in the immediate aftermath to the announcement, with the EUR/CHF rate falling to below 0.9 francs per euro. The rate has subsequently stabilised at slightly above parity. The removal of the exchange rate floor triggered demand for another euro-pegged currency, the Danish crown. This additional demand forced the Danish authorities to ease rates four times in less than three weeks, reducing the deposit rate to -0.75 per cent to maintain the peg.

The ECB's announcement on asset purchases has furthered weakened the euro, with the USD\Euro exchange rate reaching its lowest level since 2003 in early March. Similarly, the euro weakened against the pound sterling, reaching a 7-year low. Overall, the euro's nominal effective exchange rate fell by 8.8 per cent over the review period.

Commodities

Over the first two weeks of 2015, crude oil prices declined by 19 per cent to $45 per barrel, reaching the lowest level since 2009. Since then, the price has recovered somewhat, reaching $60 by late February. This upturn has been supported by more encouraging macroeconomic data and some improved fundamentals in the oil market. The forward curve remains in contango for all maturities, with forward prices above daily spot prices.

Sovereign Debt Markets

The indication that ECB purchases of sovereign debt will be limited to securities in the 2-30 year maturity horizon had the effect of flattening the yield curve, with investors moving into longer-term securities ahead of the start of purchases at the beginning of March. Historical lows were reached in sovereign debt markets, with Germany's five year issuance cost declining and becoming negative for the first time in February. By mid-March, German 10-year benchmark yields had fallen as low as 0.2 per cent, having ended 2014 at 0.54 per cent. Despite this marked decline, both core and peripheral spreads against the German yield declined, with the Portuguese spread declining by 99 basis points over the review period. The Irish, Italian, French and

Spanish spreads declined more modestly by 26, 43, 10 and 17 basis points, respectively. The reaction of sovereign bond prices will be closely monitored over the following quarter as the Eurosystem's bond purchases develop momentum.

Money Markets

The first quarter of the year saw a rise in excess liquidity, causing EONIA to decline further towards the ECB deposit rate of -0.2 per cent. Over the period as a whole, EONIA averaged -0.04 per cent compared to -0.01 per cent in the final quarter of 2014. The downward trend held an average rate of -0.06 per cent in early March. Average rates also fell across the maturity spectrum, with EURIBOR rates of 0.05, 0.13 and 0.27 per cent for the 3, 6 and 12 month maturities, respectively.

Signed Articles

The articles in this section are in the series of signed articles on monetary and general economic topics introduced in the autumn 1969 issue of the Bank's Bulletin. Any views expressed in these articles are not necessarily those held by the Bank and are the personal responsibility of the author.

The Changing Nature of Irish Exports: Context, Causes and Consequences

Stephen Byrne and Martin O'Brien[1]

Abstract

Since the beginning of the century there have been some notable structural shifts in the composition of Irish exports: services exports have become more prevalent; the export basket has become more concentrated; and the importance of trade in intermediate goods and services has risen. At the same time there is the continuing and relatively large role of foreign-owned and export-oriented multi-national enterprises in Ireland, and some evidence of changes in the dynamics of international trade globally in recent years. These shifts pose challenges for our understanding of how Irish export growth responds to changes in demand in our main trading partners, as well as the ultimate benefit of that export growth in terms of national income. Drawing on a number of relevant data sources, this Article explores these issues in more detail, highlighting the increasing complexity of analysing the prospects and benefits of external trade in the Irish case.

1 Irish Economic Analysis Division, Central Bank of Ireland. The views expressed in this Article are those of the authors only and do not necessarily reflect the views of the Central Bank of Ireland or the ESCB. We are grateful to Diarmaid Addison-Smyth, John Flynn and Reamonn Lydon for helpful comments on previous drafts of the Article.

1. Introduction

Ireland's relatively high level of openness to international trade means that developments in external demand and export growth are crucial for our projections of the Irish economy. Sustained export growth, mostly in tandem with significant reliance on foreign direct investment, has been a feature of most sustainable economic recoveries in the history of the State, and in particular the rapid growth seen in the 1990s.

While maintaining relative price competitiveness can help maximise export growth arising from demand in Irelands main trading partners (United Kingdom, United States and the euro area), there are other global and domestic structural issues which are of relevance. These include the import content of final demand in our trading partners, the product mix of that import demand, how the Irish export basket of goods and services matches that import demand and the growth in national income that ultimately accrues from Irish exports. Alongside these are the trends towards fragmentation in the production of final goods and services across borders, or the rise of global value chains (GVCs) which as we discuss in detail below have particular relevance for the Irish economy.

All of these factors appear to have undergone some change over the past decade. In this Article we examine these changes in more detail and draw out the implications for our understanding of how Ireland's international trade is currently responding, and potentially will respond to anticipated changes in the global economy. Given the particular structure of Irish exporting industries and the relative position of Ireland in GVCs, these changes may have implications for the ultimate benefit of export growth in terms of national income. As we note below, robust growth in exports may overstate the ultimate benefit without considering the role of imported intermediate consumption. To identify these implications we analyse CSO National Accounts data as well as an internationally comparable dataset on trade in value added compiled by the OECD.

The remainder of this Article is organised as follows: section 2 summarises the main developments in the composition of Irish exports between goods and services over time and compares this with developments in import demand in our main trading partners; section 3 examines the responsiveness and intensity of imports to income growth globally and in our main trading partners, how this has changed through time and the potential implications for Irish exports given the compositional changes discussed in section 2; section 4 highlights the role of global value chains in explaining some of the structural changes in global trade intensity in recent years; section 5 looks at the importance of GVCs in the Irish context, and one element of it in particular, namely contract manufacturing; section 6 examines the implications of Ireland's participation in GVCs in terms of the ultimate benefit to national income that Ireland accrues for being highly open to trade and a hub for foreign direct investment; and section 7 concludes.

2. The composition of exports

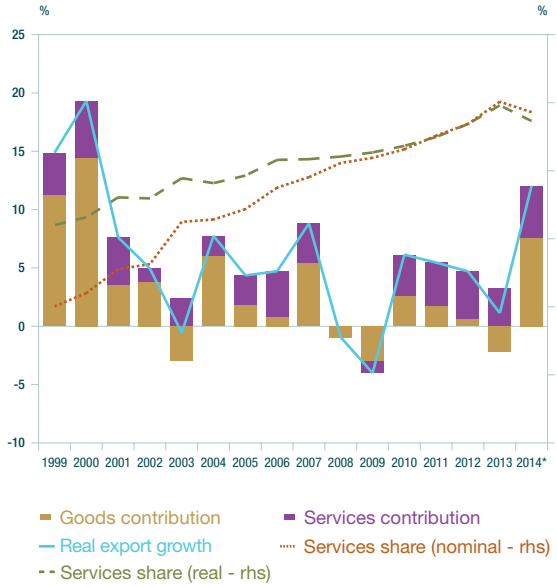
The period of strong export growth which epitomised the decade up to 2001 established Ireland's position as one of the most open economies in the world.[2] Double-digit rates of export growth at the start of this century soon gave way to more moderate increases over the period 2002-2007, as the relative competitiveness position of the economy was eroded during the credit-fuelled construction boom (Figure 1).[3] The collapse in global demand during the onset of the Great Recession (2008-2009) contributed to the contraction in exports for those years.

Two notable features of exports, while in part evident in earlier years, since 2010 developments have been the relative persistence and importance of services in driving overall export growth, and the relative volatility in goods export growth (Figure 1). Understanding both of these developments is

2 By 2000, the average of exports and imports as a percentage of GDP in Ireland was 91.4 per cent, with the equivalent measure for the OECD being 42.4 per cent.

3 Some decline in competitiveness was probably to be expected at this juncture as Ireland was considered to be "super-competitive" at the time. For a more detailed discussion of this development see Cassidy and O'Brien (2005) and (2007) and Fitz Gerald (2012).

Figure 1: Real export growth with goods and services contributions



Source: CSO and authors' calculations.

Note: *2014 figure covers the first three quarters of the year with comparison to the same period in 2013.

important in evaluating how the Irish economy now responds to growth in global demand.

Services now account for approximately half of total Irish exports, and the shift to services has been more rapid in Ireland than for global services trade as a whole (Table 1). In nominal terms, services accounted for 20.7 per cent of global exports in 2000, rising to just 21.2 per cent in 2013 (the latest available comparable data). The equivalent change from an Irish perspective was from 22 per cent in 2000 to 50.1 per cent in 2012. At the same time, Ireland's export market share as a percentage of total global exports has declined from 1.2 to 1 per cent over the period. This has masked significant differences across goods and services, with the goods export market share falling from 1.2 to 0.6 per cent and the services share rising from 1.1 to 2.6 per cent.

Large changes in the composition of Irish exports since the start of the century reflect the emergence of pharmaceutical goods, computer and information services and insurance and financial services as major contributors, at the expense of office machinery and other electrical goods (mostly computer hardware). These compositional shifts in Irish exports are proportionately larger than changes in the composition of global exports, and are also typically larger than the change in the composition of imports in our main trading partners between 2000 and 2013 (Table 1). For example, the share of chemicals and pharmaceuticals in total Irish goods exports rose by a factor of 1.7 over the period, whereas the increase in the share of these goods in the imports of our main trading partners was proportionately lower at approximately 1.3 times. On the services side, the relative importance of computer and information services in Irish services exports has always been higher than the respective import content in the euro area, UK and the US.

In contrast to their rising share in Ireland's exports, the relative importance of services in total imports of Ireland's main trading partners has not increased to the same proportion since 2000. All of these factors imply that, to date, the shift to services exports in Ireland has not been driven by a significant shift in the import composition of our main trading partners brought about by changing preferences or technologies.

At the same time there has been an increasing concentration in both Irish goods and services exports, in contrast to the global trend (normalised Herfindahl Hirschmann Index (HHI) concentration in Table 1). On the services side this is due to higher shares for computer and information activities as well as business services.[4] Both of these have some relevance for the increasing concentration that is also seen in goods exports. The latter is due to the fall in office machinery and electrical goods exports, mostly computer hardware, while pharmaceutical exports became the main driver of overall goods export growth. However in many cases, firms which had been engaged in computer hardware production, which were predominantly foreign-owned, have continued their presence in Ireland providing services to both other parts of their organisation and to final customers.[5]

4 Business services is a wide category which would include, among others, the exports of sectors such as professional scientific and technical activities and administrative and support service activities.

5 See Barry and Van Egeraat (2008).

Table 1: Share of nominal exports (World and Ireland) and imports (euro area, UK, US)

	Exports				Imports					
	2000		2013		2000			2013		
	World	Ireland	World	Ireland	euro area	UK	US	euro area	UK	US
Goods*	79.3	78.0	78.8	49.9	77.7	76.7	85.0	75.7	76.7	83.1
of which:										
Agricultural and food	9.0	9.21	9.9	12.3	10.4	9.8	5.7	11.4	11.4	6.5
Chemicals and pharmaceuticals	9.6	34.5	11.4	59.0	11.4	9.7	6.3	14.6	12.1	8.9
Office machinery and electrical	15.8	34.5	9.9	6.5	12.5	18.4	17.9	7.3	9.2	13.7
Other	65.5	21.9	68.8	22.2	65.6	62.1	70.1	66.6	67.3	70.8
Goods HHI concentration**	0.19	0.10	0.16	0.29						
Services*	20.7	22.0	21.2	50.1	22.3	23.3	15.0	24.3	23.3	16.9
of which:										
Computer and information	5.3	34.5	8.6	41.7	4.9	4.1	5.5	5.6	7.5	7.6
Insurance and other financial	8.2	19.0	9.3	16.7	6.6	5.3	10.1	1.2	9.2	15.0
Business services	21.4	17.9	26.4	28.6	7.0	16.8	11.1	7.3	25.3	20.4
Other	65.1	28.7	55.7	13.0	81.5	73.8	73.2	85.9	58.0	57.0
Services HHI concentration**	0.22	0.09	0.15	0.15						

Source: CSO, OECD and World Trade Organisation.

* National Accounts basis

** Merchandise trade (goods) and balance of payments basis (services). HHI calculation covers more categories than presented in the table.

Also the attraction of foreign direct investment (FDI) in the software and business services sectors has been perhaps one of the more successful in terms of spill-overs to domestic activity.[6] According to data in the Annual Services Inquiry (CSO), the export intensity (exports as a share of turnover) for Irish firms in business service activities was as high as that reported for foreign-owned firms. It is likely that this relates to an increasing tendency for Irish operations to provide administration and support services to affiliates in other countries in various sectors as part of the process of bringing final goods and services through increasingly fragmented stages of production.

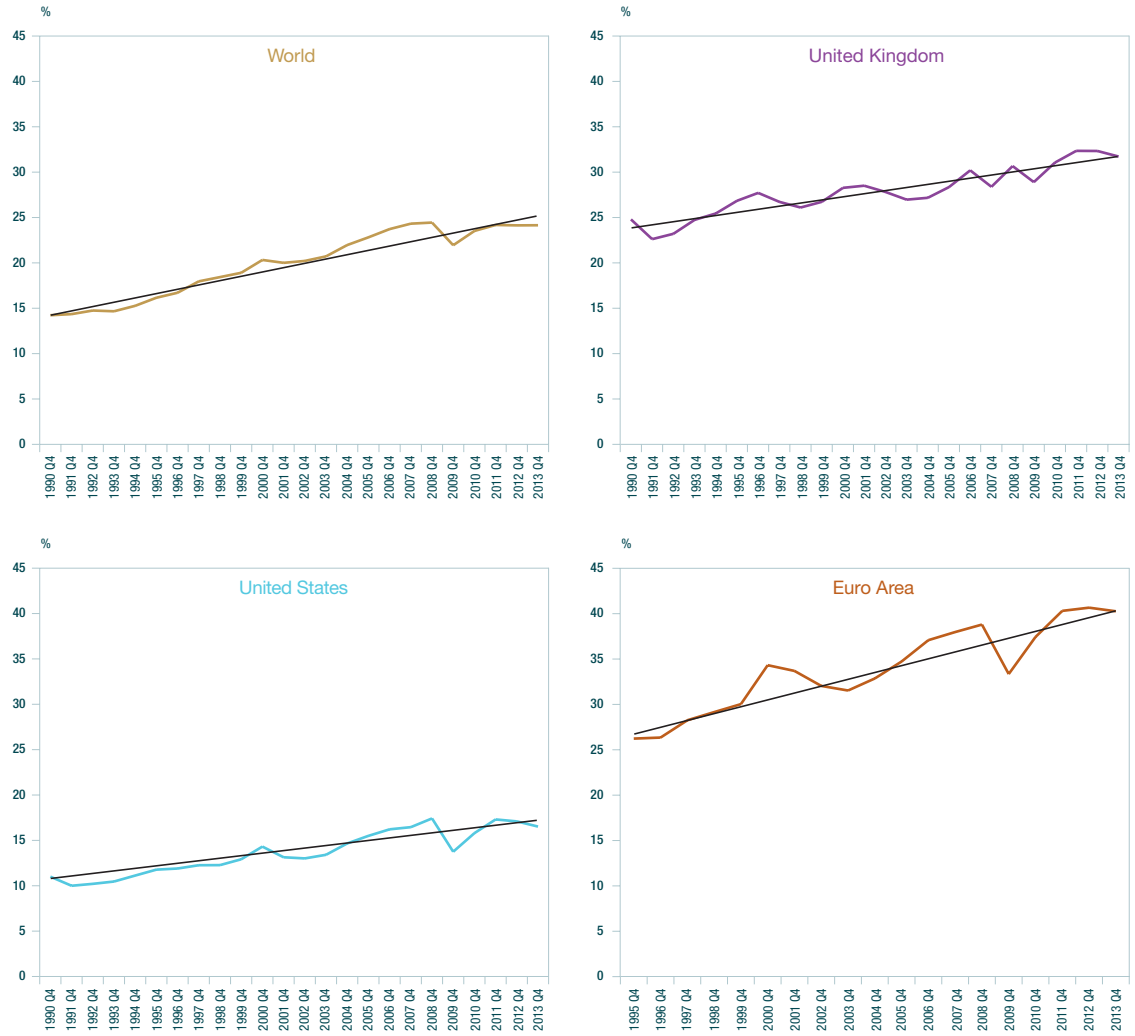
We discuss the relevance and implications of Irish entities being part of cross-border production chains in Sections 4 and 5. A key question is the extent to which the shift to services, and the increasing specialisation and participation in global value chains of Irish exports could affect the relationship between export growth and other outcomes of interest, such as employment and national income growth. The compositional shift in exports also suggests that the response of exports to changes in demand in our main trading partners may be undergoing some adjustment. This is coming at the same time as there are suggestions that trade globally has gone through some structural shift following the Great Recession. We expand on these issues in Section 3.

3. Import elasticity in Ireland's main trading partners

In order to understand how Irish exports are responding to changes in global demand

6 See Barry (2004) for an overview of Ireland's experience of FDI and Barry (2008) for a discussion on the emergence of an indigenous software service sector in part due to spill-overs from FDI.

Figure 2: Import Intensity



Source: OECD and authors' calculations.

for Irish goods and services, it is useful to highlight the main factors driving that global demand in the context of overall trends in international trade. During the global financial crisis of 2008-09 international trade contracted approximately 16 times more than global GDP (as a proxy for income).[7] Despite a rebound in 2010, international trade has in more recent years grown slower than, or on a par with, global GDP. This is contrary to trends since the 1960's in which trade has typically grown at twice the rate of global GDP. The import intensity of global GDP growth since 2009 has been below trend (Figure 2). A number of hypotheses have been put forward for the recent sluggish response of international trade, focusing on whether it is merely cyclical in nature or have the characteristics of the Great Recession led to a fundamentally lower elasticity of trade to GDP growth.[8]

On the cyclical side it has been noted that the relatively more import intensive components of GDP, namely investment and exports, have been particularly badly hit in many countries during the crisis and are recovering slowly compared with personal and government consumption. As a consequence with a recovery of investment in particular, the

7 Global trade contracted by 10.5 per cent in 2009, whereas global GDP fell by 0.6 per cent (OECD). For a detailed examination of the issues see Baldwin (2009).

8 See, for example, Bussière et al (2013), and OECD (2014).

responsiveness of international trade to global GDP growth should revert towards its historical average. More fundamentally the responsiveness of international trade to global GDP was higher than historical averages in the decade prior to the Great Recession and the factors underpinning this performance may no longer hold to the same degree. The rapid convergence of certain emerging market economies over the period prior to the crisis is unlikely to re-occur, for example. Protectionism is marginally higher in the major economies than prior to the crisis and the rapid increase in global value chains in final goods and services production in the years prior to the crisis may now ease.[9] Finally, increased financing constraints may not have just altered the capital stock level during the crisis but also contributed to a lower investment rate in the recovery and beyond.

It is likely that at a global level the medium term elasticity of trade to GDP growth will be lower than that seen through to the 2000s. These global trends also appear relevant in the responsiveness of imports to GDP growth in Ireland's main trading partners the United States, the United Kingdom and the euro area, but probably to a lesser extent. The import intensity of recent GDP growth in these trading partners has not fallen as much below trend as that for the world as a whole (Figure 2). This is due to the particular contraction in trade for emerging market economies in recent years.

However some changes in the import response to GDP growth in our main trading partners is evident. In Figure 3, a simple long-run elasticity of annual import growth to annual GDP growth is presented, along with this elasticity estimated over a five year rolling window and the estimate from the last four quarters of National Accounts for each of these markets.[10] The long-run elasticity ranges from 1.8 (UK) to 2.6 (euro area). In all three instances, the rolling 5 year estimates are above the long run averages in most recent years, which is due to the relatively large fall in imports when GDP contracted in 2009. As the impact of that year falls out of the rolling estimate, the 5-year average has now begun to turn lower. Similarly the most recent point estimate of the elasticity (shown by the dots in the chart) is significantly below the long-run value, indicating that the import response to GDP growth in Ireland's main trading partners may be lower over the medium term than in the years preceding the crisis.

Clear differences are also evident in the responsiveness of goods and services imports to GDP growth in the UK, US and euro area. The services import elasticity is lower than that of goods in all three markets at between 0.8 and 1.6 compared to 1.9 to 2.9 for goods. The services import elasticity has generally been declining on a 5 year rolling average basis since 2008, and the most recent point estimates suggest that this decline will continue over the medium term.

Putting together the compositional shift to services exports for Ireland, the fact that this has not been accompanied by major changes in the import composition of our main trading partners and the typically lower response of services imports to GDP growth in the UK, US and euro area, it is reasonable to expect that the response of Irish exports to rising global demand may be lower in the coming years than had previously been the case.

However most recent data for 2014, with export growth estimated at 10.7 per cent – a multiple of weighted import growth in our main trading partners – would contradict this expectation. The increased concentration of Irish exports by product, and in particular their role at various stages of the production chain for final goods and services, may be lending itself to a more acyclical, but no less volatile response to changes in demand. Understanding the importance of global value chains in cross-border trade and Ireland's role in these GVCs is therefore important in evaluating the potential response of Irish exports to global demand.

9 OECD/WTO/UNCTAD (2013a) and (2013b).

10 The import elasticity is estimated by regressing the annual difference in real imports (expressed in logs) on the annual difference in real GDP (expressed in logs). The long-run estimate is based on all available quarterly data from the Bureau of Economic Analysis, the Office for National Statistics and Eurostat for the US (1947q1-2014q3), UK (1955q1-2014q3) and euro area (1995q1-2014q3), respectively.

Figure 3: Elasticity of imports to GDP growth, rolling 5-year estimates, long run averages (---) and most recent annual out-turn (◆)

Source: Authors' calculations.

4. The role of global value chains in international trade

Increasingly, many of the goods and services we consume re comprised of inputs from different countries, even when produced within the same firm. Attempts by large global goods and services producers to optimise production has given rise to growth in cross-border production processes and the dispersion across countries of value chain activities, such as design, research and development, production, distribution etc. The development of these Global Value Chains has become an increasingly important feature of global trade.

Global Value Chains describe the array of activities that bring a product from concept to consumer. Globally, more than half of world manufactured imports are intermediate goods – raw materials or part-finished goods. Trade theory primarily focuses on countries' comparative advantage in particular goods and services. Within the GVC framework, however,

Box A: The OECD Trade in Value Added Data

To illustrate the concepts underlying the TiVa database, it is useful to consider a simple example: a car which may be exported by a company in Germany, is made up of constituent parts that may be imported from other countries such as wheels, seats, and seatbelts. In turn, companies who produce these parts may also import parts from third countries such as rubber, and various metals.

In a model of S sectors and N countries, where N=1…i, assume the gross value of the output exported in sector S in country i is $y_i(s)$[11]. Let the value of final goods from sector S in country i exported to destination j be $C_{ij}(s)$ and the quantity of intermediates from sector S in country i used to produce output in sector t in country j be $M_{ij}(s,t)$, such that:

$$y_i(s)=\sum_j C_{ij}(s)+\sum_j \sum_s M_{ij}(s,t)$$

On the input side

$$y_i(s)=\sum_s D_{is} +\sum_j \sum_s I_{ij} +\sum_t D_{it} + \sum_j \sum_t I_{ij}$$

Where D_{is} is domestic value added in sector S exports, I_{ij} is the use of sector s inputs from country j used in producing sector S exports in country i, D_{it} is the domestic value added input from sector t, where $t \neq s$, in sector S exports, and the final term denotes the use of sector t goods and services as intermediate inputs imported from country j. In the context of our intuitive example, we could see this as being the quantity of plastic (t) imported by Germany (i) from China (j) used in the production of cars(s).

Combining the $y_i(s)$ identities, the difference between gross exports and the domestic value added is the use of imported inputs during production:

$$\sum_s D_{is} +\sum_t D_{it} = \sum_j c_{ij}(s) + \sum_j \sum_s m_{ij}(s, t) - \sum_j \sum_s I_{ij} - \sum_j \sum_t I_{ij}$$

Aggregating at the country level, the net domestic value added of gross exports is:

$$\sum_s \sum_t D_i = \sum_j \sum_s y_i - \sum_t \sum_s \sum_j I_i$$

Given this framework, we use two TiVa measures in our analysis. Domestic Value Added Embodied in Gross Exports and the Participation Index. The former describes the value added in the domestic economy for a given amount of exports ($\sum_s \sum_t D_i / \sum_j \sum_s Y_i$). The lower this ratio, the more important foreign imports are as an input to producing the goods and services that a country exports. The participation indices measure a country's relative participation in global value chains. A country can participate backwards, that is, utilise imports in the production of its exports ($\sum_t \sum_s \sum_j I_i / \sum_j \sum_s Y_i$); and forwards, produce exports that are used as inputs in the exports of a third country ($\sum_j \sum_s Y_i / \sum_t \sum_s \sum_i I_j / \sum_i \sum_s Y_j$).

11 A more detailed mathematical derivation of a multi-country, multi-sector model is available in Johnson & Noguera (2012).

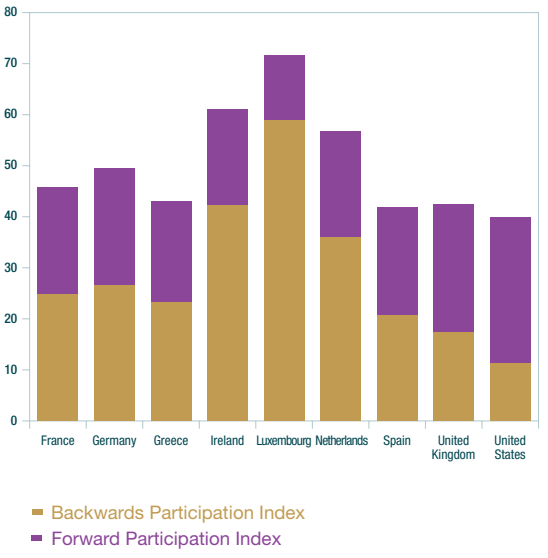
countries can be specialists in creating a component that is just part of the product that will eventually reach the hands of the end user, or provide the necessary administrative services to coordinate the production of that final good or service. This is likely to be even more prevalent for countries, such as Ireland which have a large foreign owned multi-national sector.

Each stage of production can add markedly different amounts of Value add many sectors, such as information and communication technology (ICT) and pharmaceuticals. Often a large portion of the value added derives from intellectual property. An excellent example of this can be found in the declaration printed on Apple hardware that the product was "Designed by Apple in California – Assembled in China"[12], which - though more descriptive than many labels - merely reflects the beginning and end of the process. The reality of modern production is that goods and services are usually made up of inputs from many countries. Conventional national accounts trade data measure the gross value of goods and services at each transaction between countries, rather than the value that is added by the particular stage of production undertaken in a particular country. This tends to overstate the aggregate value of international trade, as well as the actual value added in particular countries (Koopman et al, 2008). As GVCs have become more prevalent, this overstatement has also risen and has implications for the relationship between the growth in trade and second round domestic economic outcomes, such as employment and national income growth.

Given these issues, it is informative to use measures of value added that take account of the fragmentation in production of final goods and services across borders. The OECD provides an alternative to conventional trade data in the Trade in Value Added (TiVa) database to allow for such analysis (see Box A).

Johnson and Nogeura (2012) illustrate that richer countries tend to have a lower value added to export ratio mainly as a result of the

Figure 4: Global Value Chain Participation Index – 2009



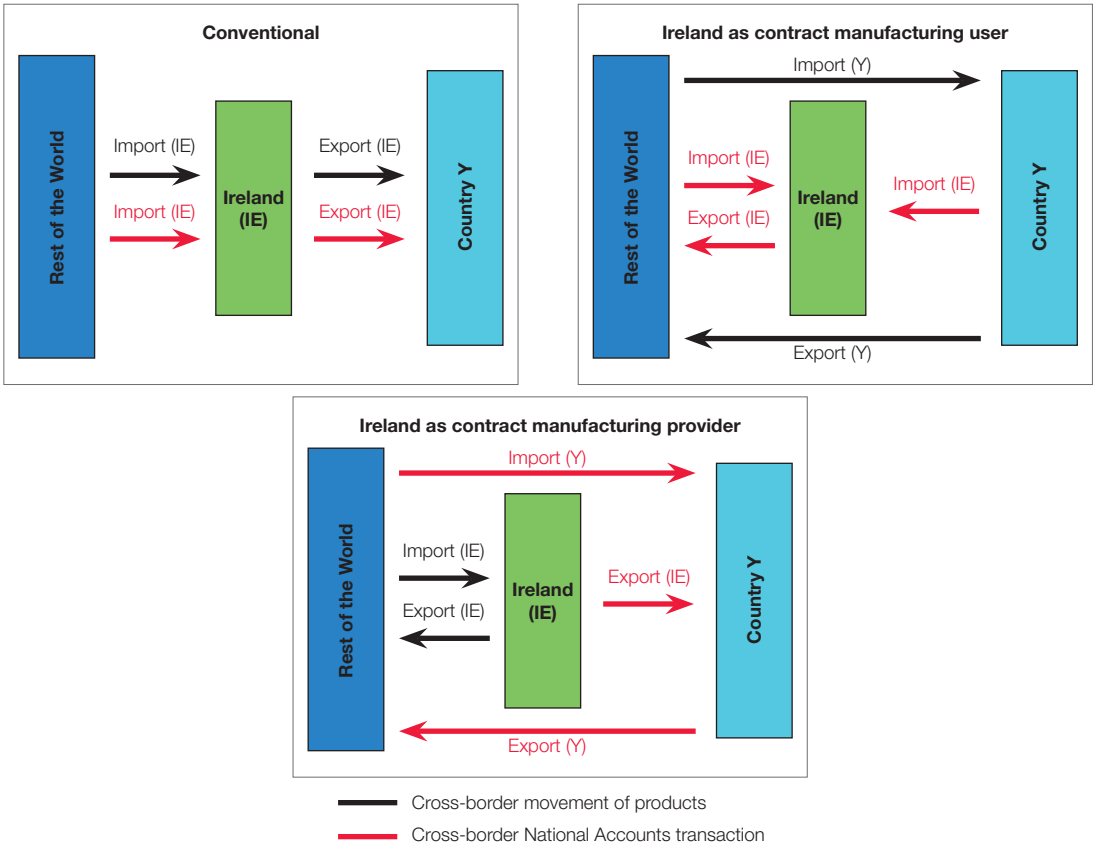
Source: OECD and authors' calculations.

content of their export basket being made up of more goods and services with fragmented value chains. As such, the important issue is a country's participation and relative position in Global Value Chains. In this regard Backer and Miroudot (2013) propose measures of the use of foreign inputs in exports (backwards participation) and the use of a country's exports in another country's exports (forward participation). This data has important uses for policymakers when assessing the responsiveness of a country's exports to world demand and the ultimate benefit in national income accrued to the country for engaging in international trade.

Trade in Value Added (TiVa) describes the statistical methodology used to estimate the sources of value added by country and industry in the production of goods and services for export and import. It includes a set of indicators which, taken together, can be used to derive a clearer picture of the production of a good or service, such as the value added to a good or service export domestically (i.e. excluding foreign imported inputs), and the extent of intermediate exports used in other countries' production and export processes.

12 Dedrick et al (2012) show that only 10 per cent of the factory gate price of an iPod contributed to Chinese value added – the bulk of the components being imported from Japan.

Figure 5: Cross-border National Accounts transaction



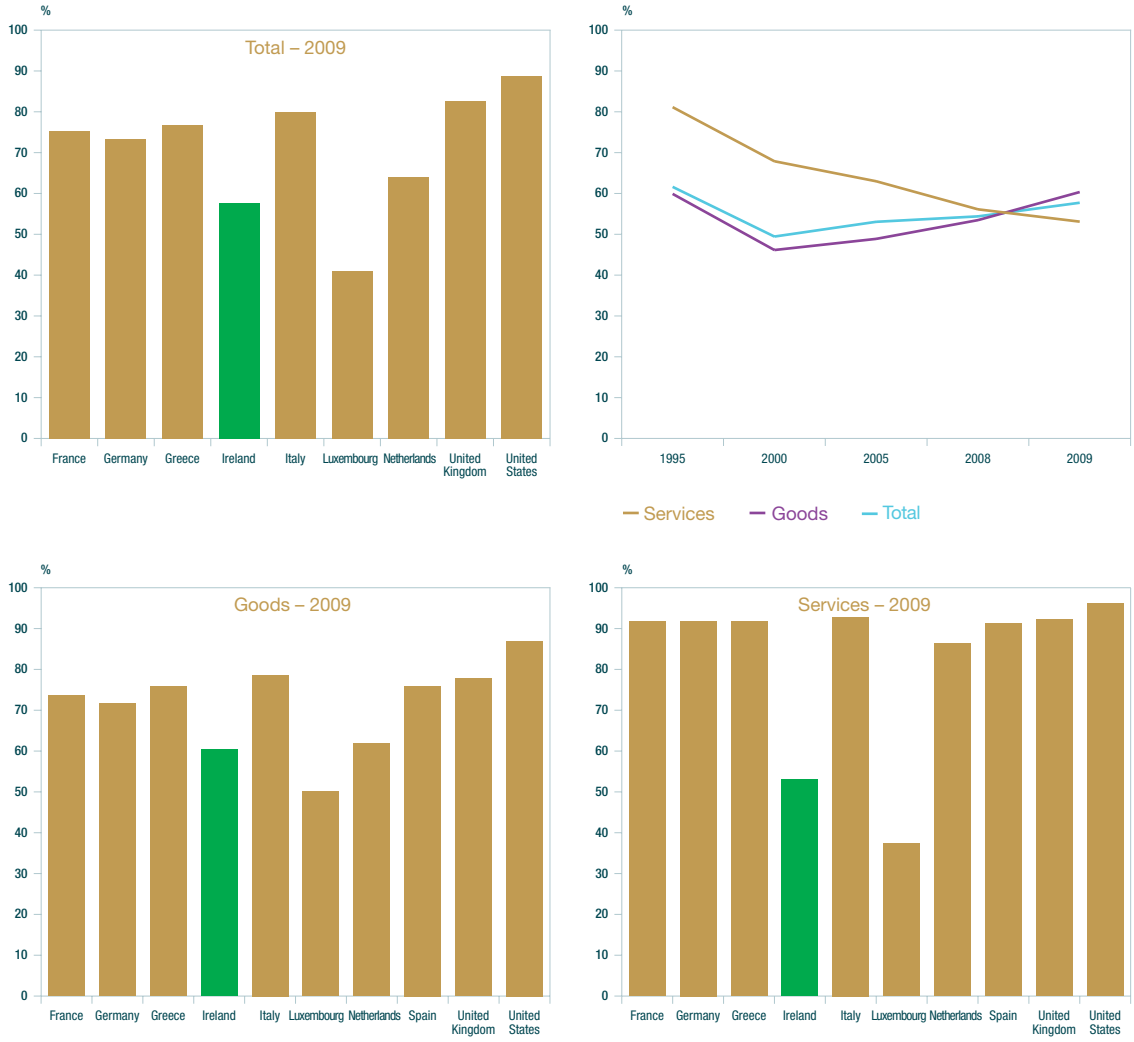
The cornerstone of the TiVa methodology is a full set of cross-country input-output tables covering a number of sectors. These capture the bilateral exchanges between countries of intermediate goods and services that are used in production to meet final demand of a given country (including its exports), as well as the cross-border trade in goods and services for final consumption.

5. Irish participation in global value chains

We use the TiVa Participation index in order to assess the extent of Ireland's involvement in GVCs. This is illustrated in Figure 4, which shows that Ireland has a high level of participation both forward and backwards. This means that we import intermediates for use in producing our own exports (backwards) but also export intermediates for use in a third country's respective export basket. Looking more closely, relative to a selection of other OECD countries, Ireland has very high degree of participation in GVCs, with just over 40 per cent of our exports in 2009 utilising contributions from foreign industries. Meanwhile as a proportion of our total participation in GVCs our forward participation was relatively low. This is in contrast to countries such as the US and UK which had lower levels of participation in GVCs as a proportion of their total export bundle. Moreover their participation is largely characterised by forward participation. Ireland's high degree of participation would suggest a lower level of domestic value added content embodied in our gross exports, an idea that is explored in greater detail in the next section.

One feature of international trade that is in part reflected in the participation index is contract manufacturing. This phenomenon is where goods are produced on behalf of a foreign entity which retains ownership of the inputs to the production until the product is finally sold to the final customer. Due to the concept of economic ownership which prevails in international standards for National Accounts this can lead to the inclusion of a significant amount of trade in National Accounts which are not included in trade data

Figure 6: Domestic Value Added, Goods and Services Breakdown



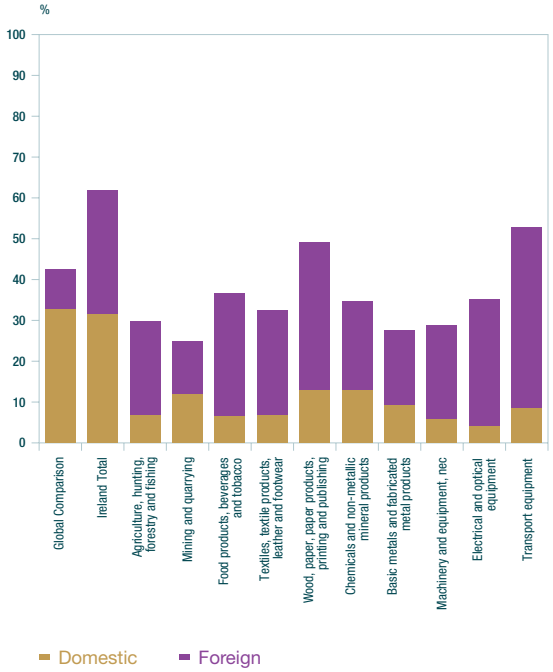
Source: OECD and authors' calculations.

based on customs information of physical goods crossing borders. Figure 5 illustrates the process at a high level for Ireland, in contrast to conventional trade flows.

In the conventional case, the inputs to production of Irish exports to country Y are imported into Ireland from the rest of the world. In the second case, where Ireland is a contract manufacturing user, the Irish entity hires a firm in country Y to combine the various inputs in the production process of a good for export back to the rest of the world. While none of the inputs crosses the Irish border, they are still reflected as imports in the Irish National Accounts as the Irish entity retains economic ownership of them until the final product is sold. The export of the final product is also included in the Irish National Accounts for the same reason. However, there is now a further import for Ireland, namely the contract manufacturing service provided by the entity in country Y. In the third case an entity in country Y hires a firm in Ireland to manufacture a product for export on their behalf. In this case Ireland exports the contract manufacturing service to country Y.

The dominant feature of export growth in 2014 was Ireland emerging as a net contract manufacturing user, with export growth outstripping conventional benchmarks of world demand and higher frequency indicators based on customs data. While a complete set of input-output tables to enable an update of the participation index for 2014 will not be

Figure 7: Services Share of goods, exports, as percentage of gross exports, 2009



Source: OECD and authors' calculations.

available for a number of years, it is likely that this would have increased Ireland's backward GVC participation. This is due to the fact that the service import content of gross exports would be higher. There will also be implications in terms of the actual benefit accruing to Ireland from its export activity, as there will be no direct employment growth as a result of this higher export growth driven by contract manufacturing. Overall, Ireland's participation in GVCs leads to a complex interpretation of the outlook for export growth in terms of prospects for demand in our main trading partners, as well as understanding the ultimate benefit of that export growth to Ireland.

6. The implications of Irish participation in GVCs

The main implication of the high level of GVC participation in Ireland is the actual value added by firms in Ireland during the production process for final goods and services. Using the OECD TiVa data, we derive the percentage of domestic value added in total gross exports in Ireland. This is illustrated in Figure 6. As a consequence of the relatively high backwards GVC participation noted above, Ireland's domestic value added to export ratio is lower than most other countries. Indeed, reflecting the changed structure of the export activity of a number of Irish multinationals noted in this article, the domestic value added embodied in gross exports of services has fallen by a significant magnitude between 1995 and 2009.

It must be noted that these developments in domestic value added services exports happened at a time of robust growth in the gross volume of services exports. As a consequence, the overall contribution of that export growth to national income growth continued to be significant, but to a lesser extent at the margin.

Disaggregating total exports into goods and services, Figure 6 shows that the domestic value added content of gross exports in Ireland is among the lowest in a selected group of our trading partners, with this disparity being most prevalent in the services sector. Within the services sector itself there is evidence of a downward trend in the value added ratio in Ireland, falling from 81 per cent in 1995 to 53 per cent in 2009. This is due to the large portion of Irish services exports in software and other ICT whose underlying intellectual property are held outside Ireland and are necessary to import through royalties, licences and research and development. Indeed this tendency for a relatively low domestic value added for service exports is more pronounced in those sectors which tend to be foreign dominated, highlighting the role of FDI.

Although the domestic value added in Ireland's goods exports has risen somewhat in recent years, compared to other countries it remains relatively low (Figure 6). Again, this is most prevalent for sectors which have both a high FDI component and significant reliance on foreign owned intellectual property, such as pharmaceuticals. Conventional trade data do not take into account the value added by services generally in the production of goods. Figure 7 illustrates that the services

Table 2: Total output, intermediate consumption, gross value added and exports by sector, 2011, €million

	Domestic dominated	Foreign dominated*	Whole economy
Gross output	234,892	98,134	333,026
Intermediate consumption	115,193	59,988	175,181
Imports	52,498	49,219	101,717
Gross value added	119,699	38,146	157,845
Compensation of employees	62,512	7,564	70,076
Gross operating surplus	57,720	30,346	88,066
Net taxes on production	-533	236	-297
Exports (product basis)	85,671	81,415	167,086

Source: Authors calculations based on CSO data from National Income and Expenditure Accounts and Supply and Use and Input-Output Tables.

*Foreign dominated sectors match as close as possible those identified in Table 3 of the CSO release on Gross Value Added for Foreign-owned Multinational Enterprises and Other Sectors Annual Results 2013. Sectors included as foreign dominated in this table are (with respective NACE Rev.2 codes) Printing and reproduction of recorded media (18), Petroleum and chemical products (19, 20), Basic pharmaceutical products and preparations (21), Computer, electronic and optical products (26), Electrical equipment (27), Publishing activities (58), Audiovisual and broadcasting services (59, 60), Telecommunications (61), Computer programming, consultancy and Information service activities (62, 63).

sector contributed just over 40 per cent of the value added in goods exports globally in 2009. In Ireland this figure was over 60 per cent. Globally, approximately three-quarters of this value added derived from domestic services whereas in Ireland this is only half. Within Ireland, foreign-dominated sectors are characterised by a high level of foreign services contribution to their goods exports – reflecting issues such as royalties and patents as well as other factors.

Using CSO data for 2011 it is possible to highlight the role of foreign ownership in more detail (Table 2). Gross output is the value of all goods and services produced. In order to get an estimate of gross value added (GVA) it is necessary to remove those goods and services which are used in the production process (intermediate consumption), which includes imports used. Comparing domestic and foreign dominated sectors it can be seen that intermediate consumption, and in particular imported intermediates are a higher proportion of gross output for foreign dominated sectors (61 per cent and 50 per cent) than domestic dominated sectors (49 per cent and 22 per cent). As a consequence GVA is a much lower proportion of gross output for foreign dominated sectors due to their higher reliance on imported intermediates, or alternatively their higher backward participation in GVCs.

A further disaggregation of GVA in Table 2 shows the impact of the higher labour intensity of domestic dominated sectors, with most GVA being accounted for by employee compensation. This is in contrast to the foreign dominated sectors, where the bulk of GVA relates to the gross operating surplus, in essence the income which accrues to the owners of the capital in the sector which ultimately flow out in profit repatriation. While the total value of exports from both domestic and foreign dominated sectors is similar, the share of the ultimate income that accrues to Ireland is much smaller in aggregate due to the high level of imported intermediates and the relatively high returns to capital of foreign dominated sectors.

7. Conclusions

As a small open economy, sustainable increases in Irish standards of living are driven by steady export growth. Given the structural changes evident in global trade, in our main trading partners and particularly in the composition

of Irish exports over the past decade, our understanding of the channels through which export growth is determined is also changing. This comes at a time of increasing specialisation for Irish exports, as well as a higher tendency for those exports to be part of wider global value chains for final goods and services. The related high share of foreign owned-multinationals involved in export activity in Ireland also has implications for the ultimate benefit in terms of national income from our relative openness to international trade.

Arising from these structural changes is a great deal of uncertainty around future drivers and prospects for export growth, as well as the role of exports in contributing to wider increases in Irish standards of living. If current and future export growth has differential drivers versus the past, then the channels through which this growth affects the domestic economy will also be different. Having highlighted these issues however, further examining them in a more analytical framework is a next step in re-appraising our understanding of how Irish exports respond to changes in world demand and the role of exports in generating national income

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Navigating Uncharted Waters: Analysis of Monetary Operations & Financial Market Developments

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Abstract

In 2014, monetary policy announcements by global central banks continued to be a driver of financial markets. Developments in the European periphery and across emerging markets also continued to be a focus for market participants but to a lesser extent than in previous years. In this article, we review 2014 and early 2015, examining the evolution of Eurosystem liquidity provision and the subsequent impact on excess liquidity. The article also analyses the main changes to the Eurosystem's operational framework over this period, including the introduction of the Targeted Longer Term Refinancing Operations (TLTROs), the Asset Backed Securities Purchase Programme (ABSPP), the Covered Bond Purchase Programme (CBPP3), and the Public Sector Purchase Programme (PSPP). The article reports on the continued improvements in money markets over the review period. Finally, we examine the on-going improvement in the Irish sovereign's access to debt markets before briefly analysing changes in TARGET2 balances over 2014.

1 The authors would like to acknowledge, with thanks, the input of John Rowe and the helpful comments and suggestions of Thomas Brophy, William Molloy, and other colleagues in the Financial Markets Division of the Central Bank of Ireland.

1. Market Overview 2014/early 2015

Over the course of 2014, global financial markets were heavily influenced by the accommodative monetary policy environment created by many of the major global central banks, which was a driver of risk appetite. The accommodative environment saw many asset classes record highs over the year, amid generally low volatility, although some volatility measures did spike on a number of occasions, largely reflecting periods of heightened geopolitical risk. In Europe, market sentiment towards peripheral countries in the euro area continued to improve during the year, with significant tightening in spreads relative to the core countries, while euro area banks' reliance on Eurosystem liquidity provision eased. As the year progressed, however, a decrease in euro area Consumer Price Index (CPI) inflation readings increased fears of a possible move into deflationary territory, which, allied with low growth readings, increased expectations that the ECB would take further policy action.

The decision by the Federal Reserve (the Fed) to begin tapering its asset purchase programme from February 2014 was also a key driver of financial markets, although fears that emerging markets would experience a large selloff were not generally realised. The Fed continued to reduce its asset purchases by $10 billion-$15 billion per month until purchases were halted in late October 2014, after accumulating a total of $4.5 trillion in assets. At its December meeting, the Federal Open Markets Committee (FOMC) pledged to be 'patient' in raising interest rates in the U.S., dropping its previous promise to keep rates at their current level for a 'considerable time'. The Bank of Japan (BoJ) announced the expansion of its asset purchase programme in October, committing to purchases of ¥80 trillion of bonds per year, up from ¥60-¥70 trillion announced at the start of the programme in April 2013.

Looking to specific asset classes, the on-going improvements in euro area bond markets continued from 2013, with European peripheral countries becoming more resilient to shocks and less prone to contagion effects. Peripheral spreads tightened to Germany over the year, continuing a theme established in mid-2012 following ECB President Draghi's pledge to do "whatever it takes" to preserve the euro. Equity markets were generally stronger in 2014, with European and Asian bourses benefiting from continued policy accommodation from central banks, while U.S. stocks were supported by strong data releases and positive earnings surprises. Commodity prices were affected by movements in the dollar over the year, in addition to geopolitical issues in a number of areas, which had an effect on both supply and demand. Oil prices fell in late 2014 and early 2015, despite geopolitical tensions, with concerns of oversupply weighing on prices. Gold prices were little changed over the year, although some fluctuations occurred, generally during times of increased risk aversion.

Focusing on money markets, movements in the euro area were driven by policy rate cuts by the ECB, and developments in liquidity provision during the year. Unsecured rates in the euro area increased early in 2014, with EONIA reaching its highest fixing (0.359%) since March 2012 (excluding month-end fixings), as excess liquidity fell below €125 billion in mid-January, its lowest level in over two years. The declining level of excess liquidity was predominantly driven by lower participation by banks in Eurosystem operations following the year-end period and continued repayments of 3-year Longer Term Refinancing Operations (LTROs). Over the first half of the year, the EONIA fixing generally remained below the Main Refinancing Operation (MRO) rate (0.25%), but edged closer on average to that rate as the year progressed. However, following the announcement of a series of accommodative ECB policy measures in June 2014, including reductions on all the key policy rates and the introduction of TLTROs, EONIA fixings began to move towards zero. They eventually moved below this rate following further policy easing at the September ECB Governing

Council meeting, where they have largely remained since. Secured money market rates have largely mirrored the movements in the unsecured market, with General Collateral or GC (a range of assets which are accepted widely within the repo market as collateral) pooling rates pricing in negative territory for much of the second half of 2014.

Despite these accommodative measures from the ECB, monthly CPI inflation readings within the euro area remained low in the latter half of the year and this began to impact upon longer term inflation expectations. Medium term inflation expectations (as reflected by the 5year/5year forward breakeven inflation rate) fell below 2%, eventually reaching a low of 1.48% in mid-January 2015. ECB President Draghi subsequently stated that the Governing Council would if necessary, and within its mandate, use further asset purchase programmes to keep medium term expectations of inflation from declining further. The ECB cut each of its key policy rates at the following Council meeting in September, and announced the ABS and CBPP3 purchase programmes at the same meeting. Euro area bond yields fell significantly following these measures, although medium term inflation expectations also continued to decline. In January 2015, the ECB launched the Public Sector Purchase Programme (PSPP) as part of the Expanded Asset Purchase Programme (EAPP), which also encompassed the existing purchase programmes (ABS and CBPP3). Under this expanded programme, the combined monthly purchases of public and private sector securities will amount to €60 billion per month, and will be carried out until end-September 2016, or until a sustained upward adjustment is seen in the path of inflation which is consistent with the aim of achieving inflation rates below, but close to, 2% over the medium term within the euro area.

A number of other global central banks eased policy in early 2015, with the Riksbank cutting its repo rate into negative territory for the first time, while the Danish Central Bank cut rates in four successive weeks over January and February. The Swiss National Bank (SNB) decided to remove its exchange rate cap to the euro on 15 January, leading to a sharp rise in the value of the Swiss franc. However, the euro has appreciated in recent weeks rising from a low of CHF0.99 on 15 January to CHF1.06 on 13 February 2015. This move was accompanied by a cut in the interest rate on certain sight deposit account balances to -0.75%.

Turning to domestic matters, market sentiment towards Ireland continued to improve during 2014, with both the sovereign and domestic banks able to access debt markets throughout the year as yields declined, underpinned by strong economic data and credit rating upgrades. Domestic bank credit ratings also benefitted from the improved sentiment towards the sovereign, with Bank of Ireland and AIB receiving deposit rating and outlook upgrades during 2014. Demand for Irish sovereign bonds was strong during the year, with the NTMA issuing €11.25 billion of long-term debt in 2014. In Q4 2014, the NTMA announced that it would seek to repay the first tranche of Ireland's IMF loan facility early, and in December repayments totalling €9 billion, covering repayments due to June 2019 were made. In December 2014, the NTMA announced that it would issue €12-€15 billion of long term bonds in 2015, €8 billion of which has been issued to date in Q1 2015.

In Section 2 of this paper, we give an overview of the ECB's key monetary policy decisions over 2014 and Q1 2015. Section 3 looks at overall trends in Eurosystem lending and the use of the Eurosystem's standing facilities, while Section 4 discusses money market developments over the same period. In Section 5, we examine developments in Ireland with regard to Eurosystem liquidity provision as well as the sovereign and domestic banks' access to debt markets. Section 6 reviews movements in TARGET2 balances over 2014, while Section 7 concludes the paper.

2. ECB's Key Policy Decisions in 2014 & Q1 2015

Deflationary pressures, monetary policy announcements by central banks and the implementation of non-standard measures by the ECB were the major focus for market participants in 2014.

In the euro area, inflation (as defined by the headline CPI rate) fell to 0.50% year-on-year in May 2014, below the ECB target rate of below but close to 2%, driving up market participants' expectations for further monetary easing by the ECB in mid-2014. Subsequently, the ECB introduced a series of measures over the remainder of the year in order to increase inflation and stimulate lending to the real economy. These included the introduction of negative deposit facility rates, reductions in the main refinancing interest rate, the suspension of fine-tuning liquidity absorbing operations and the introduction of TLTROs to increase lending to non-financial corporations[2]. In addition, the Eurosystem commenced purchases of covered bonds in October 2014 and asset backed securities in November 2014 in an effort to further enhance the functioning of the monetary policy transmission mechanism and to support the provision of credit to the economy. The CPI inflation rate declined further over the remainder of 2014 and early 2015, reaching a low of -0.60% in January 2015 amid falling oil prices, prompting the ECB to announce details of the EAPP in early 2015. See Box 1 below which summarises some of the statements and decisions made by the ECB throughout 2014 and early 2015.

Box 1: Summary of ECB Decisions

On **24 January 2014**, the Governing Council, in cooperation with the Bank of England, the Bank of Japan and the Swiss National Bank, decided to gradually reduce the provision of US dollar liquidity-providing operations. The decision was made in view of the considerable improvement in US dollar funding conditions. Operations with a maturity of three months were continued until April 2014 while the Governing Council decided to continue 7-day US dollar liquidity providing operations until further notice, as announced on 17 June 2014.

On **6 February 2014**, President Draghi confirmed at the press conference following the February Governing Council meeting that the accommodative stance of monetary policy would be maintained for as long as necessary and that either an unwarranted tightening of short-term money markets or a worsening of the medium term outlook for inflation could prompt the ECB to reduce interest rates further.

On **3 April 2014**, President Draghi noted that the Governing Council was unanimous in its commitment to using unconventional instruments within its mandate to cope effectively with risks of a too prolonged period of low inflation.

On **5 June 2014**, the Governing Council announced the following interest rate decisions: a reduction of the main refinancing rate by 10bps to 0.15%, a reduction of the marginal lending facility rate by 35bps to 0.40% and a reduction of the deposit facility rate by 10bps to -0.10%. The negative deposit facility rate applies to banks' average holdings in excess of the minimum reserve requirements and government deposits held with the Eurosystem that exceed certain thresholds.

2 This excluded loans to households for house purchases.

Box 1: Summary of ECB Decisions

The following measures were also announced on 5 June 2014:

- the suspension of the weekly fine-tuning operation which sterilised the liquidity injected under the Securities Markets Programme (SMP),
- the cessation of the Eurosystem's refinancing operations with a maturity of one maintenance period,
- the extension of Fixed Rate Full Allotment for as long as necessary, and at least until the end of the reserve maintenance period ending in December 2016,
- the introduction of a series of TLTROs aimed at improving bank lending to the euro area non-financial private sector,
- the extension of eligibility criteria for additional assets under the additional credit claims framework until September 2018,
- the commencement of preparatory work related to outright purchases in the ABS market to enhance the functioning of the monetary policy transmission.

On **5 July 2014**, the Governing Council decided on a new cycle for monetary policy meetings, commencing in January 2015, and to also extend the reserve maintenance periods from four/five weeks to six/seven weeks to match the longer time between meetings. Non-monetary policy meetings will continue to be held at least once per month. The Governing Council also announced its intention to publish accounts of its monetary policy discussions from January 2015 onwards.

On **29 July 2014**, the Governing Council adopted measures relating to TLTROs, which set out the conditions for participating and other operational aspects, including the calculation of borrowing allowances and bank-specific lending benchmarks. The design of these aspects was aimed at incentivising increased lending to the real economy.

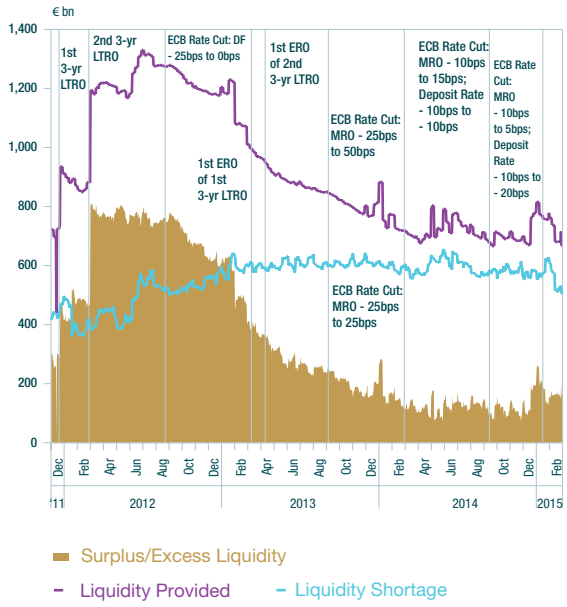
On **4 September 2014**, the ECB introduced further non-standard measures designed to strengthen the impetus of the accommodative stance of policy. These measures related to the purchase of a broad portfolio of euro-denominated covered bonds issued by MFIs domiciled in the euro area under the CBPP3 and the purchase of a broad portfolio of simple and transparent asset-backed securities with underlying assets consisting of claims against the euro area non-financial sector. The ECB subsequently announced the operational details of the two programmes in October 2014. The duration of the programmes is two years and both commenced in the fourth quarter of 2014. The eligibility principles established under the Eurosystem collateral framework apply to asset purchases under the programmes.

On **22 January 2015**, the ECB announced the operational details of its EAPP[3], involving the large-scale purchase of government securities. The combined monthly purchases of public and private sector securities will amount to €60 billion and are intended to be carried out until at least September 2016 and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its aim of achieving inflation rates below, but close to, 2% over the medium term. The purchases of securities will be based on NCBs' individual capital key. There will also be limits on holdings of individual bonds and overall issuer limit relating to bonds in the 2 to 30 year purchase window. The Governing Council also adopted measures related to the TLTROs, which included the elimination of the 10 basis point spread over the main refinancing rate for TLTROs conducted between March 2015 and June 2016.

On **4 February 2015**, the Governing Council decided to lift the waiver which had permitted marketable debt instruments issued or guaranteed by Greece but did not fulfil minimum credit rating requirements to be used as collateral in Eurosystem operations. The decision was based on the fact that the Governing Council considered that it was not possible to assume a successful conclusion of the review of the Greek EU/IMF programme.

3 https://www.ecb.europa.eu/press/pr/date/2015/html/pr150122_1.en.html

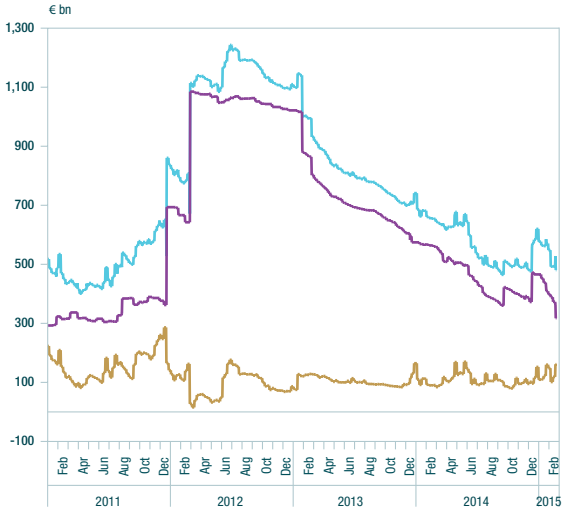
Chart 1: Excess Liquidity in the Eurosystem



Surplus/Excess Liquidity
Liquidity Provided
Liquidity Shortage

Source: ECB Data.

Chart 2: Eurosystem Outstanding Lending



MRO
LTRO
MRO+LTRO

Source: ECB Data.

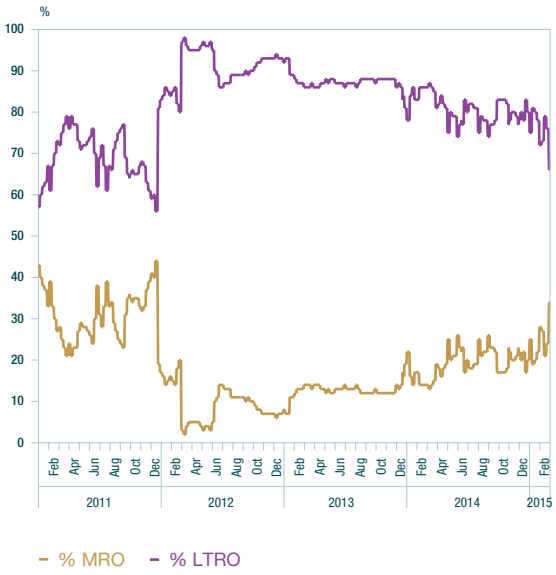
3. Developments in Eurosystem Liquidity Provision

Over the course of 2014, repayments of existing Eurosystem borrowings together with accommodative ECB measures impacted on the level of excess liquidity within the system. This is further illustrated in Chart 1. Excess liquidity arises within the Eurosystem when the supply of liquidity, which is provided via the Eurosystem's monetary policy instruments, exceeds the demand for liquidity, leading to a surplus of liquidity in the banking system. In this situation, the excess will likely end up being deposited with the Eurosystem via deposit facility usage or on the banks' minimum reserves account.

Continuing the trend of 2013, banks continued to repay 3-year LTRO borrowings in 2014 (as illustrated in Chart 1), reflecting the lower demand by banks for precautionary liquidity buffers due to on-going deleveraging and improved access to market funding. Overall, liquidity provided through Eurosystem operations decreased by €122.6 billion over the year, from €752 billion on 31 December 2013 to €629.4 billion on 31 December 2014. Average weekly repayments in Early Repayment Operations (EROs) in 2014 amounted to €5.8 billion, compared with €5.4 billion in 2013, with the largest repayments by counterparties that had increased their market based funding. Some counterparties also switched 3-year LTRO borrowings into other Eurosystem funding such as MRO or 3-month LTRO borrowings in order to facilitate more flexible liquidity management, while others switched into the TLTRO borrowings later in the year due to the longer maturity and favourable cost of this operation. As of 6 March 2015, Eurosystem lending stood at circa €471 billion.

The on-going repayment of 3-year LTRO borrowings changed the composition of the Eurosystem's liquidity provision over the course of the year. As of 1 January 2014, LTRO borrowings accounted for 77.5% of Eurosystem borrowings. As counterparties throughout the Eurosystem repaid 3-year LTRO borrowings through the EROs, some

Chart 3: Eurosystem Lending Profile



Source: ECB Data.

switched into the TLTROs and others switched into the MRO and 3-month LTRO in advance of the maturity of 3-year LTRO borrowings. At 31 December 2014, TLTRO borrowings accounted for 36.7% of total borrowings while 3-year LTRO borrowings accounted for circa 37.5% of total borrowings. Use of the US dollar operations declined significantly over the year as funding conditions improved, declining from €259 million on 1 January 2014 to €20 million on 18 September. Since this date, there have been no bidders in weekly US dollar operations. Chart 2 illustrates the decline in the overall level of Eurosystem borrowings in recent years, largely owing to 3-year LTRO repayments, while Chart 3 illustrates the rising proportion of borrowings through the MRO in the second half of 2014 and early 2015 (currently at circa 30%).

3.1: 3-Year Longer Term Refinancing Operations (LTROs)

On 1 January 2014, there was €544.4 billion outstanding in Eurosystem 3-year LTRO borrowings and this decreased to circa €210 billion by 31 December 2014. Over the course of 2014, a total of circa €143.4 billion was repaid from the first LTRO (circa 30.7% of the total amount borrowed), while €191 billion was repaid from the second LTRO (circa 36.2% of the total amount borrowed). Overall, circa 76.6% of the total 3-year borrowings were repaid as at 31 December 2014, with both 3-year LTROs maturing in the first quarter of 2015.

The reduction in precautionary buffers and the positive reputational or signalling effects associated with reducing long-term Eurosystem borrowings were cited as reasons for early repayment of 3-year borrowings throughout 2012 and 2013. In 2014, market participants also referenced a wish to avoid the placement of liquidity buffers on deposit at negative rates as a reason for accelerating 3-year LTRO repayments.

3.2: Weekly SMP Liquidity Absorbing Operation

On 5 June, the ECB announced the suspension of the weekly SMP liquidity absorbing operation or “fine-tuning” operation, thereby increasing the level of excess liquidity in the system. This decision was taken against a background of weak credit dynamics and low inflation. This operation was originally introduced to facilitate the absorption of the additional liquidity added through the SMP. Following bond maturities and revaluations, the size of the outstanding SMP portfolio stood at €149.4 billion at year end[4].

4 https://www.ecb.europa.eu/mopo/liq/html/index.en.html#portfolios

The Eurosystem was unable to absorb the intended weekly amount in 11 of the 23 weekly SMP liquidity absorbing operations which took place in 2014. The last operation took place on 10 June. The increase in the level of excess liquidity as a result of the suspension proved to be temporary, however, with excess liquidity initially increasing by €38.5 billion to €160 billion but decreasing to its previous level within 21 days amid further repayments of 3-year LTRO borrowings and an increase in liquidity draining autonomous factors[5].

3.3 Targeted Long Term Refinancing Operations (TLTROs)

In order to ensure that improved conditions in money market funding transmits to the real economy, and to support bank lending to households (excluding loans to households for house purchase) and non-financial corporations, the ECB introduced a series of TLTROs which mature in September 2018. The operations enable counterparties to initially borrow up to 7% of the total amount of their loans to the euro area non-financial private sector (excluding loans to households for house purchase) that were outstanding as at 30 April 2014 at a cost of 0.15%. Two TLTROs were conducted in September and December with €82.6 billion allotted in the first TLTRO and €129.8 billion allotted in the second TLTRO (a total allotment of €212.4 billion). The estimated initial allowance for banks to borrow in the first two TLTROs amounted to circa €400 billion. Some counterparties in Spain and Italy capitalised on the positive reputational effects of TLTRO participation by announcing the introduction of new SME lending programmes.

In January 2015, the ECB decided to waive the 10bps spread above the MRO rate, reducing the rate on the TLTRO to 0.05% for the remaining TLTROs. However, it remains to be seen what the impact of this will be on the demand for funding and to what extent participation in the TLTROs substitutes for participation in other regular Eurosystem operations.

On a quarterly basis, from March 2015 to June 2016, all counterparties will be entitled to borrow up to three times the amount of their net lending to the euro area non-financial private sector (excluding loans to households for house purchase) over a specific period in excess of a specified benchmark. Those counterparties that have not met their benchmark for the volume of their net lending to the real economy will be required to pay back some or all of the borrowings in September 2016, while counterparties will be entitled to make voluntary early repayments starting 24 months after each operation.

3.4: USD funding developments

In response to stressed funding market conditions for US dollars in the euro area, the ECB reintroduced 84-day US dollar (USD) operations in September 2011, alongside the existing 7-day operations. Participation in USD operations was high in the months following its introduction and the first half of 2012, and peaked at approximately $90 billion (approx. €67 billion) in February 2012.

In the latter half of 2012 and throughout 2013, borrowing in USD operations declined in line with a reduction in US dollar funding pressures for European banks. Borrowing in USD operations stood at $259 million (approx. €190mn) by end 2013. In light of the reduced usage of this operation, the ECB announced on 24 January 2014 that the 84-day operations would cease in April 2014. This decision takes into account the fact that six major central banks (Bank of Canada, Bank of England, Bank of Japan, European Central Bank, Federal Reserve, and Swiss National Bank) announced in October 2013 that existing temporary bilateral liquidity swap arrangements were being converted to standing arrangements.

Following the cessation of the 84-day operations in April, outstanding US dollar funding declined to €300 million to €174 million in May 2014, and declined gradually to

5 Liquidity draining autonomous factors includes government deposits with NCBs.

zero in September 2014. One-week US dollar liquidity-providing operations will continue until further notice.

3.5: Fulfilment of Minimum Reserve Requirements

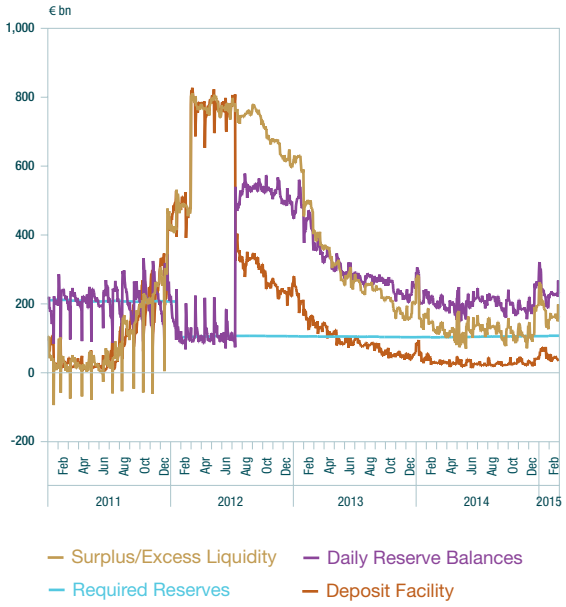
During 2014, the majority of counterparties maintained the practice of "frontloading" reserve balances at the beginning of each maintenance period, by initially holding reserves above the minimum requirement and then reducing the surplus towards the end of the maintenance period. Reserve requirements increased slightly over the year, from €103.2 billion at end 2013 to €106.2 billion at end 2014.

On average, reserve account balances held in 2014 were €203.8 billion, a significant decrease from 2013, which averaged €310.9 billion. Current account holdings in excess of minimum reserve requirements averaged €100.0 billion for the year, down from €220.3 billion in 2013. The decline in excess reserves reflects lower Eurosystem borrowings and reduced money market fragmentation.

3.6: Standing Facilities: Deposit Facility

Daily recourse to the overnight deposit facility declined significantly throughout the year with usage averaging €30.7 billion per day in 2014, down from a daily average of €100.2 billion in 2013, which may be attributable to the two successive reductions to the deposit facility rate to -0.10% and -0.20% in June and September combined with the less stressed conditions in markets.

Chart 4: Deposit Facility Usage and Excess Reserves



Source: ECB Data.

3.7: Standing Facilities: Marginal Lending Facility

Use of the marginal lending facility averaged at €0.2 billion in 2014, down from €0.5 billion in 2013. The highest amount borrowed on any single day was €5.4 billion on 31 March, which may be attributable to tighter liquidity conditions over banks' reporting periods. During the year, the marginal lending facility rate was reduced twice, from 0.75% to 0.40% on 5 June and from 0.40% to 0.30% on 4 September.

Chart 4 illustrates the deposit facility usage and the trend in declining excess liquidity since the allotment of the 3-year LTROs in December 2011 and February 2012, owing mainly to the repayment of these borrowings from early 2013.

Box 2: ECB Covered Bond and ABS Purchase Programmes

In September 2014, the ECB announced two new purchase programmes, the ABSPP and the third CBPP. The announcement noted that the two programmes will last for at least two years and are intended to enhance transmission of monetary policy, support provision of credit to the euro area economy and, as a result, provide further monetary policy accommodation. An increase in the size of the Eurosystem balance sheet would also naturally result from the programmes.

CBPP3 began on 20 October 2014, with purchases by 6 March 2015 standing at €48.7 billion, €32.2 billion (80% of the total) on the secondary market and €8.06 billion (20% of the total) on the primary market. ABSPP began on 21 November 2014, with purchases at 6 March 2015 standing at €3 billion.

In the covered bond market, spread tightening has been evident from both core and peripheral issuers, with the latter in particular benefitting, albeit with most of the effect coming following the announcement of the programmes. CBPP3 has led to increased demand for this asset class, leading to continued yield compression into 2015. ABS markets have also witnessed significant spread tightening albeit with lower volumes.

EAPP Purchase Programme

On 22 January 2015, the ECB announced the operational details of its EAPP which involves the large-scale purchase of government securities. The combined monthly purchases of public and private sector securities will amount to €60 billion and are intended to be carried out until at least September 2016 and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its aim of achieving inflation rates below, but close to, 2% over the medium term. The purchases of securities will be based on NCBs' individual capital key. There will also be limits on holdings of individual bonds and overall issuer limit relating to bonds in the 2 to 30 year purchase window. As part of the EAPP, on 9 March the Eurosystem began buying sovereign bonds in addition to its existing purchase programmes in order to address the risks of a prolonged period of low inflation. Since purchases began sovereign bond yields and spreads in the euro area have tightened to record lows, with yields in some countries falling to negative levels, while the euro/dollar exchange rate has depreciated from $1.16 on 21 January to $1.05 on 13 March 2015.

4. Money Market Developments

Euro area short-term money market rates increased in the first half of 2014 before subsequently stabilising following the ECB's accommodative policy decisions later in the year. The increase was largely due to a decline in excess liquidity, which fell below €125 billion in mid-January, its lowest level in over two years, amid a steady decline in Eurosystem borrowings in late 2013 and early 2014. At the January 2014 Governing Council meeting, President Draghi indicated that monetary policy would be eased in the event of two contingencies; "an unwarranted tightening of money market conditions or a deterioration in the outlook for inflation."

EONIA reached its highest level (0.359%) since March 2012 on 20 January 2014 (excluding month-end fixings), and continued to gravitate on average towards the prevailing MRO rate of 0.25% as the year progressed, spiking well above this level at month-end periods. During this period, the EONIA forward curve remained inverted, with shorter dated forward rates fixing above longer-term forward rates, as market participants speculated on the likelihood of further ECB monetary policy accommodation.

In the second quarter of 2014, excess liquidity started to move down towards €100 billion, a level that has commonly been associated with causing upward pressure on money market rates. In April and May 2014, excess liquidity declined to below the €100 billion threshold, resulting in both EONIA and many GC pooling rates increasing above the MRO rate. In May 2014, the Governing Council gave a strong signal that action would be taken at the next meeting and on 5 June, the ECB reduced the main refinancing rate from 0.25% to 0.15% and the marginal lending facility rate from 0.75% to 0.40%. The rate on the deposit facility was brought into negative territory for the first time, declining by 10bps to -0.10% and the combined actions effectively reinstated a symmetric corridor system. The negative deposit rate also applied to government deposits held with the Eurosystem and this fluctuated as some national treasuries attempted to invest their excess liquidity in the market.

The accommodative measures announced by the ECB in June 2014 resulted in a decline in EONIA fixings to close to 0.00%, eventually fixing in negative territory following the announcement of further monetary policy easing at the September Governing Council meeting. In particular, the effects of the additional liquidity and reduced policy rates on the EONIA rate were evident, with the rate decreasing from an average of 0.21% up to 5 June 2014 to an average of 0.01% over the remainder of 2014, while the average EONIA rate in 2013 was 0.09%. The EONIA rate moved into negative territory for the first time on 28 August, reaching a new low of -8.5bps on 24 September 2014.

Shorter-dated Euribor fixings also fell on the introduction of the negative deposit facility with 3-month Euribor falling to 18.5bps, a significant decline from a rate of 43bps in early January. The lower policy rates were also transmitted to longer maturities and yields on euro area money market instruments, in particular Euribor future contracts saw interest rate fixings decline by up to 10bps in maturities up to 1 year.

EONIA volumes averaged circa €27.4 billion in 2014, compared to circa €20.8 billion during 2013. The number of participants in the EONIA panel is unchanged from 2013 at 35 participants; however increased legal and financial risks perceived by banks participating in Euribor and EONIA panels appears to have impacted on other euro area benchmark rates. In particular, the EONIA swap index reference rate was discontinued as of 1 July 2014 due to a critical number of panel withdrawals and the Eurepo index was also discontinued from 2 January 2015 due to a considerable decline in panel size.

The accommodative policy stance maintained by the ECB in the second half of 2014 was perceived to have had a positive effect in easing money market fragmentation in the secured market, with GC pooling volumes on the Eurex[6] platform increasing 3% year-on-year, with the number of transactions rising by 42% over the same period. Secured money market rates reacted to the introduction of the negative deposit facility in a more pronounced way than unsecured rates, reaching negative levels within the first two weeks of the June policy announcement. GC repo rates of different euro area countries also converged further over the year as sentiment improved. German 1-week GC rates averaged 6.5bps over the year, compared to circa 3.1bps in 2013, while the Spanish and Italian 1-week GC spreads to Germany were on average 7bps and 8bps over the year, tightening on average by 2bps compared to 2013.

Interest rate dispersion in the euro area money markets declined in 2014, as market access and market conditions improved for banks that had previously experienced difficulties. The most pronounced decline in dispersion occurred in the overnight secured market, with rate dispersion declining to pre-crisis levels. Although rate dispersion in the unsecured market has still not declined to pre-crisis

6 Eurex is a derivatives exchange, based in Germany that offers products covering a number of asset classes.

Table 1: Irish Sovereign Credit Rating

Agency	Long-term Rating	Outlook	Date of Update
Standard & Poor's	A	Stable	December 2014
Fitch	A-	Stable	August 2014
Moody's	Baa1	Stable	May 2014
DBRS	A(low)	Positive	September 2014

levels, EONIA trading volumes increased by c. 32% overall in 2014, suggesting an improved functioning of money markets.

The evolution of both secured and unsecured money market rates in 2015 will likely be influenced by the commencement of the EAPP and the additional TLTRO allotments which are scheduled to take place over the course of 2015, leading to higher levels of excess liquidity. Market expectations are for EONIA to move towards -10bs to -20bps in the latter half of the year as the liquidity surplus increases as a result of the Eurosystem's purchase programmes.

5. Ireland Overview

Eurosystem liquidity provision to Irish domiciled counterparties decreased from circa €39 billion at 2013 year-end, to €20.7 billion at the end of 2014, a decline of circa €18 billion (47%). There was a decline in Eurosystem borrowings both for domestic banks (from €27.9 billion to €12.6 billion) and for subsidiaries and branches of foreign banks (from €11.2 billion to €8.1 billion).

Over the course of 2014, a combination of increased deposit flows, deleveraging, redemption of NAMA bond holdings, and continued access to international funding markets has allowed the Irish domestic banks to reduce dependence on central bank funding.

5.1: Ireland's debt market activity in 2014 and early 2015

In January 2014, following the Moody's upgrade to Baa3, Ireland regained investment-grade status across all three major ratings agencies for the first time since July 2011. The positive sentiment was further strengthened in May when Moody's again raised their rating on Ireland to Baa1, reflecting the confidence in Ireland's recovery. Since then, market analysts have noted that there has been increased demand for Irish sovereign debt from Asian and Middle Eastern investors. Table 1 outlines the upgrades and current Irish sovereign rating across all four major agencies.

The NTMA successfully tapped the bond market throughout 2014 and surpassed its intended issuance amount of between €6-€8 billion in 2014, raising a total of €11.75 billion in bond market funding with a weighted average interest rate of 2.84%.[7]

In January 2014, the NTMA issued its first government bond following the exit from the EU/IMF Programme in December 2013. There was strong investor demand for the new 10-year benchmark bond, with €3.75 billion raised through a syndicated sale. The majority of issuance was sold overseas (83%) while interest reportedly came from a broad range of international investors. The NTMA also raised €4.25 billion through a series of auctions of this bond during 2014.

7 See NTMA website: http://www.ntma.ie/news/ntma-results-and-business-review-2014/

In addition to the issuance of bonds, the NTMA held regular 3-month T-bill auctions, and in November 2014 extended the term to also include 6-month bill auctions. Demand remained strong for all auctions and the yield at issuance generally decreased during the period.

Irish bond yields performed well across the curve in 2014. Of note, the 10-year bond yield was 1.25% at the end of 2014 compared to 3.51% in January 2014, a decline of 226 basis points, while the spread over the equivalent German bund narrowed to 71 basis points at year end from 158 basis points in January 2014. The convergence also continued with 'semi-core' European countries and the spread over the equivalent Belgian 10-year bond fell to 42 basis points from 96 basis points at the beginning of 2014. To date €12.5 billion or over 50% of Ireland's €22.5 billion IMF loan facility has been repaid in two tranches in December (€9 billion) and February 2015 (€3.5 billion) through new issuance and existing cash balances. The NTMA expect to re-finance a total of €18 billion of this facility and further repayments will be announced over the course of the year.

On 7 January 2015, the NTMA raised €4 billion via a syndicated sale of a new benchmark bond maturing in March 2022. The yield on this bond was 0.867% and 85% of the issuance was taken by overseas investors. In another syndicated sale on 3 February 2015 the NTMA raised €4 billion from the sale of a new 30-year benchmark bond. The yield on the bond maturing in 2045 was 2.088% and 95% of the issue was taken up by overseas investors. On 12 February 2015 the NTMA raised €500 million via the sale of the benchmark 15-year bond at a yield of 1.563%. With the completion of this auction the NTMA have to date raised €8.5 billion of the planned €12-€15 billion issuance for 2015, including funds to refinance the early repayment of the IMF loan facility.

Irish sovereign bonds continued to rally in early 2015 amid strong economic data and ahead of the beginning of the ECB's EAPP, with the 10-year benchmark bond falling below 1% for the first time in late February 2015. This compares to an all-time high of 14.08% reached in July 2011.

5.2: Irish Bank Bonds and Other Debt Issuance

Over the course of 2014 and into early 2015, Irish banks demonstrated improvements in bond market access, through both secured and unsecured issuance to an international investor base at progressively lower yields. The bond issuances were generally well subscribed given the improved outlook for the banking sector. Reflecting improvements in sovereign funding conditions, market access for the Irish banks also improved, with AIB and BOI issuing debt totalling €1 billion and €3 billion respectively in 2014.

On 11 March 2014, BOI raised €750 million through a 5-year covered bond secured against its mortgage book, with a yield of circa 1.82%. This issuance was circa three times oversubscribed. On 30 April, BOI issued a €750 million 3-year senior unsecured bond at a yield of 2.07%.

Continuing this positive trend, BOI issued a €750 million 5-year covered bond secured against its mortgage book with a 0.53% yield in January 2015, down from the previous issuance's initial yield of 1.82% in March 2014. Following the release of its preliminary results for 2014 at the beginning of March 2015, BOI issued a 5-year €750 million senior unsecured bond at a yield of 1.27% (a decline from a yield of 3.35% at the previous 5-year issuance in January 2014). Both issuances highlight a significant compression in yields when compared to 2014.

On 19 March 2014, AIB issued a €500mn 7-year Irish mortgage covered bond at a yield of circa 2.33%. This was the longest dated ACS bond issued by AIB since 2007. In January 2015, AIB issued a €750 million 7-year covered bond secured against its mortgage book, with a yield of 0.75%, a reduction compared to that achieved in March 2014.

The decline in covered bond yields can also be attributed to the on-going purchases under the CBPP3. Further details of this non-standard measure are outlined in Box 2 of Section 2.

6. TARGET2 balances

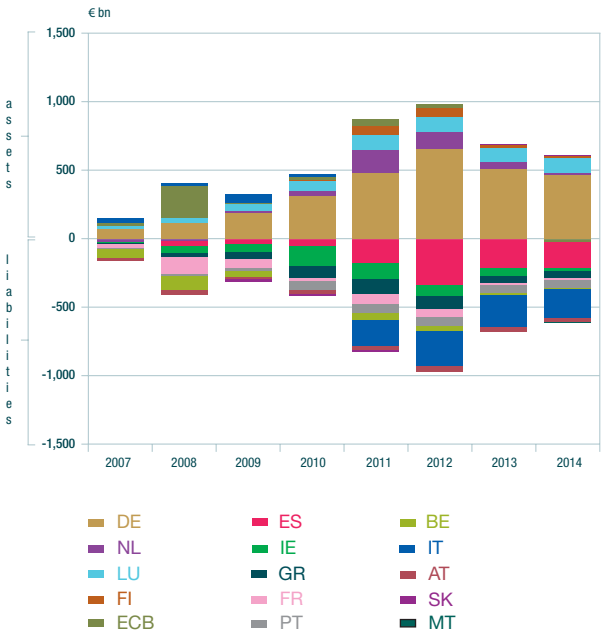
TARGET2 (T2) is the payment system of the euro area that is operated by the central banks of the Eurosystem. All payments are settled in central bank money (that is to say they are booked on the accounts that banks hold with their central bank) and are settled in real time. The payments are primarily between banks and ancillary systems (e.g. security settlement systems, central counterparties, retail payment systems) as well as payments as part of Eurosystem operations such as open market operations (OMOs).

The T2 balances of national central banks (NCBs) reflect cross-border euro transfers. When an NCB has a T2 claim, it implies that there has been an inflow of euro funds to that country's banking system, whereas a T2 liability balance implies that an outflow has taken place. The settlement of such cross-border transfers between banks in the euro area in T2 thus results in intra-Eurosystem balances (which are netted off with the ECB). As a result, some NCBs have a T2 claim (asset) and others a T2 liability vis-à-vis the ECB.

6.1: The main changes in T2 balances in 2014

T2 balances decreased over the year with a general flow of funds back from the core euro area countries to the periphery, which had amassed increasing T2 liabilities from 2010 to 2012. T2 balances first started to decline in late 2012 and this trend continued in 2013 as euro area tensions eased somewhat following the announcement of Outright Monetary Transactions in August 2012. T2 balances continued to narrow at a steady pace in 2014, highlighting a gradual reduction in fragmentation which has been observed across euro area markets (see Chart 5).

Chart 5: T2 balance per selected NCB
2007 - present



Source: ECB Data.

The most notable changes to T2 balances in 2014 were on the balance sheets of the Bundesbank and the Central Bank of Ireland. Over the course of the year the German T2 asset decreased by €49 billion to €461 billion and the Dutch asset fell by €27 billion to €19 billion. Meanwhile, the Irish T2 liability fell by €32 billion to €23 billion, the Spanish T2 liability fell by €24 billion to €190 billion, while the Italian liability also fell by €20 billion to €209 billion. Of note, Ireland's T2 liability has now fallen by circa 84% from the end of 2010, when it stood at €145 billion.

The €32 billion reduction in Ireland's T2 liability in 2014 results from a number of different factors, the two most significant of which are the increase in the Irish sovereign's and domestic banks' access to international markets when issuing new debt, and the on-going deleveraging process, which has included sales of assets to non-domestic investors (which has also resulted in accelerated NAMA bond redemptions). As outlined earlier in this article, these factors

have also facilitated a reduction in Eurosystem borrowings by Irish counterparties over 2014 (of c. €18 billion).

7. Conclusion

In 2014, monetary policy decisions by key central banks continued to be a driver of financial markets. In the euro area, the accommodative policy environment created by the ECB tended to support asset prices, while fragmentation in money markets eased to an extent, and counterparties' recourse to Eurosystem borrowings generally fell over the period. Despite this relative easing in fragmentation within the euro area itself, the latter half of the year was primarily defined by low inflation readings. This led the ECB to announce further policy measures, the foremost of which was the EAPP. The impact of this programme, and other policy decisions, is likely to impact markets in the euro area throughout 2015, while the respective policy stances of other major central banks will also be watched by market participants, along with other factors such as political and geopolitical risk.

Annex 1: Glossary of Terms

Asset Backed Securities Purchase Programme (ABSPP) is part of a larger package of measures which aims to support the transmission of monetary policy to the real economy. The ABSPP will help banks to diversify funding sources and stimulate the issuance of new securities. Indeed, ABS can help banks in several ways to fulfil their main role: providing credit to the real economy. For instance, securitising loans and selling them can provide banks with the necessary funds to provide new lending to the real economy. This will further ease funding and credit conditions and help the transmission of monetary policy.

Autonomous Factors: Autonomous factors are normally outside the control of the Eurosystem and are defined as the items in the consolidated balance sheet of the Eurosystem, apart from monetary policy operations, that provide or withdraw liquidity from the system. The most notable autonomous factors are banknotes in circulation; government deposits deposited with the Eurosystem; and net foreign assets.

Covered Bond Purchase Programme (CBPP3) is the third programme to purchase covered bonds. Together with the ABSPP and with the series of targeted longer-term refinancing operations to be conducted until June 2016, these asset purchases will have a sizeable impact on the ECB's balance sheet. These measures will enhance the functioning of the monetary policy transmission mechanism, support financing conditions in the euro area, facilitate credit provision to the real economy and generate positive spillovers to other markets.

EONIA (Euro Overnight Index Average) is a market index computed as the weighted average of overnight unsecured lending transactions undertaken by a representative panel of banks.

Under the **Expanded Asset Purchase Programme (EAPP**) the ECB will purchase bonds issued by euro area central governments, agencies and European institutions. The programme encompasses the ABSPP and CBPP3 with combined monthly asset purchases amounting to €60 billion. Purchases are intended to be carried out until at least September 2016 and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its aim of achieving inflation rates below, but close to, 2% over the medium term.

EURIBOR (Euro Interbank Offered Rate) the rate at which interbank term deposits are offered by one prime bank to another prime bank. This is often the reference rate for maturities of one, two and three weeks, and for maturities of one to twelve months.

Excess liquidity arises when the supply of liquidity (as provided via the Eurosystem's monetary policy instruments), exceeds the demand for liquidity (as dictated by minimum reserve requirements and autonomous factors outside the direct control of individual NCBs), there is said to be **excess liquidity** in the banking system. In this situation, the excess will likely end up being deposited with the Eurosystem via deposit facility usage or the current account balance.

Excess Reserves: Current account holdings in excess of the average minimum reserve requirements.

GC Pooling Rate: collateral or GC is the range of assets that are accepted, at any particular moment, as collateral in the repo market by the majority of market intermediaries and at a very similar repo rate - the GC repo or pooling rate.

Liquidity Provided: The net amount of liquidity provided by the Eurosystem through its monetary policy instruments.

Liquidity Shortage: This is determined by the minimum reserve requirements and autonomous factors outside the direct control of individual NCBs.

Maintenance period (MP): The period over which compliance with reserve requirements is calculated. The MP begins on the settlement day of the first MRO following the policy meeting of the Governing Council.

Minimum reserves are determined on the basis of the institutions' average daily reserve holdings (calculated on the basis of certain balance sheet liabilities) over a maintenance period. Each bank in the Eurosystem is required to maintain a balance with their respective NCB. The required reserve holdings are remunerated at a level corresponding to the average interest rate over the maintenance period of the MROs of the Eurosystem.

Open Market Operations (OMO's) include Main Refinancing Operations, Longer-Term Refinancing Operations, Fine-Tuning Operations, structural operations and the Early Repayment Operations, as defined below.

(i) Main refinancing operations (MRO) are regular liquidity-providing reverse transactions with a frequency and maturity of one week. The MRO rate is currently 0.05%.

(ii) Longer-Term Refinancing Operations (LTRO) are liquidity-providing reverse transactions that are regularly conducted with a monthly frequency and a maturity of three months. Longer-Term Refinancing Operations are conducted at irregular intervals or with other maturities, e.g. the length of one maintenance period, six months, twelve months or thirty-six months are also possible. The ECB conducted two 36-month operations; the first in December 2011 and the second February 2012, the terms of these operations gave counterparties the opportunity to repay any part of the amount they were allotted after one year. From early 2013, the ECB conducted **Early Repayment Operation (ERO)** allowing banks to repay some or all of their borrowings from two 36-month LTROs before the stated maturity date of the LTRO. Until the maturity of these operations in early 2015, the ECB conducted weekly EROs (one for the each of the two 36-month LTROs) at the discretion of the Governing Council. In June 2014, the ECB announced the **Targeted Longer Term Refinancing Operation (TLTRO)**, designed to support bank lending to the euro-area non-financial sector through a series of eight targeted longer-term refinancing operations with a maturity of up to four years and an early repayment option.

(iii) Fine-Tuning Operations (FTO) can be executed on an ad hoc basis to manage the liquidity situation in the market and to steer interest rates. In particular, they aim to smooth the effects on interest rates caused by unexpected liquidity fluctuations. Fine-Tuning Operations are primarily executed as reverse transactions, but may also take the form of outright transactions, foreign exchange swaps and collection of fixed-term deposits. Between May 2010 and June 2014, a weekly FTO was held to absorb the liquidity provided through the Securities Markets Programme (SMP).

(iv) Structural operations are executed by the Eurosystem mainly in order to adjust the structural liquidity position of the financial sector vis-à-vis the Eurosystem. They can be carried out through reverse transactions, outright transactions and the issuance of debt certificates.

Standing facilities aim to provide and absorb overnight liquidity, signal the general monetary policy stance and bound overnight market interest rates. Two standing facilities, which are administered in a decentralised manner by the NCBs, are available to eligible counterparties on their own initiative:

(i) Marginal Lending Facility (MLF): Counterparties can use the MLF to obtain overnight liquidity from the NCBs against eligible assets. The interest rate on the MLF is currently 0.30% (25bps above the MRO rate) and normally provides a ceiling for the overnight market interest rate.

(ii) Deposit Facility (DF): Counterparties can use the deposit facility to make overnight deposits with the NCBs. The interest rate on the deposit facility is currently -0.20% (25bps

below the MRO rate) and normally provides a floor for the overnight market interest rate.

Variable rate allotment: In normal circumstances, the Eurosystem, when conducting its OMOs, assesses the total liquidity need of the banking sector and, in competitive tenders, allots this amount. Usually these tenders are conducted as variable rate tenders, meaning that banks pay the interest rate that they offer when they make their bids.

The Eurosystem may also execute its tenders in the form of **fixed rate tenders**, where the interest rate is specified in advance and banks bid the amount of money they wish to transact at the fixed interest rate.

In exceptional circumstances, the ECB may decide in advance to allot the full amount of liquidity that banks request, i.e. to accommodate all bids, at a fixed interest rate (known as **fixed rate full allotment**).

New Insights from the Enhancements to Quarterly Financial Accounts

Mary Cussen[1]

Abstract

Throughout 2015 and 2016, the *Quarterly Financial Accounts of Ireland* (QFA) will be expanded to reflect enhanced user requirements, the changing economic environment and the implementation of the latest European System of National and Regional Accounts (ESA 2010) manual. The enhancements to the data will include the publication of whom-to-whom data for deposits and loans for the first time in end-April 2015. Other notable features of the enhancements to QFA include a change to the definition of non-financial corporations (NFCs) and the publication of NFCs trade credit liabilities, which is an important source of funding for NFCs. Further enhancements to the data will be made during 2016. This article analyses some of the insights which can be gained from the enhancements to the QFA data. It finds that since the financial crisis intensified in Q3 2008, there have been significant inflows into government deposit accounts by households and outflows from monetary financial institutions (MFIs) deposit accounts. The change in definition of NFCs under ESA 2010 markedly reduced Irish NFC debt, but it still remains quite elevated. Nearly half of NFC debt was with non-resident lenders, most likely reflecting the activities of multinational corporations (MNCs). The enhancements to the QFA data will be particularly useful in assessing financial stability risks to the economy and the potential transmission of risks between the institutional sectors of the economy.

1 The author is a Senior Economist in the Central Bank of Ireland's Statistics Division. The views expressed are solely the views of the author and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks. The author would like to acknowledge, with thanks, the helpful comments and suggestions of Joe McNeill, John Flynn, Rory McElligott, Brídín O' Leary, and Sarah Frost.

1. Introduction

A number of enhancements have been made to the *Quarterly Financial Accounts of Ireland* (QFA) to reflect enhanced user requirements, the changing economic environment and the implementation of the latest European System of National and Regional Accounts (ESA 2010) manual. The new data will facilitate a more comprehensive analysis of all the institutional sectors of the Irish economy, particularly households, NFCs, insurance corporations and pension funds.

The expanded dataset will be extremely useful in addressing a number of data gaps identified by users during the financial crisis. For instance, one of the recommendations of the joint Financial Stability Board (FSB)/ International Monetary Fund (IMF) report on addressing data gaps highlighted by the financial crisis, was that data on inter-sectoral linkages should be developed (FSB and IMF, 2009). This recommendation is addressed by the publication of whom-to-whom data for deposits and loans which will provide greater detail on inter-sectoral relationships for financial flows and positions. This will allow users to more precisely observe each sectors' funding sources and also to identify potential contagion risks between sectors. While an institutional sector may look robust when examined at aggregate level, underlying vulnerabilities to other sectors may be masked. Assessing inter-sectoral linkages is particularly important in the case of credit institutions (Mathisen and Pellechio (2004)), as these entities are central to the distribution and transmission of risk in any economy. The transmission of contagion risks has been highlighted, in particular, during the financial crisis. For example, when property prices began to decline from 2007, credit institutions with significant property-related lending were exposed to substantial credit risk. The subsequent State interventions to support the banking sector during the financial crisis led to a transfer of risk from the banking sector to the government sector, adversely impacting sovereign bond yields.

The financial crisis has also underlined the problems posed by high levels of NFC debt coupled with a distressed banking sector. Whom-to-whom data provides a breakdown of NFC loan liabilities by counterpart sector. It allows users to better understand the alternative sources of funding available to NFCs. Furthermore, the change in definition of NFCs under ESA 2010 facilitates a more accurate evaluation of NFC indebtedness, by excluding passive holding companies. In addition, the specification of 'trade credit' separately from 'other accounts payable/ receivable' allows better monitoring of the various sources of private sector funding.

Moreover, the enhanced QFA series provides additional breakdowns of the financial sector of the economy. In particular, the publication of separate balance sheets for insurance corporations and pension funds will facilitate a better analysis of these sectors. This article describes these enhancements to QFA in relation to Irish households, NFCs, pension funds and insurance corporations. These enhanced data will be published by end-April 2015. Further enhancements including whom-to-whom data for securities, quoted shares and mutual funds will be published by end-2016.

Sections 2 and 3 examine the additional information available for Irish households and NFCs, respectively. Section 4 outlines the new data on insurance corporations and pension funds. Future developments to the data are discussed in Section 4. Section 5 concludes.

2. Greater Insights into Irish Households

At end-April 2015, information on a whom-to-whom basis will be published for household loans and deposits for the first time. The series will be provided back to Q1 2012. These new data provide greater insights into the deposit and borrowing activities of households, including an improved understanding of the

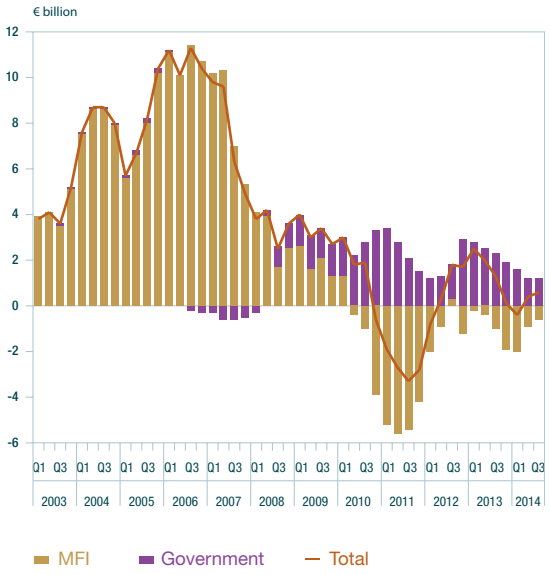
potential vulnerabilities and possible contagion effects to other sectors. Sections 2.1 and 2.2 analyse the additional insights which can be gained from the whom-to-whom deposits and loans data, respectively.

2.1 Household Deposits

Household deposits can have important implications for both the macro economy and for financial stability. Increased levels of household savings, of which deposits are an integral part[2], can either reflect or result in reduced consumption, assuming disposable income remains unchanged. However, as a relatively risk-free[3] and very liquid asset, deposits can also provide an important financial cushion for households during times of economic stress and/or uncertainty, or to smooth consumption over a person's lifetime. A stock of deposits may help to mitigate, to some extent, the adverse impact that economic downturns or shocks may have on consumption and/or household indebtedness. In Q3 2014, QFA data shows that 17.1 per cent of Irish household total wealth was held in the form of deposits. In addition, household deposits are an important funding source for both MFIs[4] and the Government. By September 2014, they represented 21.7 per cent of domestic MFI funding and 10 per cent of government funding. The financial crisis has clearly highlighted the problems that can arise when MFIs move from stable sources of financing, such as deposits, to potentially volatile sources of financing, such as wholesale funding.

Overall, household investment in deposits has declined considerably since the financial crisis began (Chart 1). This may partly reflect lower levels of disposable income and an increased focus on paying down high debt levels accumulated in the pre-crisis period. Disposable income fell by 14 per cent from its peak in Q4 2008 to Q2 2011, the lowest level reached since the start of the crisis. In addition,

Chart 1: Household Deposit Transactions with MFIs and Government



Source: QFA, Central Bank of Ireland.

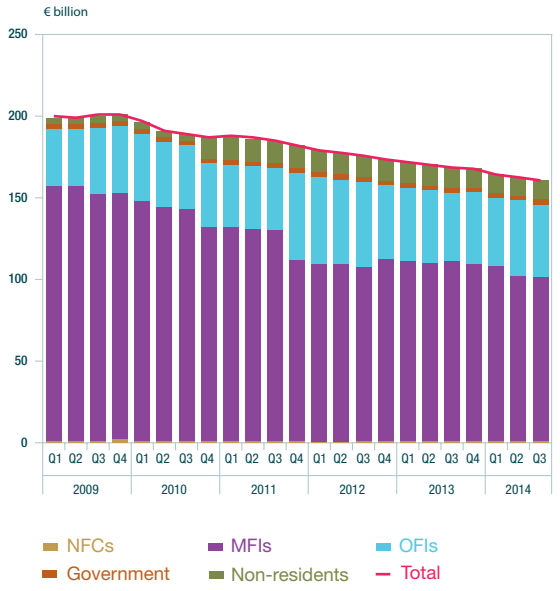
though household savings have been high in recent years, savings were predominately used to repay high debt levels rather than increase deposits (Cussen et al., 2011). The whom-to-whom information available from QFA provides information on the flows of household deposits into both MFIs and the State. The data shows significant inflows into government deposit accounts and outflows from MFIs by households following the intensification of the crisis in Q3 2008. These trends reflect a number of factors. For instance, the outflows from MFIs during 2011 may have reflected concerns about the stability of the banking sector at that time. McQuinn and Woods (2012) find in their analysis of the Irish deposit market that any deterioration in the financial soundness of a deposit-taking entity will have implications for its deposit-gathering capacity. This trend of a shift away from a distressed banking sector towards State savings products is particularly interesting, as the State was also

2 See Cussen et al. (2011) for an outline of the relationship between deposits, savings and disposable income.

3 Deposits held in banks, building societies or credit unions authorised by the Central Bank of Ireland are fully guaranteed under the Deposit Guarantee Scheme up to €100,000 per person per institution. While deposit accounts in most countries have some form of a guarantee, the terms and amount can vary across country. In addition, there is an exchange rate risk associated with deposits held in non-euro accounts.

4 Monetary financial institutions include credit institutions and credit unions.

Chart 2: Sectors of the Economy Holding Household Debt



Source: QFA, Central Bank of Ireland.

undergoing significant financial stress at this time and finding it difficult to access wholesale market funding. Furthermore, in recent years, the State issued new savings products and introduced a relatively more attractive tax treatment on interest earnings relative to banking deposits. These initiatives helped attract additional funding from households to government. Other factors influencing household savings behaviour may include the increase in cash buyers in the housing market in recent quarters (Central Bank of Ireland, 2015), as well as, a decrease in interest rates offered on deposit accounts.

2.2 Household Debt

The financial crisis has emphasised the risks associated both with high levels of private sector indebtedness, as well as the associated contagion risks to other sectors of the economy. Households can use debt to smooth their consumption levels over time and to invest in non-financial assets, such as housing assets. Very high household debt, however, can impede economic growth and can make households more susceptible to distress from increasing interest rates and declining incomes.

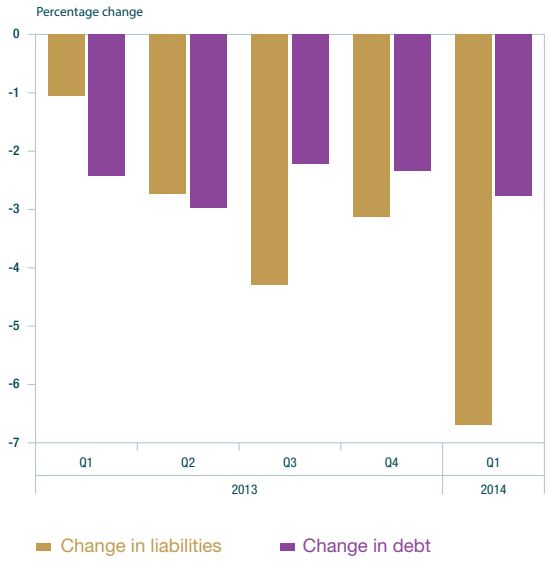
Traditionally, almost all Irish household debt[5] was held with Irish MFIs. This has changed significantly in recent years (Chart 2). In Q4 2005, 91.7 per cent of household debt was held by MFIs. By Q3 2014, this had fallen to 62.5 per cent, largely reflecting a number of different developments in the Irish mortgage market. The most significant development has been the increase in securitisations by Irish MFIs. Between Q4 2005 and Q3 2014, securitized mortgages increased from €4.7 billion to €36.1 billion. In the years of rapid credit growth preceding the financial crisis, Irish MFIs increasingly securitised loans as a means of exchanging illiquid long-term loans for more liquid assets. When the financial crisis intensified and access to funding became more difficult, retained securitisations were used by Irish MFIs to create eligible assets to be used in central bank refinancing operations.[6] Since the financial crisis intensified in September 2008, an additional €12 billion of household loans have been securitised. These securitised mortgages are held by financial vehicle corporations, which form part of the other financial intermediary sector (OFI). In most cases though, the servicer of the loans is also the originator. This is a potential limitation of the use of the whom-to-whom framework for analysing contagion risk, as although the securitised loans are no longer classified as part of the MFI sector, the credit risk remains with the credit institutions. A further breakdown of the OFI sector may therefore be useful for this type of analysis. The OFI sector also includes loans held by non-bank credit providers. In addition, as Irish banks have sought to restructure their activities in recent years, some have sold part of their mortgage books to asset management companies. By end-2014, loans held by non-bank credit providers and asset management companies totalled €7 billion[7]. The exit of Bank of Scotland

5 As households cannot issue securities, household debt only equals household loans.

6 Jackson and Godfrey (2011) provide a detailed overview of securitisation activity in the Irish mortgage market.

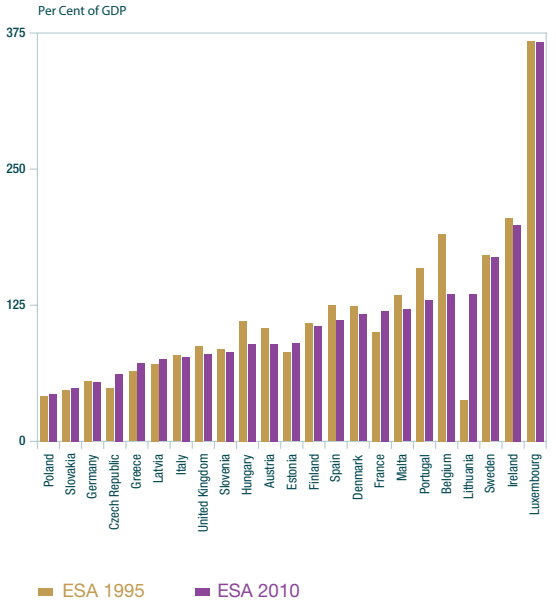
7 Household loans held by non-bank credit providers and asset management companies in relation to principal dwelling houses totalled €6.6bn at end-2014. See Cassidy (2015) for further details.

Chart 3: Impact of change in definition on liabilities and debt



Source: QFA, Central Bank of Ireland.

Chart 4: Comparision of NFC indebtedness by EU country, compiled under ESA 1995 and ESA 2010, Q1 2014



Source: QFA, Central Bank of Ireland.

from the Irish market meant their loans are now included in the holdings of household debt by non-residents. QFA shows the movement in household debt between sectors, with the whom-to-whom presentation identifying which sectors hold the credit risk associated with this debt.

3. Greater Insights into Irish NFCs

The enhancements to the Central Bank of Ireland's QFA also facilitate a better understanding of NFC indebtedness, funding sources and the contagion risk to other sectors.

3.1 Redefining NFC indebtedness

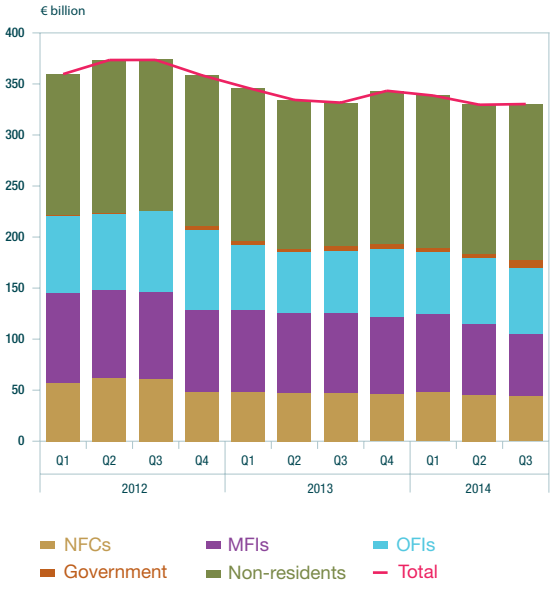
Under ESA 2010, the definition of NFCs has been amended. Holding companies, which passively hold the assets of NFCs, were classified as part of the NFC sector under ESA 1995. Under ESA 2010, however, these companies were reclassified to the OFI sector. This has been one of the biggest changes to QFA under the updated ESA manual[8]. The ECB (2014) expect that the impact of the change will be sizable in a number of euro area countries.

In the case of Ireland, the impact on the NFCs of the change in the manual is material. Chart 3 compares the difference in liabilities and debt[9] when compiled under ESA 1995 and ESA 2010. While it is important to note that the latest NFC data include changes not associated with the ESA 2010 implementation, this chart still provides a useful indication of the methodological impact of ESA 2010 on the NFC sector. Similarly, Chart 4 compares the impact of the change in the manual on NFC debt for Q1 2014 for a number of European companies. While data revisions also apply here, the change in definition appears to be particularly noticeable for Belgium, Portugal and Austria.

8 An overview of all the changes to Financial Accounts sector and instrument definitions under the ESA 2010 manual are available here: http://www.centralbank.ie/polstats/stats/qfaccounts/Pages/TheImplementationofESA2010.aspx.

9 NFC debt is defined as loans plus securities issued.

Chart 5: NFC Loans by Counterpart Sector



Source: QFA, Central Bank of Ireland.

While the change in definition allows a relatively more accurate picture of Irish NFCs, it is important to recognise the continued impact of large MNCs on Irish debt. Chart 4 shows that Ireland continues to have a highly indebted NFC sector compared to other euro area countries. As outlined in Cussen (2014), preliminary work carried out by the Central Statistics Office (CSO) suggests that Irish NFC debt would be substantially reduced by the exclusion of foreign MNCs. Work is ongoing in the CSO with a view to separating MNC debt from indigenous company debt.

3.2 Holding of NFC Loans

As outlined above, Ireland has one of the most highly indebted NFC sectors in the EU (Chart 4). It is, therefore, extremely important to monitor which sectors hold NFC loans[10], to assess possible vulnerabilities. The whom-to-whom data from the enhanced QFA facilitates this analysis.

Overall, Irish NFC loan liabilities have been quite volatile since the ESA 2010 series began in Q1 2012 (Chart 5). The most volatile component of NFC loans relates to funding by non-residents. This volatility largely reflects activities by MNCs, which can be very large relative to the size of the Irish economy. At Q3 2012, €152.7 billion NFC loans were held by non-residents. This represents nearly half of all NFC loans. MNCs' position with non-residents reflects their access to international funding sources such as capital markets and corporate treasuries, which for the most part are unavailable to indigenous Irish NFCs.

NFC loans held by OFIs were also relatively sizable by end-Q3 2014, amounting to almost €64 billion or 22 per cent of total loans. This reflects a number of different factors. During 2010, €74 billion of loans were transferred to National Asset Management Agency Investment Ltd. (NAMA-IL), with an average haircut of 57 per cent. OFI loans also include NFC funding from treasury companies, as well as loans with other financial vehicle corporations. In addition, in recent years MFIs have sold their loan books to non-MFI asset management companies. These companies are classified in the OFI or non-resident sectors depending on their residency.

NFC loans with MFIs represented just 18.2 per cent of total NFC loans by end-Q3 2014. Irish credit institutions' holdings of NFC loans have decreased substantially in recent years. At its peak in September 2008, credit institutions held NFC loans amounting to nearly €170 billion. By end-2014, this had decreased to €60 billion. Table A decomposes the channels through which NFC loans with credit institutions have been reduced. Overall, net loan repayments by NFCs have reduced debt by over €21 billion since October 2008. Between October 2008 and November 2010, revaluations (mainly provisions, write-downs and write-offs) accounted for €34.4 billion of the decline in loans to NFCs. A further €5.9 billion of revaluations (mainly write-offs) took place from December 2010 onwards. It is

10 NFC debt is comprised of debt securities and loans. Whom-to-whom information on NFC debt securities will not be available until January 2016. Almost 97 per cent of NFC debt is comprised of loans.

Table A: Decomposition of the Change in Stock of NFC Loans with MFIs, € millions

Time period	Change in stock	Transactions	Revaluations excluding NAMA (largely due to loan write-downs)	Transfers to NAMA	Other (including reclassifications and loan securitisations)	Methodological change introduced in Dec 2010[11]
Dec 2010 – Jan 2015 (gross basis)	-32,569	-16,356	-5,879	-11,720	-9959	10,022
Oct 2008 – Nov 2010 (net basis)	-75,231	-5,511	-34,175	-26,216	-10,534	

Source: Central Bank of Ireland.

important to note, in relation to the latter, that due to a change in methodology these revaluations do not include provisions for bad debts. The table also shows transfers to NAMA reduced NFC debt with credit institutions by nearly €38 billion. These NFC loans are now classified in OFIs. Other factors influencing the decline in NFC debt include securitisations and reclassifications. The latter was significantly impacted in 2014, when IBRC was removed from the list of Irish MFIs. Loans issued by IBRC were counterparted to the government sector as of Q3 2014.

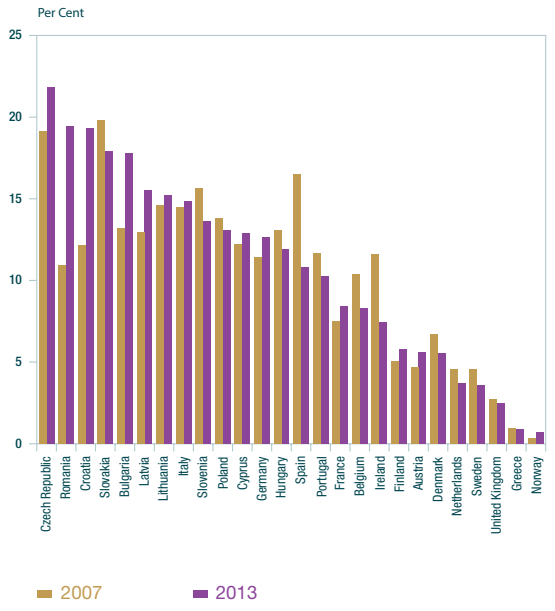
3.3 Alternative funding sources - Trade Credit

Since the financial crisis began, access to credit by small- and medium-sized enterprises (SMEs) has received considerable attention. Holton et al. (2014) provides an overview of the policy responses which have been introduced in Ireland since 2008 to improve credit flows to SMEs. Quantifying the use of trade credit by NFCs in Ireland as a source of financing is informative, given their role as an important source of financing. However, as the NFC balance sheet is only available at an aggregate level, it is not possible to assess the extent to which the activities of multinationals and other large NFCs may mask the activities of SMEs. Demirgüç-Kunt and Maksimovic (2001) find that in nearly every developed and developing economy, trade credit is the most important alternative to bank loans as a source of external funding for SMEs. In the United States, for example, trade credit provides almost as much debt financing to SMEs as bank loans (Berger and Udell, 1998).

The enhanced QFA data separates trade credit from 'other account payable/receivable', allowing a more in-depth analysis of this source of funding for Irish NFCs. Chart 6 confirms the importance of trade credit as a source of financing to Irish NFCs. The chart reveals that at 2013, 7.5 per cent of Irish NFC funding was derived from 'trade credit'. This represents a decline of 4.5 percentage points compared to 2007. The decline in trade credit received by Irish NFCs during the financial crisis is in line with the findings of McGuinness and Hogan (2014). They find, using a sample of large and small enterprises' balance sheets, that at an aggregate level Irish firms received less trade credit during the financial crisis. Their analysis also revealed, however, that trade credit received by small and medium sized companies from more liquid firms increased during the crisis. Similarly, Lawless et al. (2013) found that trade credit became a relatively more important source of finance for SMEs, since the financial crisis began. This is in line with Berger and Udell (1998) findings that trade credit is more important for smaller firms than large enterprises. A full understanding of the role of trade credit by Irish NFCs, would require a breakdown between the activities of MNCs and indigenous companies.

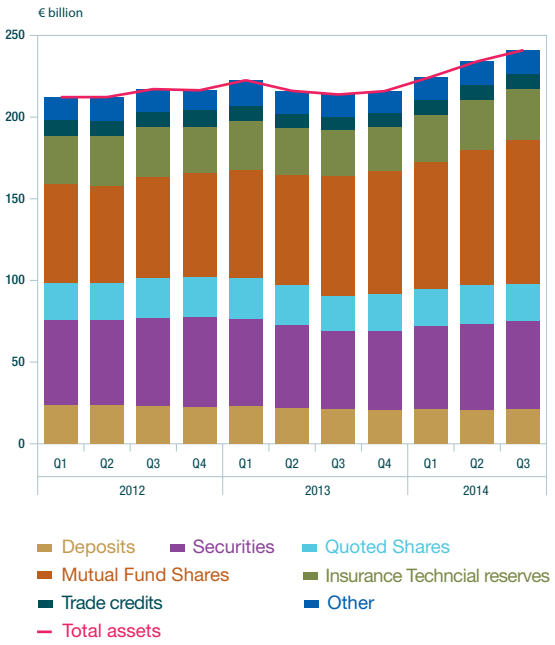
11 A methodological change was introduced in December 2010. Prior to this, loans were reported on a net basis with revaluations including provisions as well as write-downs. From December 2010, loans were reported on a gross basis, with provisions excluded.

Chart 6: Trade Credit as a proportion of total NFC liabilities



Source: Eurostat.

Chart 7: Financial Assets Held by Irish Insurance Corporations



Source: QFA, Central Bank of Ireland.

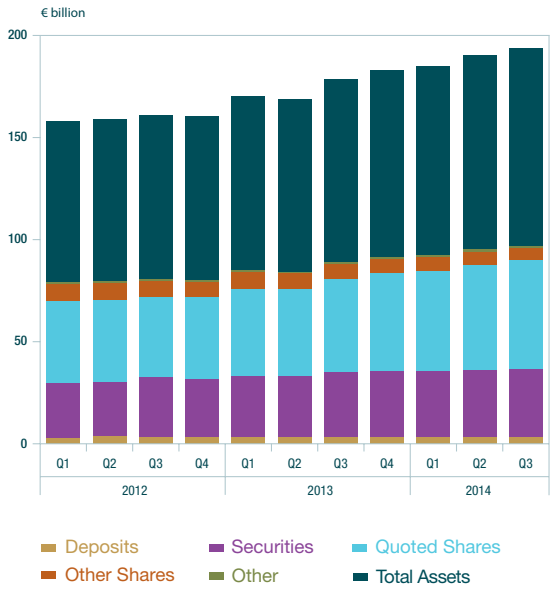
Chart 6 shows that overall the reliance of NFCs on trade credit varies considerably across Europe. Demirgüç-Kunt and Maksimovic (2001) find that the development level of a country's legal infrastructure and banking system predicts the use of trade credit. In addition, trade credit as a proportion of total financing also significantly declined for a number of other countries between 2007 and 2013. Spanish NFC ratio declined the most, falling by 6 percentage points.

4. Disaggregation of Insurance Corporations and Pension Funds

At end-April 2015, QFA will publish, for the first time, separate balance sheets and transactions for insurance corporations and pension funds. Both of these financial intermediaries play important roles within the Irish economy. The insurance industry allows households and non-financial corporations to reduce their exposure to possible risks. The pension fund industry helps households to prepare for retirement. The disaggregation of insurance corporations and pension funds in the QFA series will allow users to ascertain the main financial assets in which these financial institutions invest. This will enable users to identify possible risks, arising from valuation changes, and the implications for their insurance policies.

By end-Q3 2014, Irish insurance corporations held assets totalling over €240 billion (Chart 7). Most of these assets were held in the form of mutual fund shares. These represented 36 per cent of insurance companies' total financial assets. Debt securities were the next largest asset held, representing 22 per cent of financial assets. Irish pension funds held financial assets valued at €96 billion at end-Q3 2014 (Chart 8). Quoted shares represented 55 per cent of total financial assets, with debt securities accounting for a further 22 per cent. In January 2016, the publication of whom-to-whom data for securities, quoted shares and mutual funds

Chart 8: Financial Assets held by Irish Pension Funds



Source: QFA, Central Bank of Ireland.

will facilitate greater analysis of which sectors of the economy insurance corporations and pensions funds are exposed to.

5. Future further enhancements to QFA

Over the next two years, the QFA series will be further expanded to include additional breakdowns and to provide a consistent time series back to Q1 2002. The April 2015 QFA publication will include the whom-to-whom data for deposits, short-term loans and long-term loans for the first time. The financial sector will also be broken down further into 'insurance corporations' and 'pension funds' for the April publication. Moreover, by January 2016, whom-to-whom information will also be published for short-term securities, long-term securities and quoted shares.

In the April 2015 publication, the QFA time series will be published back to Q1 2012.

During 2015 and 2016, additional backdata will be provided as they become available. By mid-2017, the QFA series will be extended back to Q1 2002.

6. Conclusion

The financial crisis highlighted the risks to financial stability associated with high private-sector debt, the transmission of these risks to other sectors of the economy, as well as, the risks associated with sectors using potentially volatile sources of funding. The enhancements to QFA described in this article will improve users' abilities to quantify and evaluate these risks. In addition, the disaggregation of insurance corporations and pension funds balance sheets will allow users to more accurately identify the financial assets in which these sectors invest and to ascertain potential vulnerabilities to these sectors arising from these investments.

The whom-to-whom deposits and loans information that will be provided as part of QFA from April 2015, will allow users to analyse possible contagion risks between sectors within the Irish economy. The tables will also provide users a greater understanding of the manner in which the sectors of the economy fund each other. From January 2016, the publication of additional whom-to-whom tables for securities, quoted shares and mutual funds will further add to this analysis. Castrén and Kavonius (2009) show how the transmission of shocks in particular sectors can be transmitted to other sectors of the economy using this whom-to-whom approach. Furthermore, the new definition of the NFC sector under ESA 2010 and the publication of NFC trade credit data, facilitate a better understanding of NFC debt levels and alternative funding sources.

The enhanced QFA data will obviously be useful for a number of purposes, including macroeconomic and macrofinancial analysis. However, it is clear that the data will be particularly useful for financial stability

purposes, such as identifying contagion risks, and will fill a number of important data gaps. There are a number of issues which future enhancements to QFA could usefully address. For example, a disaggregation of NFCs by indigenous domestic NFCs and MNCs would be extremely useful in interpreting trends in the NFC series. In addition, a further disaggregation of OFIs would facilitate a more in-depth analysis of shadow banking activities. Furthermore, as described in Section 2.2, though in many cases credit institutions have securitised loans, the ultimate risk for these loans remain with the credit institution and not the financial vehicle corporation. This is a potential limitation of using the whom-to-whom data for analysing contagion risk.

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Statistical Appendix

Statistical Appendix

The publication of the Statistical Appendix of the Quarterly Bulletin was discontinued from Quarterly Bulletin 1 2014. Statistical data compiled by the Central Bank are accessible on the Statistics page of the Central Bank's website, http://www.centralbank.ie/polstats/stats/Pages/default.aspx. Some tables, previously published in the Statistical Appendix, have been expanded to provide more comprehensive data. A number of statistical tables, which were not published in earlier Bulletins, have also been added.

The list of statistical tables and links to access them on the website are given on the following page.

STATISTICAL TABLES: CENTRAL BANK WEBSITE LINKS

Money and Banking:
http://www.centralbank.ie/polstats/stats/cmab/Pages/Money%20and%20Banking.aspx

- Summary Irish Private Sector Credit and Deposits
- Financial Statement of the Central Bank of Ireland
- Credit Institutions – Aggregate Balance Sheet
- Credit Institutions (Domestic Market Group) – Aggregate Balance Sheet

Business Credit and Deposits:
http://www.centralbank.ie/polstats/stats/cmab/Pages/BusinessCredit.aspx

- Credit Advanced to Irish Resident Private-Sector Enterprises
- Deposits from Irish Resident Private-Sector Enterprises

Private Household Credit and Deposits:
http://www.centralbank.ie/polstats/stats/cmab/Pages/HouseholdCredit.aspx

- Credit Advanced to and Deposits from Irish Private Households

Money Market Funds:
http://www.centralbank.ie/polstats/stats/cmab/Pages/MoneyMarketFunds.aspx

- Money Market Funds Aggregate Balance Sheet
- Money Market Funds Currency Breakdown of Assets

Retail Interest Rates:
http://www.centralbank.ie/POLSTATS/STATS/CMAB/Pages/Retail%20Interest%20Rate%20Statistics.aspx

- Retail Interest Rates - Deposits, Outstanding Amounts
- Retail Interest Rates - Loans, Outstanding Amounts
- Retail Interest Rates and Volumes - Loans and Deposits, New Business
- Official and Selected Interest Rates

Investment Funds:
http://www.centralbank.ie/polstats/stats/investfunds/Pages/data.aspx

- Ireland: Investment Funds Data

Securities Issues:
http://www.centralbank.ie/polstats/stats/sis/Pages/Issues.aspx

- Securities Issues Statistics

Financial Vehicle Corporations:
http://www.centralbank.ie/polstats/stats/fvc/Pages/data.aspx

- Irish Financial Vehicle Corporations

Locational Banking Statistics:
http://www.centralbank.ie/polstats/stats/locational/Pages/data.aspx

- Total Positions of Banking Offices Resident in Ireland vis-a-vis Residents and Non-Residents

Quarterly Financial Accounts:
http://www.centralbank.ie/polstats/stats/qfaccounts/Pages/Data.aspx

- Financial Accounts for Ireland: Q4 2012 to present

Public Finances and Competitiveness Indicators:
http://www.centralbank.ie/polstats/stats/sis/Pages/SecuritiesHoldingsStatistics.aspx

- Gross National Debt
- Holdings of Irish Government Long-term Bonds

http://www.centralbank.ie/polstats/stats/Pages/hcis.aspx

- Nominal and Real HCIs

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