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Central Bank Quarterly Bulletin



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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

	2011	2012	2013 ^e	2014 ^f	2015 ^f
Real Economic Activity					
(% change)					
Personal consumer expenditure	-1.6	-0.3	-0.2	1.0	1.3
Public consumption	-2.8	-3.7	-0.9	-2.1	-1.5
Gross fixed capital formation	-9.5	-1.0	0.1	8.9	9.9
<i>of which:</i> Building and construction	-16.2	-4.0	9.4	10.4	9.9
Machinery and equipment	-0.9	2.6	-10.0	7.0	10.0
Exports of goods and services	5.4	1.6	0.3	3.5	5.1
Imports of goods and services	-0.4	0.0	-0.1	3.1	4.6
Gross Domestic Product (GDP)	2.2	0.2	0.4	2.1	3.2
Gross National Product (GNP)	-1.6	1.8	2.0	2.2	2.5
External Trade and Payments					
Balance-of-Payments Current Account (€ million)	2,002	7,248	10,198	11,559	12,804
Current Account (% of GDP)	1.2	4.4	6.1	6.7	7.1
Prices, Costs and Competitiveness					
(% change)					
Harmonised Index of Consumer Prices (HICP)	1.2	1.9	0.5	0.4	1.0
<i>of which:</i> Goods	1.5	1.9	-0.4	-0.8	0.3
Services	0.8	1.9	1.6	1.7	1.8
HICP excluding energy	0.0	0.9	0.6	0.6	1.3
Consumer Price Index (CPI)	2.6	1.7	0.5	0.3	0.9
Nominal Harmonised Competitiveness Indicator (Nominal HCI) ^a	0.8	-4.0	2.8	n.a.	n.a.
Compensation per Employee	-0.1	0.8	-0.2	0.5	1.3
Labour Market					
(% change year-on-year)					
Total employment	-1.8	-0.6	2.1	2.0	2.0
Labour force	-0.9	-0.6	0.4	0.5	1.0
Unemployment rate (ILO)	14.6	14.6	13.2	11.9	11.0
Technical Assumptions^b					
EUR/USD exchange rate	1.39	1.29	1.32	1.35	1.35
EUR/GBP exchange rate	0.87	0.81	0.82	0.84	0.84
Oil price (\$ per barrel)	111.26	111.65	110.10	109.40	103.83
Interbank market – Euribor ^c (3-month fixed)	1.39	0.57	0.23	0.30	0.50

^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 mid December. 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

Ireland has emerged from the EU/IMF Programme against a background of increased market confidence in the outlook for the country's economic performance and policy prospects. This has been reflected in an improvement in the market's assessment of Ireland's creditworthiness, helping the Sovereign and domestic banks to regain access to market funding at, increasingly, more favourable rates. The key to the return of market confidence, to the extent that now exists, has been the combination of strong policy implementation over the period of the Programme and growing signs of gradually improving economic conditions. Particularly important has been adherence to the fiscal targets, which has brought about a reduction in the General Government Deficit, leaving it on track to fall below 3 per cent of GDP by 2015. With the ending of the EU/IMF Programme, continuing to build on the achievements of recent years will be crucial to ensuring continued access to market financing at relatively favourable rates into the future.

More significantly, further progress in terms of policy implementation across a range of areas is required before Ireland can be considered to have recovered from the crisis. The main challenges remain the need for further fiscal consolidation, restoring banking soundness and sustaining the rebound in employment growth through improvements in competitiveness. While much has been achieved, creating the conditions for a sustainable economic recovery will require further reductions in the level of debt in the economy, both public and private, returning the banking system to a position where it can support the economy with adequate lending, and getting the rate of employment well up from the low level to which it had fallen in the crisis. To ensure that these challenges are overcome, continued adherence to the policies that were in place during the Programme remains essential.

With respect to the public finances, the latest estimates suggest that the General Government Deficit for 2013 should come in below the 7.5 per cent of GDP target under the Excessive Deficit Procedure. Projections indicate that the debt-to-GDP ratio has peaked and at a slightly lower level than previously expected. While these are welcome developments, deficit and debt levels remain very high and further consolidation is needed in coming years to put debt firmly on a downward path and secure

sustainability. Through reducing uncertainty, this should contribute to a faster and more lasting recovery and also reinforce the confidence of international lenders and further improve access to market funding.

In the banking sector, while liquidity and funding conditions have improved, the key issues revolve around the need for further progress in dealing with the resolution of impaired loans in order to put the system back on a sustained sound footing to be in a position to support recovery. In accordance with the mortgage arrears resolution strategy and targets, the Central Bank has continued to require the banks to accelerate their work to ensure the conclusion of sustainable long-term arrangements. While progress has been slow, momentum is building and the Bank continues to work to ensure that banks and mortgage borrowers in arrears move to conclude durable solutions. The Bank is also monitoring ongoing steps to cure and resolve legacy debt problems of small firms.

The importance of maintaining progress in the restoration of competitiveness must not be neglected. While moderate wage growth and reductions to the cost base of the economy have helped restore some of the competitiveness lost during the boom, further improvements in productivity

and competitiveness would help to boost Ireland's growth potential and support further employment growth.

Continuing to make progress on fiscal and banking issues and enhancing productivity and the competitiveness of the economy is the best way to ensure that the emerging improvement in economic conditions can be sustained. While GDP growth in the first half of 2013 was held back by the negative impact on exports of the expiry of some pharmaceutical patents and weakness in trading partner countries, a range of indicators signal that economic activity picked up in the second half of 2013. Encouragingly, the most recent data indicate that employment has grown strongly over the past year. Initially, the recovery in employment was confined to part-time jobs, however, recent quarters have seen steady growth in full-time employment, which appears to be broadly based. Looking ahead, this is likely to support household incomes and consumer confidence and, on this basis, modest positive growth in consumer spending is projected for 2014. Investment spending has also gathered an underlying momentum (abstracting from one-off factors) and is expected to continue to do so over the forecast horizon. Taken together, this points to some increase in domestic demand in 2014, though this is likely to be modest given that many headwinds to recovery still remain. On the external side, while patent expirations in the pharmaceutical sector

are likely to continue to have some impact, improving external demand is projected to support stronger export growth this year and next.

Taking account of these developments suggests a marginally weaker outturn for GDP growth last year, but a slightly stronger outlook for this year, than previously forecast. As a result of the weak first half of 2013, GDP is now estimated to have grown by a modest 0.4 per cent last year. However, taking account of the recent signs of recovery and factoring in an improvement in external demand, GDP growth of 2.1 per cent is forecast for 2014. In terms of GNP, however, the pattern of growth over 2013 and 2014 is more even. With the impact of patent expirations in 2013 being offset in measured GNP by a reduction in associated profit outflows, the out-turn for GNP growth in 2013 is likely to be around 2.0 per cent, with GNP growth of 2.2 per cent forecast for this year. In 2015, on the basis of consensus forecasts from the main international economic institutions projecting a recovery in external demand back to its long run trend and also supported by stronger growth in final domestic demand, GDP is forecast to grow by 3.2 per cent, with GNP expected to rise by 2.5 per cent. Ireland needs to continue along the path of consolidation and reform that it has pursued for some years now to help ensure that the emerging economic recovery is sustainable.

The Domestic Economy

Overview

- *Output in the Irish economy increased in 2013 by about 0.4 per cent in GDP terms, reflecting a small decline in domestic demand offset by a small positive contribution from exports. This marginal downward revision compared to estimates published in the previous Bulletin mainly arises from weaker than expected export growth last year. GNP growth, on the other hand, was revised upwards from 0.1 to 2.0 per cent reflecting a downward adjustment to estimated net factor income outflows which are subtracted from measured GDP to derive GNP. While a number of factors have accounted for this decline (see Box A below), of particular significance has been the impact of patent expiry on the profitability of pharmaceutical firms operating in Ireland.*
 - *The statistical treatment of the movement of a number of important drugs off patent has resulted in a large measured decline in both production and exports from the pharmaceutical sector. Since these account for about 25 per cent of exports, the consequent negative impact on measured GDP has been significant. However, given the corresponding decline in profit outflows, there has been an offsetting upward adjustment to GNP which has also been boosted in 2013 by other unrelated factors (Box A). As a result, a wide gap has emerged between the growth rates of GDP and GNP in 2013 and growth in GDP over the past year is lower than other indicators of economic activity would suggest, in particular employment.*
 - *A recovery in export growth in 2014, reflecting both stronger external demand and a less significant impact from patent expiry on goods exports, should contribute to an increase in GDP growth. In addition, domestic demand, which came close to stabilisation in 2013, seems set to expand this year given the improved outlook for consumer demand and the prospect of a sizable acceleration in investment growth. Overall GDP growth of about 2.1 per cent*
- is forecast for 2014 while GNP is projected to expand by 2.2 per cent.*
- *In 2015, continued strong growth in GDP and GNP of about 3.2 per cent and 2.5 per cent, respectively, is expected. These forecasts are predicated on continued recovery in external demand which should be complemented by expansion in the domestic economy as growth in investment expenditure is sustained and the growth in consumer spending gathers pace against a background of further improvement in labour market conditions and an easing of headwinds arising from fiscal consolidation.*
 - *A much stronger than expected revival in labour market conditions was a welcome surprise during 2013 and this is reflected in an upward revision to labour market conditions in this Bulletin. The 2013 employment growth estimate has been revised up by one percentage point to 2.1 per cent and there is an upward revision to the projection for 2014 to about 2 per cent with a similar rate of expansion forecast for 2015. This reflects both the strong outturn in the first nine months of 2013 and the improved prospects for domestic demand growth in 2014 and 2015. The improving labour market situation should be reflected in a marked decline in the unemployment rate over the projection horizon.*
 - *Despite the strong growth in employment recorded during the course of 2013, there is little evidence of any significant upward pay pressures in the economy and this is reflected in relatively weak domestic inflationary pressures. Indeed, underlying inflation pressures, as measured by the increase in the HICP excluding energy, moderated in 2013. For the current and next year, inflationary pressures in Ireland are expected to remain muted. HICP inflation, which averaged 0.6 per cent in 2013, is projected to average 0.4 per cent and 1 per cent in 2014 and 2015 respectively.*

Demand

Consumer spending

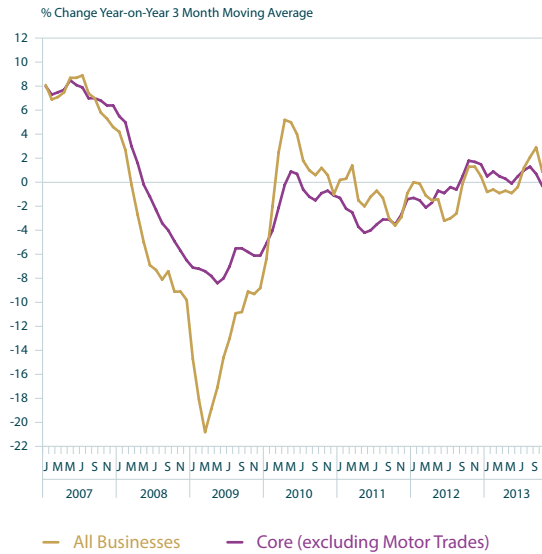
Consumer spending fell sharply during the most acute phase of the recent economic crisis in 2009, since then it has been on a fairly persistent downward trend. Consumers had adjusted their expenditure levels in the face of persistently weak labour market conditions, declining real disposable incomes and reflecting efforts by households to reduce an excessive level of personal debt. Improving labour market conditions lent some support to disposable incomes during last year and this was reflected in a modest pick-up in consumption during the year partly reversing a sharp decline in the first quarter. For the year as a whole, a marginal decline of about 0.2 per cent in volume terms seems likely for 2013 and taking account of this decline, consumer spending is currently over 6 per cent below its pre-crisis level.

Recent indicators have been broadly consistent with a modest recovery in consumer demand during the second half of 2013. Consumer sentiment, while remaining below its long-run trend, was on a steady upward path during the year. In December, the KBC/ESRI Consumer Sentiment Index was at its highest level since June 2007 and was up 30 percentage points on an annual basis. Retail sales, which declined markedly in the first quarter reflecting particularly weak car sales, recovered modestly during the remainder of the year and a broadly flat outturn for the year as a whole seems likely. While fiscal factors will still have some dampening influence, taking account of the positive momentum in the latter part of 2013 and the improving prospects for employment and incomes in 2014, modest growth in consumer spending of about 1 per cent is forecast for this year. A further acceleration to about 1.3 per cent growth is projected for 2015, reflecting continued improvement in labour market conditions and the prospect of some moderation in fiscal headwinds.

Investment

Investment spending in the first three quarters of 2013 was skewed by a significant year-on-

Chart 1: Index of Volume of Retail Sales



Source: CSO.

year fall in aircraft purchases, which contributed to a decline in overall investment in annual terms but masked a strong underlying recovery. Reflecting this, investment spending for the first three quarters of 2013 fell 2.9 per cent year-on-year; however, the underlying picture, net of aircraft investment, was more positive – up 8.3 per cent for the same period. The detailed data suggest that the substantial declines in investment experienced over the last five years look to be coming to a halt, with businesses likely to restock capital in the years ahead as the domestic and international economic environment improves (see signed article on Trends in Business Investment). Overall investment is forecast to have registered only minimal growth in 2013 for the year as a whole – up 0.1 per cent.

There has been a notable pick-up in investment in the building and construction sector, although from a low base. On the housing front, while housing completions for 2013 are likely to have declined marginally on the 2012 outturn of 8,500, the outlook for 2014 and 2015 is for an increase in completions to 10,000 and 12,000 new units. On the non-residential side, there was a strong increase in commercial activity in the first three quarters of 2013. While some of these investments may be of a one-off nature,

Table 1: Expenditure on Gross National Product 2012, 2013^e, 2014^f and 2015^f

	2012			2013 ^e			2014 ^f			2015 ^f
	EUR volume millions	% change in price	price	EUR volume millions	% change in price	price	EUR volume millions	% change in price	price	EUR millions
Personal Consumption Expenditure	82634	-0.2	1.3	83539	1.0	1.3	85432	1.3	1.5	87827
Public Consumption	25096	-0.9	1.0	25108	-2.1	1.0	24819	-1.5	0.7	24608
Gross Domestic Fixed Capital Formation	17434	0.1	1.1	17635	8.9	1.5	19496	9.9	1.9	21835
<i>Building and Construction</i>	9021	9.4	1.3	10003	10.4	2.0	11264	9.9	2.5	12689
<i>Machinery and Equipment</i>	8413	-10.0	0.8	7632	7.0	0.8	8232	10.0	1.0	9146
Value of Physical Changes in Stocks	376			700			400			400
Statistical Discrepancy	-1348			-1348			-1348			-1348
GROSS DOMESTIC EXPENDITURE	124192	-0.1	1.2	125632	1.2	1.3	128799	2.1	1.4	133322
Exports of Goods & Services	176736	0.3	0.6	178435	3.5	1.0	186576	5.1	1.7	199391
FINAL DEMAND	300928	0.2	0.9	304069	2.6	1.1	315375	3.8	1.6	332713
Imports of Goods & Services	-136990	-0.1	0.5	-137541	3.1	1.1	-143442	4.6	1.6	-152378
GROSS DOMESTIC PRODUCT	163938	0.4	1.2	166528	2.1	1.1	171933	3.2	1.6	180335
Net Factor Income from Rest of the World	-31289			-29407			-30203			-32746
GROSS NATIONAL PRODUCT	132649	2.0	1.3	137121	2.2	1.1	141730	2.5	1.6	147589

this sector is projected to continue to grow in 2014 and 2015, although at more moderate rates. The Ulster Bank Construction PMI is suggestive of a turnaround in the construction sector, with activity, new orders and confidence pointing to expansion in the housing and commercial construction sectors. There is limited growth forecast in the civil engineering sector as the government adheres to its fiscal targets. On the whole, building and construction is forecast to increase by 10.4 and 9.9 per cent this year and next, subject to continued improvements in domestic demand, credit conditions and the wider global economic environment.

On the machinery and equipment (M&E) side, while the total M&E figure registered a 17 per cent year-on-year decline in the first three quarters of 2013, the underlying performance, net of aircraft, was up 11 per cent. The underlying picture is more relevant as aircraft investment has a limited impact on domestic economic activity and employment. It is

anticipated that this positive underlying outturn will continue into 2014 and 2015 as companies restock in the face of a more favourable economic environment, with machinery and equipment investment projected to increase by 7 and 10 per cent this year and next. Taken together with the building and construction forecasts, these forecasts imply that, although coming from a very low base, investment should contribute positively to domestic demand with an increase of approximately 9 per cent and 10 per cent forecast for 2014 and 2015.

Stock Changes

Stock changes are estimated to have made a small positive contribution to growth in 2013 of about 0.2 percentage points which is projected to be reversed in 2014 with stock changes assumed to have a broadly neutral impact on the change in GDP in 2015.

Box A: What is driving GNP?

By Thomas Conefrey and Martin O'Brien¹

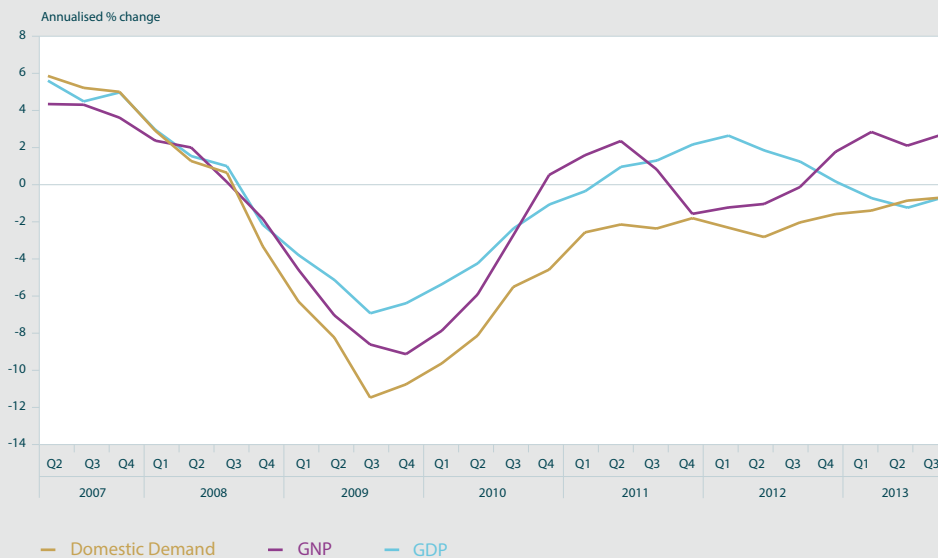
The latest projections for GNP growth in this Bulletin contain significant revisions to earlier forecasts, particularly the expected outcome for 2013. This Box explores the drivers of the recent divergent trends in GDP and GNP growth.

Overall the strong performance of GNP in 2013 is largely explained by the trend in net factor income for the first three quarters of last year. This, in part, “adjusts” for the impact of the treatment of the pharmaceutical patent cliff which dampened GDP growth² in 2013, but is also due to developments in the financial sector that are unrelated to the domestic economy. The revisions to GNP growth in this Bulletin therefore are not based on a significant reassessment of the underlying strength of the domestic economic recovery.

Looking at the performance of the economy for the first nine months of 2013 compared to the same period in 2012, a very different view of the strength of the economy emerges using GNP as a measure of activity rather than GDP. GNP growth for the first three quarters of 2013 averaged 2.7 per cent compared to the recorded 0.5 per cent decline in GDP over the same period. As explained in FitzGerald (2013), the weakness of GDP reflects the treatment of an off-patent drug as a new product in the National Accounts and has resulted in a large measured fall in the volume of output, goods exports and GDP.

Figure 1 below shows the percentage change in annualised GDP, GNP and domestic demand. The chart shows the divergent trends in GDP and GNP since late 2012. The annualised change in domestic demand is represented by the yellow line. Domestic demand turned negative in late 2008 and although the pace of contraction has eased in recent quarters, growth remains negative on an annualised basis. The individual components of domestic demand – consumption, investment and government spending – are all lower for the first nine months of 2013 compared to the same period in 2012.

Box A Fig 1: Annualised (4-quarter sum) GDP, GNP and domestic demand, year-on-year % change



Source: CSO Quarterly National Accounts.

¹ Irish Economic Analysis Division.

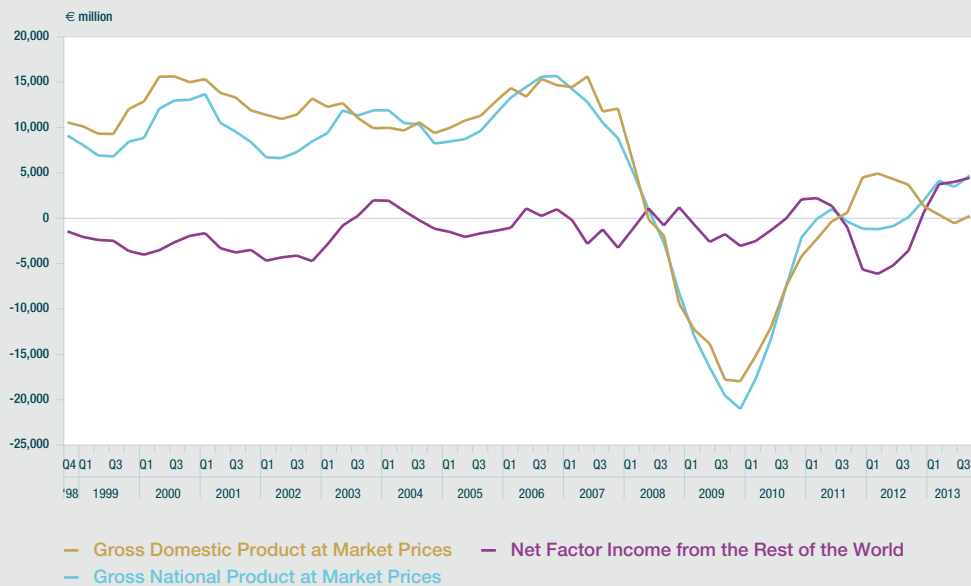
² See FitzGerald, J., (2013). “The effect on major national accounting aggregates of the ending of pharmaceutical patents”, Dublin: The Economic and Social Research Institute. Research Note 2013/2/1.

Box A: What is driving GNP?

By Thomas Conefrey and Martin O'Brien

In terms of expenditure, in the National Accounts, the difference between GDP and GNP is net factor income from the rest of the world. This comprises the difference between income streams on the labour and capital (either equity or debt) factors of production that flow into and out of the economy over a given period. The relatively large presence of multinational corporations, particularly in the financial sector, means that net factor income related to capital can be significant in the Irish context, and the underlying debit and credit gross flows are large. Prior to 2011 changes in GNP were more highly correlated with changes in GDP than changes in net factor income (Box A Figure 2). From mid-2011 onwards this situation has reversed, and GNP dynamics are much more related to those of net factor income. In turn, developments in net factor income in the first three quarters of 2013 have been driven by changes in net direct equity income (profit flows related to FDI in and out of Ireland) and net portfolio income on debt (interest payments on loans and debt securities issued to, or received from foreign counterparts). Overall, net factor income from the rest of the world has risen by €3.4 billion when comparing the first three quarters of 2013 to the same period in 2012, to stand at minus €21.1 billion.

Box A Fig 2: Annualised (4-quarter sum) nominal GDP, GNP and net factor income, year-on-year change



Source: CSO Quarterly National Accounts.

Since GNP excludes the profits of the large multinational sector, which enter as a negative factor income, it is often stated to be a better measure of domestic economic activity than GDP. The National Accounts treatment of the patent cliff in the pharmaceutical sector implies a significant reduction in the volume of output, which, can be offset by either lower outflows of related royalty payments or lower profits for the sector. If the offsetting comes through lower royalty payments, which are part of the services imports, the effect on GDP and GNP will be negligible. However if the offset comes through reduced profits generated in Ireland by multinational pharma companies, then net factor income outflows are lower, driving GNP higher, while GDP remains lower as a result of the lower volume of exports. The latest available data for the first three quarters of 2013 indicate that the rise in the overall net direct equity income of €2.4 billion has been driven by a reduction of almost €2.1 billion in profits generated by foreign head-quartered multinationals in Ireland (Box A Table 1). There does not appear to be as significant a reduction in outflows of royalties.

Box A: What is driving GNP?*By Thomas Conefrey and Martin O'Brien***Box A Table 1: Comparison of Factor Income Components**

		2012 Q1-Q3 Level			2013 Q1-Q3 Level			2013 Q1-Q3 Change from 2012		
		Credit	Debit	Net	Credit	Debit	Net	Credit	Debit	Net
Total factor income		43,400	-67,839	-24,439	41,283	-62,345	-21,062	-2,117	5,494	3,377
Direct investment income:	Equity	10,225	-30,659	-20,434	10,579	-28,580	-18,001	354	2,079	2,433
	Debt	2,923	-3,456	-533	2,766	-3,377	-611	-157	79	-78
Portfolio investment income:	Equity	4,855	-13,484	-8,629	5,262	-14,358	-9,096	407	-874	-467
	Debt	14,346	-10,047	4,299	14,160	-8,297	5,863	-186	1,750	1,564
Other investment income and Compensation of employees		11,048	-10,193	855	8,515	-7,735	780	-2,533	2,458	-75

Source: CSO Balance of Payments Statistics.

Aside from the equity income flows, reductions in debt interest payments abroad was the most significant driver of changes in net factor income in the first three quarters of 2013 (year-on-year reduction of €1.75 billion). The financial sector, especially internationally focussed entities in the IFSC, dominate the debt interest payments for the economy as a whole, accounting for over 70 per cent of interest payments on average over the past decade³, the majority of which would be to foreign counterparts. The financial sector also accrues almost the entire interest received in the economy, again the bulk of which would be due from foreign residents. Over the last number of quarters, interest paid by the financial sector in Ireland has fallen substantially, as the overall level of debt issued by the sector has fallen and interest rates on newly received loans or debt securities issued is lower than in previous years. Interest payments by the financial sector over the first three quarters of 2013 were €4.6 billion lower than the same period in 2012. At the same time interest received by the Irish financial sector has remained relatively stable. Combined, these developments contribute significantly to the overall increase in net factor income through 2013.

To summarise, this analysis suggests that GNP growth in 2013 has been driven by developments in net factor income from the rest of the world more so than developments in GDP. Changes in net factor income through 2013 is dominated by lower profits being generated by foreign head-quartered multinationals in Ireland and lower interest payments to foreign holders of the debt of the Irish resident financial sector. As shown above, balance of payments data indicate that the associated loss of revenue and profits appears to date to have materialised as a reduction in profit outflows rather than royalties. Consequently, the boost to GNP from lower profit outflows in 2013 could be interpreted as providing an offsetting effect to the sharp fall in measured output in industry and GDP. This implies that GDP trends in 2013 may be lower than other indicators of underlying economic activity would suggest, in particular employment. However this only explains part of the rise in GNP so far reported for 2013 and the upward revision to GNP growth contained in this Bulletin. Financial sector developments, which are for the most part unrelated to the domestic economy, account for a significant portion of the rise in GNP. To the extent that these persist in contributing to growth in net factor income in the coming year, they would further support GNP growth unrelated to domestic consumption, investment or export activity.

³ Source: CSO Institutional Sector Accounts: Non-Financial.

Table 2: Merchandise Trade (Adjusted) 2012, 2013^e, 2014^f, 2015^f

	2012			2013 ^e			2014 ^f			2015 ^f
	EUR millions	volume change in	price change in	EUR millions	volume change in	price change in	EUR millions	volume change in	price change in	EUR millions
<i>Merchandise Exports</i>	85852	-3.8	-0.6	82090	-0.3	-0.2	81647	0.8	0.7	82843
<i>Merchandise Imports</i>	-49485	-4.7	-0.5	-46923	1.2	1.0	-47961	2.5	1.2	-49750
Merchandise Trade Balance (Adjusted)	36367			35167			33686			33093
%GDP	22.2			21.1			19.6			18.4

Government Consumption

According to the latest Quarterly National Accounts (QNA), government consumption declined by 0.9 per cent, year-on-year, on average in the first three quarters of 2013 and is estimated to have contracted by 0.9 per cent in real terms for the year as a whole. Taking account of measures announced in detail in Budget 2014 and outlined in general terms for next year, the real level of government consumption is projected to decline by 2.1 per cent and 1.5 per cent, respectively in 2014 and 2015.

External Demand and the Balance of Payments

Merchandise Trade

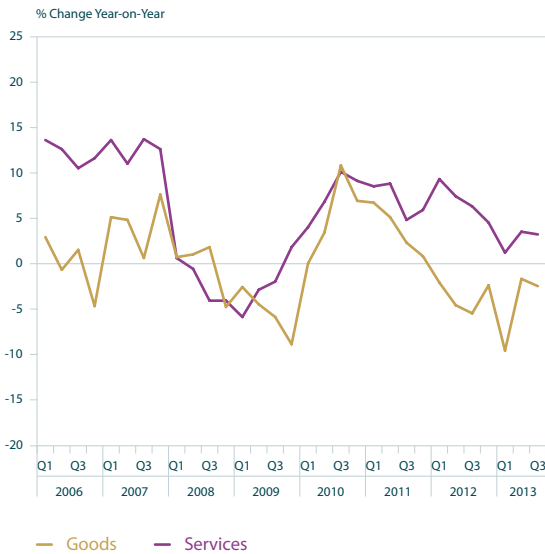
After a particularly disappointing performance during the first quarter of 2013, merchandise exports as reported in the QNA recovered over the second quarter before falling back slightly during the third quarter of the year. While the more stable international environment would have helped to underpin exports as the year progressed, structural issues domestically appear to have been the dominant factor in determining merchandise exports performance in recent quarters. These relate to a number of pharmaceutical products moving off patent, particularly in early 2013, which given the large (circa 25 per cent) share of pharmaceuticals in total merchandise exports has driven overall merchandise export developments.

The latest monthly trade data for October 2013 show a year-on-year fall in the value of merchandise exports of 2.8 per cent, with medicinal and pharmaceutical products being the major driver of this decline. However, this followed a sharp contraction during the third quarter, particularly in the chemical sector, which means on an annual average basis the value of merchandise exports was 6.5 per cent lower in October 2013. The decline in the chemical sector during the year to October was partially offset by strong growth in exports of food and related products and computer hardware, particularly in early-mid 2013.

The latest Investec Purchasing Managers Index (PMI) data confirm a sustained return to growth for the Irish manufacturing sector in December. Over the second half of 2013, this improvement in sentiment has been driven by increasing export orders. While to date this has not translated directly into more robust merchandise export growth, it does point toward a potentially more solid merchandise export demand in 2014.

The latest external demand assumptions imply a small recovery in trade volumes in the last quarter of 2013, with a slightly slower than previously expected recovery in 2014 and 2015. The drag on 2013 export performance of the pharmaceutical patent cliff is not likely to have been offset sufficiently by the more benign international environment, and as a consequence the 2013 outturn is expected to be a fall of 3.8 per cent. Looking forward to 2014 and 2015, the recovery in Ireland's main

Chart 2: Volume of Exports



Source: CSO Quarterly National Accounts.

trading partners is expected to continue at a moderate pace, with the pharmaceutical patent cliff somewhat dampening the response of exports over the forecast horizon. Assuming that the projected recovery in broad external demand materialises, merchandise exports are expected to decline marginally in 2014 and rise by 0.8 per cent in 2015.

Merchandise imports remained weak during the first three quarters of 2013, in line with the export performance over the period, given the high import content of Irish merchandise exports. Weak domestic consumption and investment developments in the first quarter also weighed heavily on imports, and although some indicators for underlying consumption and investment improved through the year, the lack of big-ticket investment expenditures in the form of aircraft purchases means that the rebound was not strong enough to offset the weak first quarter. The expected outturn for exports and domestic demand for 2013 should result in import volumes falling again for the year as whole. As external and domestic demand recover and stabilise through 2014 growth

in merchandise in imports of 1.2 per cent is expected next year, rising to 2.5 per cent in 2015.

Services, Factor Incomes and International Transfers

Since mid-2012, services account for over half of total exports on an annualised volume basis. According to the latest QNA, their continued expansion through the first three quarters of 2013 almost entirely offset the contraction in merchandise exports over the period.

Within the sector, data from the *Balance of Payments* statistics show that computer services continued to be the major contributor to this expansion, although their pace of growth eased to 6.9 per cent on a year-to-year basis in the third quarter. Business services rebounded somewhat in the same period, but appear to have grown at a slower pace in 2013 than in previous years, as does the export of insurance related services. Overall, growth in services exports during 2013 moderated compared with previous years. This likely reflects the weak external demand conditions which also negatively impacted the performance of goods exports.

The latest (December) Investec Services PMI data, point toward a steady pace of growth in the sector. This improvement is broad-based, but most recently has been driven by activity in the tourism and travel and business services sectors. The pace of growth in new export business generally rose through 2013, and remained strong during the last quarter of 2013.

The impact of the more moderate services export growth reported in the QNA for early 2013 has not been offset by a sufficiently strong performance in the second and third quarters. As a consequence, the outturn for 2013 as a whole is likely to be lower than previously expected, with growth of 4.3 per cent. A projected improvement in the European economy, especially the UK

Table 3: Balance of Payments 2012, 2013^e, 2014^f, 2015^f

€ million	2012	2013 ^e	2014 ^f	2015 ^f
Current Account				
Merchandise Trade Balance	36367	35167	33686	33093
Services	3206	5534	9222	13653
Net Factor Income from Rest of the World	-31120	-29253	-30049	-32592
Current International Transfers	-1205	-1250	-1300	-1350
Balance on Current Account	7248	10198	11559	12804
(% of GDP)	4.4	6.1	6.7	7.1

economy, should provide a boost to services exports in 2014 leading to more robust growth of 6.8 per cent, rising to 8.4 per cent in 2015.

The growth in overall services imports in 2013 is likely to have been somewhat higher than that of 2012, as increases in imports of business services offset slightly lower imports of royalties and licences. Similar to merchandise, there is a significant import content to services exports. Consequently, the return to faster services export growth over the forecast horizon is expected to contribute to an increase in the pace of services import growth in 2014 and 2015.

The developments in services trade during 2012 led to the emergence of a surplus in the services trade balance, the growth in which continued into 2013. On the merchandise side, the trade surplus narrowed during the first three quarters of 2013 as the fall in goods exports was somewhat faster than the decline in imports. The small narrowing in the merchandise balance was more than offset by the positive services balance leading to an increase of the overall trade balance in goods and services during the first three quarters of 2013.

The current account of the balance of payments has consistently improved since mid-2008, moving from a deficit of almost 6 per cent of GDP in 2008 to a surplus of 4.4 per cent of GDP in 2012. A number of factors

have featured in this development, including the rising overall trade balance driven by services exports, but also the impact of profit inflows for PLCs redomiciled in Ireland over the period. The latest available data shows that the current account surplus has risen even further, equivalent to 6.3 per cent of annual GDP for the year ending September 2013. Unlike the 2010-2012 period, the impact of redomiciled PLCs does not appear to have been significant in 2013. A fall in profit repatriation by foreign multi-nationals operating in Ireland in recent quarters, as well as a reduction in interest payments on debts of Irish residents held by foreign counterparts were the main components explaining developments in the first three quarters of 2013.

Given the scale of factor income flows, the timing of which are highly uncertain, small changes - either positive or negative - in outflows or inflows could have a significant impact on balance of payments projections in this *Bulletin*. However, even when the impact of redomiciled profit flows on the current account is removed, developments on the trade side since 2008 have moved the current account towards a surplus position. Our projections for exports and imports imply that the current account will remain in growing surplus over the period of the forecasts.

Table 4: Industry and Manufacturing Output, Annual Percentage Change

	Modern	Traditional	Manufacturing	Total Industry
2010	10.7	2.5	8.3	7.7
2011	-0.2	0.3	0.4	0.0
2012	-0.2	-3.3	-1.0	-1.3
2013e	-1.5	0.4	-1.0	-1.1
2014f	-0.5	0.3	-0.4	-0.6
2015f	0.8	0.2	0.6	0.5
Average 2010-2012	3.4	-0.2	2.6	2.1

Note: Industrial production indices are produced by the CSO and report output volumes excluding the effect of price changes. To remove the impact of prices Wholesale Price Indices (WPIs) are used as deflators. These WPIs were updated in June 2010 and have resulted in revisions to the series back to 2006. Overall these changes served to dampen output growth relative to what was published in Bulletins prior to Q4 2010 (particularly relating to the Modern sector).

Supply

Industry and Services Output

Production in the manufacturing sector has been growing at a significantly positive rate over the last 3 months of 2013, averaging 8.7 per cent per annum between September and November. While this represents a marked improvement on the sluggish growth recorded for the first three quarters of last year, it should be noted that volatility in Irish industrial production data on a monthly basis is not uncommon⁴.

Since industrial production data can be so volatile, it is useful to look at other sources of data to get a wider perspective. Data from the National Accounts for the third quarter of 2013, which are not directly comparable to the data on industrial output, also show a positive performance for the industrial sector. In addition evidence from Investec Manufacturing PMI Index to end-December augers well for the manufacturing sector.

Relative to the forecasts published in the previous *Bulletin* there has been no substantial revisions either overall or at the component level to the industrial output outlook for 2014. For 2013, as a whole, taking into account all of the latest available data, industrial output is projected to have declined by 1.1 per cent per annum. Industrial production is projected

Chart 3: Volume of Industrial Production



Source: CSO.

to decline 0.6 per cent in 2014 with a marginal increase of 0.5 per cent forecast for 2015.

In relation to services, third quarter data from the Quarterly National Accounts reveals that the output of Other Services (including rent) increased 3 per cent in the third quarter of 2013 relative to the same period last year. This outcome is consistent with recent evidence from

⁴ Output growth on a monthly basis in the manufacturing sector averaged 13.0 per cent in November last year compared to -6.2 per cent in October.

⁵ The annual average growth in chemicals and chemicals products for November 2013 was approximately 51.6 per cent.

Table 5: Summary of Agricultural Output and Income 2013^e, 2014^f, 2015^f

	2013 ^e		% change in		2014 ^f		% change in		2015 ^f
	€ million	Value	Volume	Price	€ million	Value	Volume	Price	€ million
Goods Output at Producer Prices ^a	7,102	5.7	2.5	3.1	7,507	6.3	2.6	3.5	7,976
Intermediate Consumption	5,494	2.7	2.0	0.7	5,645	2.0	1.9	0.1	5,757
Net Subsidies plus Services Output less Expenses	1,500	-2.0			1,470	-1.5			1,448
Operating Surplus	2,286	3.0			2,355	3.5			2,437

a Including the value of stock changes.

the latest Investec Services PMI index, which indicates that the services sector is continuing to show positive signs of momentum, with activity increasing in line with higher new orders both domestically and abroad.

Agricultural Output

Average agricultural income is estimated to have increased by 2 per cent per annum in 2013. While this represents an improvement from the decline recorded in 2012, it remains significantly below the strong rise in nominal incomes registered in 2010 and 2011 respectively. Agricultural income was negatively affected by the late spring of 2013 which resulted in low output volumes of 0.2 per cent per annum for the year. In addition, a decline in net profit coupled with the fall in the value of net subsidies resulted in a reduced operating surplus in 2013.

The latest available QNA data on the broad agricultural, fishing and forestry sector (not directly comparable to figures in Table 5) provide further evidence of the sluggish outturn for 2013. In terms of volume of output, a deceleration in the order of -0.1 per cent was registered over the first three quarters of the year, when compared with the same period of 2012.

The Labour Market

The recovery in the labour market strengthened during the third quarter of 2013

according to the results of the latest Quarterly National Household Survey (QNHS). On an annual basis, the pace of employment growth quickened to 3.2 per cent, unemployment fell and, for the second consecutive quarter and only the second time in 5 years, the labour force grew in size.

The trough in the current employment cycle was reached in Q3 2012 when employment fell to 1.83 million, down 326,000 from peak. Since then there have been four consecutive quarterly increases in employment with the result that by Q3 2013, the economy had recouped 58,000 jobs. This amounts to around 18 per cent of the total number of jobs lost during the crisis and leaves overall employment at late 2004 levels. When adjusted for seasonal factors, the unemployment rate declined in the third quarter of 2013 to 12.8 per cent, the first time the unemployment rate has fallen below 13 per cent since autumn 2009. The most recent *Live Register* figures provide evidence of a continued improvement in labour market conditions in the fourth quarter. The standardised unemployment rate declined to 12.4 per cent in December 2013, the eighteenth consecutive month of falling live register claimants.

In late 2012 and the first quarter of 2013, the rise in employment consisted mostly of an increase in part-time work. Recent quarters have seen a reversal of this trend, with full time work now accounting for the bulk of the increase in overall employment.

Table 6: Employment, Labour Force and Unemployment 2012, 2013^e, 2014^f and 2015^f

(annual average '000)	2012	2013 ^e	2014 ^f	2015 ^f
Agriculture	86	107	112	113
Industry (including construction)	336	344	351	361
Services	1417	1425	1452	1479
Total Employment	1838	1876	1914	1953
Unemployment	315	286	259	242
Labour Force	2154	2162	2173	2195
Unemployment Rate (%)	14.6	13.2	11.9	11.0

Note: Figures may not sum due to rounding.

Turning to sectoral developments, the largest annual gains in employment were recorded in agriculture, accommodation and food services and professional, technical and scientific activities. Although the CSO urge caution in interpreting the trends in agricultural employment, the robustness of the figure for overall employment is underpinned by the fact that this is determined prior to the allocation of sectoral employment.

Driven by a rise in the labour force participation rate, the labour force expanded again in Q3, only the second such increase since 2008. Looking in more detail at the composition of the labour force change, in the year to the third quarter of 2013 it is estimated that the negative demographic effect (the change in the working age population) lead to a decrease in the labour force of about 15,000 persons. This is suggestive of net outward migration and is concentrated among the younger age cohorts. The labour force participation rate increased from 60.2 per cent to 60.7 per cent in the year to Q3 2013. This positive participation effect added 31,300 to the size of the labour force over the year which offset the negative demographic effect resulting in an overall increase in the size of the labour force.

There are a number of other notable developments evident in the QNHS data. The labour market experiences of males and females have differed over recent quarters with males accounting for almost three-quarters of the overall increase in employment in the year to Q3. Having fallen by 4 percentage

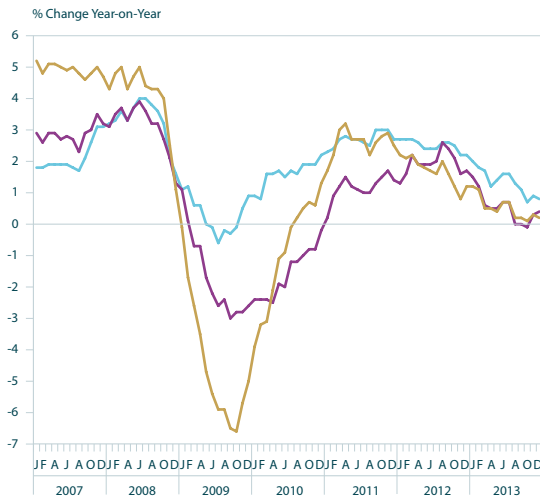
points from peak, the participation rate has increased for two consecutive quarters to 60.7 per cent in Q3. The largest increases were recorded in the older age cohorts. Lastly, the unemployment rate for 15-24 year olds (youth unemployment rate) decreased from 31.1 per cent to 26.5 per cent in the year to Q3.

The projections for the labour market in this *Bulletin* imply a better outlook for the labour market than previously expected. The 2013 employment growth forecast has been revised up by one percentage point from the October forecast to 2.1 per cent and there is an upward revision to the projection for 2014. This reflects a combination of the strong outturn in the first nine months of 2013 and the improved prospects for domestic demand growth contained in this *Bulletin*. The improving labour market situation should be reflected in reductions in the unemployment rate over the projection horizon. As noted in previous *Bulletins*, further improvements in competitiveness as well as the speedy implementation of appropriate activation measures are important in ensuring the largest possible reduction in unemployment from a recovery in economic growth.

Pay

Despite the strong growth in employment recorded during the course of 2013, there is little evidence of any significant upward pay pressures in the economy. On the contrary, reductions in hourly pay, which were rare even when employment losses were greatest

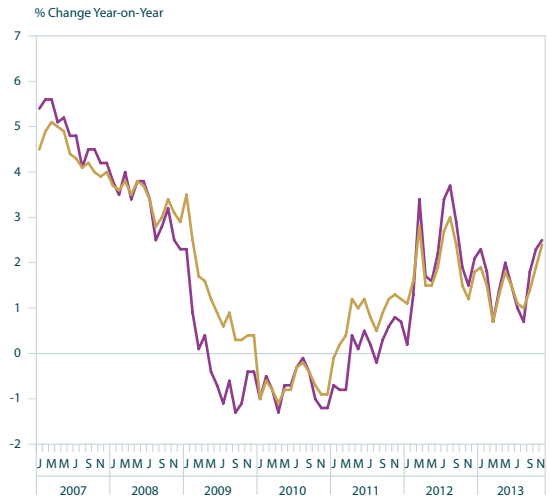
Chart 4: Consumer Prices



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

Source: CSO.

Chart 5: Services Sector Inflation



— HICP Services (Overall) — HICP Core Services

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

Source: CSO.

during 2010 and 2011, have recently become a feature of the data. The National Income and Expenditure accounts (NIE) indicated a small rise in compensation of employees in 2012. Quarterly data from Eurostat suggest an easing of pay pressures in the first half of 2013 with nominal compensation estimated to have declined by 0.8 per cent in the six months to June compared to the same period in 2012.

Data from the CSO's Earnings, Hours and Employment Costs Survey (EHECS) provides further evidence of wage reductions in 2013. On a quarterly basis, economy-wide wages declined by 2.4 per cent in Q3. Comparing the first nine months of 2013 to the same period of 2012, weekly earnings are down by 0.9 per cent, consistent with the trend in compensation from the National Accounts.

A decomposition of the Q3 figure for whole-economy average weekly earnings reveals that it reflected decreases in both hours worked and hourly pay. The decline in private sector wages in Q3 was only the second such annual fall in earnings since Q1 2011. Overall hourly earnings in the private sector have been broadly flat since the economy went into

decline in 2008. Public sector hourly earnings fell during 2010 due to budgetary measures and again in Q3 reflecting the impact of the Haddington Road pay agreement. Across the economic sectors, average weekly earnings decreased in 9 of the 13 sectors in the year to Q3 2013. In the four years to Q3 2013, average hourly earnings across individual sectors show changes ranging between -10 per cent for the *Education* sector and +12 per cent for *Information and communication*.

Combining the projections for employment and pay along with the realised outturn for the first nine months of the year, economy-wide compensation per employee probably registered a small decline in 2013. A continuation of the recent trend of increasing employment and gradually improving labour market conditions should support positive wage growth in the private sector, 2014. However, the continuing high level of slack in the labour market along with pay restraint in the public sector is expected to keep economy-wide wage inflation pressures well anchored from 2015.

Table 7: Inflation Measures – Annual Averages, Per Cent

Measure	HICP	HICP excluding Energy	Services ^a	Goods ^a	CPI
2010	-1.6	-2.7	-0.7	-2.4	-1.0
2011	1.2	0.0	0.8	1.5	2.6
2012	1.9	0.9	1.9	1.9	1.7
2013 ^a	0.5	0.6	1.6	-0.4	0.5
2014 ^f	0.4	0.6	1.7	-0.8	0.3
2015 ^f	1.0	1.3	1.8	0.3	0.9

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

Inflation

Over the course of 2013, inflation as measured by the HICP has significantly moderated compared to 2012. Based on data up to December, it is estimated to have averaged only 0.5 per cent per annum in 2013 whereas it has averaged 1.9 per cent per annum in 2012. The weaker inflation recorded for 2013 was driven by weaker underlying inflation pressures and weaker energy inflation. Indeed, HICP excluding energy, which is a measure of underlying inflation pressures, decreased from 0.9 per cent in 2012 to 0.6 per cent in 2013. The energy component of HICP which had increased on average by 9.4 per cent in 2012, is estimated to have decreased by 0.4 per cent in 2013, as oil prices in euro terms fell over the course of 2013.

For this year and next, inflationary pressures in Ireland are expected to remain muted.

HICP inflation is projected to average 0.4 per cent per annum and 1 per cent per annum in 2014 and 2015 respectively, while CPI inflation is expected to average 0.3 and 0.9 per cent per annum in 2014 and 2015 respectively. The downward revision of the price outlook for the current year compared to the previous *Bulletin* is mainly driven by weaker expected outside generated inflation stemming from weaker commodity prices in euro terms.

Excluding energy prices, core inflation is expected to average 0.6 per cent per annum in 2014 and 1.3 per cent per annum in 2015.

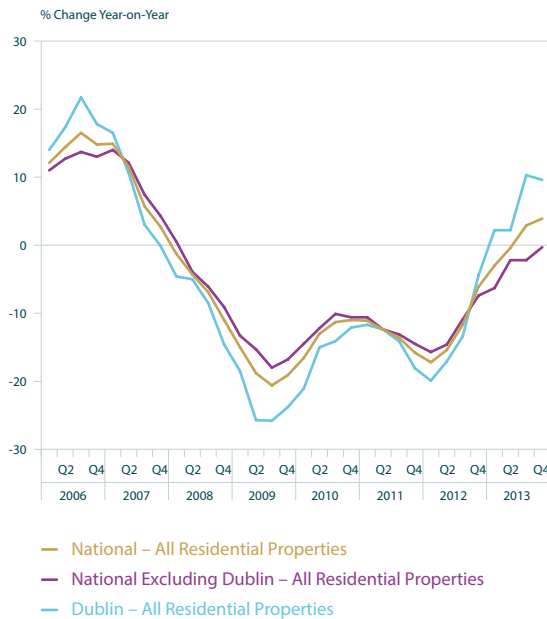
Domestically generated inflation, as proxied by services inflation, is expected to remain fairly stable as the domestic economy recovers. Over the forecast horizon it is anticipated to average 1.6 and 1.8 per cent per annum respectively in 2014 and 2015.

Property Prices

According to the latest available CSO residential property price index (RPPI), the upward trend in prices continued at a national level in November 2013, with a year-on-year increase of 5.6 per cent. This was the sixth consecutive monthly increase in the index at a national level. Nevertheless, the divergent performance of the residential property market by geographic location continued. While prices in Dublin rose, with a year-on-year increase of 13.8 per cent, residential property prices outside of Dublin continued to decline, albeit at a somewhat modest rate of 0.6 per cent. The decoupling of price developments in Dublin and elsewhere is held to reflect stronger demand within the capital and more limited supply. Market expectations are that these conditions will continue to exert upward pressure on prices in Dublin. Price declines outside the capital continue to decelerate on a year-on-year basis and point to a potential bottoming out, although considerable variation exists between regions.

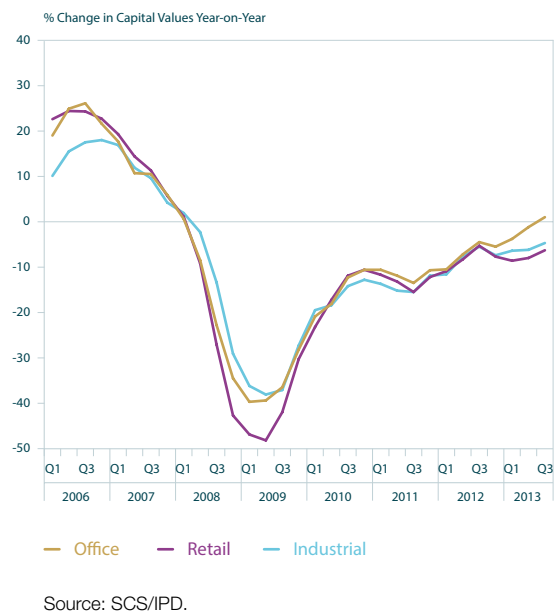
As regards commercial property prices, there have been some further signs of stabilisation, as evidenced by a small quarter-on-quarter increase in the Society of Chartered Surveyors/

Chart 6: Residential Property Price Indices



Source: CSO.

Chart 7: SCS/IPD Irish Commercial Property Index



Source: SCS/IPD.

Investment Property Databank’s commercial property index for the third quarter of 2013. This rise, however, conceals contrasting developments by economic activity, with capital growth in the office sector more than offsetting declines in industrial and retail.

Competitiveness

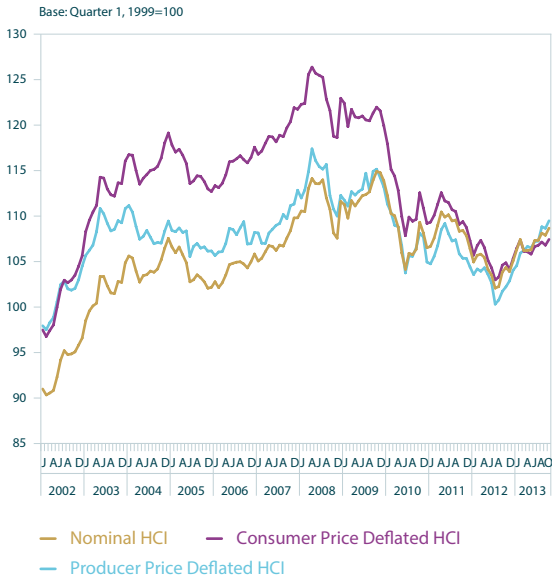
Exchange Rate Developments

The euro appreciated relative to the dollar throughout much of the second half of 2013 – by approximately 6 per cent from July 2013 to January 2014, whilst remaining relatively stable against sterling. This is reflected in Chart 8 as an increase in the Harmonised Competitiveness Index (HCI), which has been on an upward trend since the latter half of 2012 – an increase in the index indicates a reduction in competitiveness. This represents only a slight reversal of competitiveness improvements achieved in the 2009 – 2011 period. According to the HCI, the most recent available competitive position is similar to that pertaining in 2002.

Productivity and Cost Competitiveness

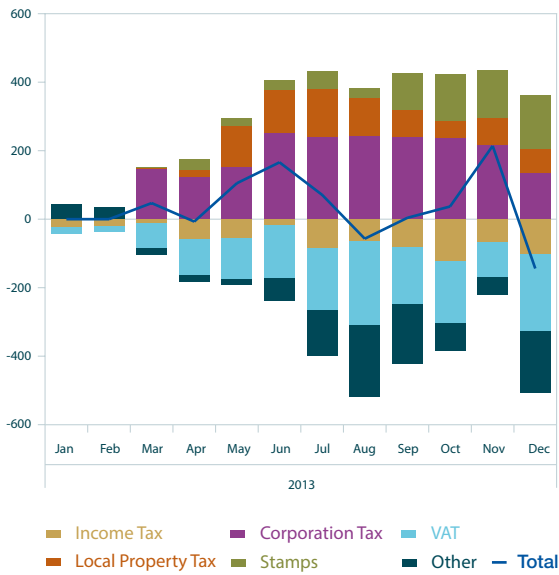
The substantial improvements in productivity and unit labour costs posted in the aftermath of the crisis, largely in the 2009 to 2011 period, are unlikely to be a feature of the economy in the years ahead as most of the adjustment in employment (mainly in the private sector) and salaries (mainly in the public sector) has already occurred. Chart 9 illustrates the evolution of hourly earnings in manufacturing relative to our main trading partners, pointing to a closing of the relative wage growth gap in 2012. Following productivity growth of 0.7 per cent in 2012, and in light of the overall economic and labour market outlook set out above, average annual productivity is estimated to have declined by 1.6 per cent in 2013, before increasing by 0.2 and 1.1 per cent in 2014 and 2015, respectively. The fall in productivity in 2013 comes on the back of a positive increase in employment that is not reflected in a corresponding increase in output. In the wake of an increase in absolute unit labour costs of 1.4 per cent in 2013, absolute unit labour costs are projected to increase by 0.3 and 0.2 per cent this year and next, respectively.

Chart 8: Harmonised Competitiveness Indicators



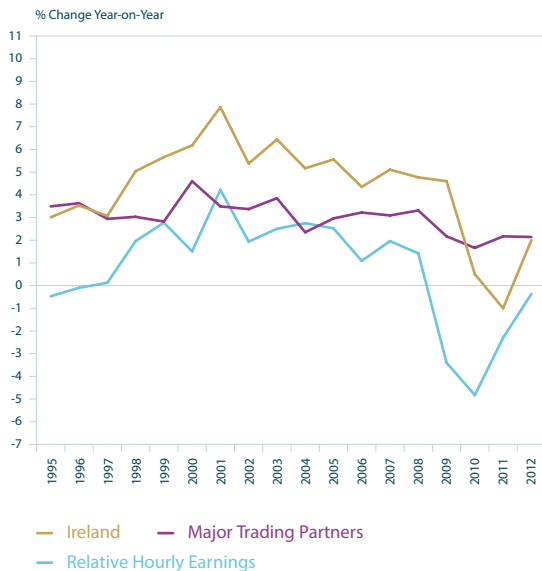
Source: Central Bank of Ireland and ECB.

Chart 10: Divergence of Tax Heads from Profile



Source: Department of Finance.

Chart 9: Hourly Earnings in Manufacturing (in Local Currency)



Source: Central Bank of Ireland calculations.

According to European Commission projections, labour cost competitiveness in Ireland relative to the euro area, following an increase in 2013, is set to improve this year and next.

While competitiveness in the manufacturing sector has been a critical factor in Ireland's competitiveness in the past, a broader sense of competitiveness is now more relevant – particularly one that encompasses the characteristics of the increasingly important services sectors. According to the CSO's latest experimental Services Producer Prices (Q2 2013), which covers a range of business-to-business services costs, the services prices index, following a downward trend in 2008 to 2011, registered an increase of 2 per cent in 2012 and an increase of 1.1 per cent in the year to the second quarter. Separately, while the rate of overall goods inflation in Ireland at present is below that of many of our competitors, the level of prices is coming from a high base. On-

going work of the National Competitiveness Council (NCC) highlights areas of concern in regard to our competitiveness and Forfás published its report on Ireland's Competitive Performance for 2013, highlighting a number of areas of concern. The NCC stress the need for improvement in infrastructure and broadband in particular, and in planning processes in relation to property. The loss of skills arising from long term unemployment and emigration were cited as a concern.

The Public Finances

Overview

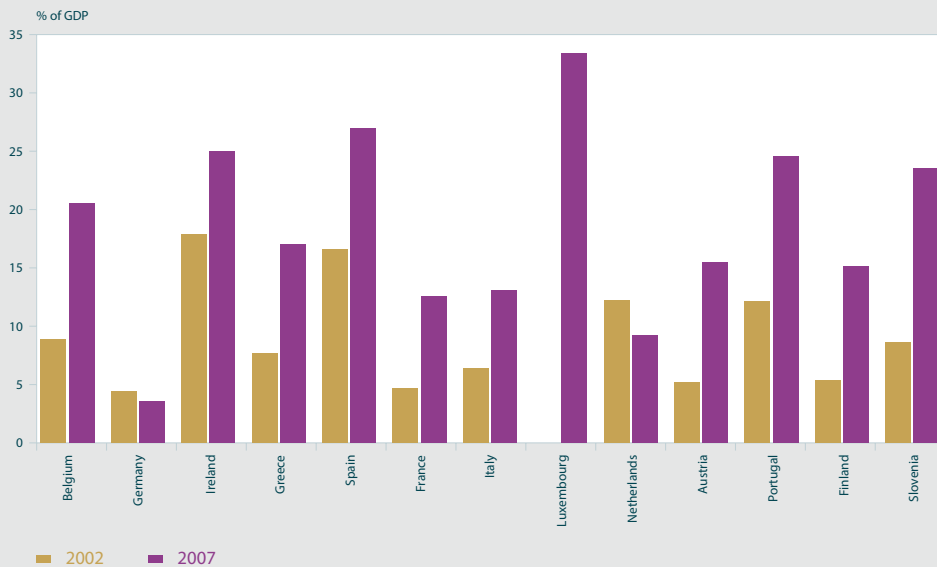
The public finances continued to improve last year, with the quarterly targets set under the Programme achieved once again. The latest fiscal data reveal that the Exchequer deficit outturn was largely in line with expectations at €11.5 billion in 2013, a decline of €3.4 billion from the preceding year. This suggests that the

Box B: Macroeconomic Imbalance Procedure by Rónán Hickey⁶

Introduction

Large macroeconomic imbalances, both internal and external, developed in many EU countries in the first half of the 2000s. Private credit flows increased significantly in much of the Euro Area 13 (EA13) between 2002 and 2007, when half of the region was experiencing flows of greater than 20 per cent of GDP (see Box B Figure 1). Current account developments in individual countries widened over the same period, with the average deficit doubling to 7 per cent of GDP (see Box B Figure 2). The abrupt unwinding of these macroeconomic imbalances was a key factor behind the financial crisis and continues to weigh on the pace of economic recovery today. To prevent similar developments from occurring again, the revised European economic governance framework introduced the Macroeconomic Imbalance Procedure (MIP). This Box takes a closer look at the MIP, which was introduced in December 2011 and is currently on its third cycle.

Box B Fig 1: Private sector credit flows in EA13, 2002 and 2007



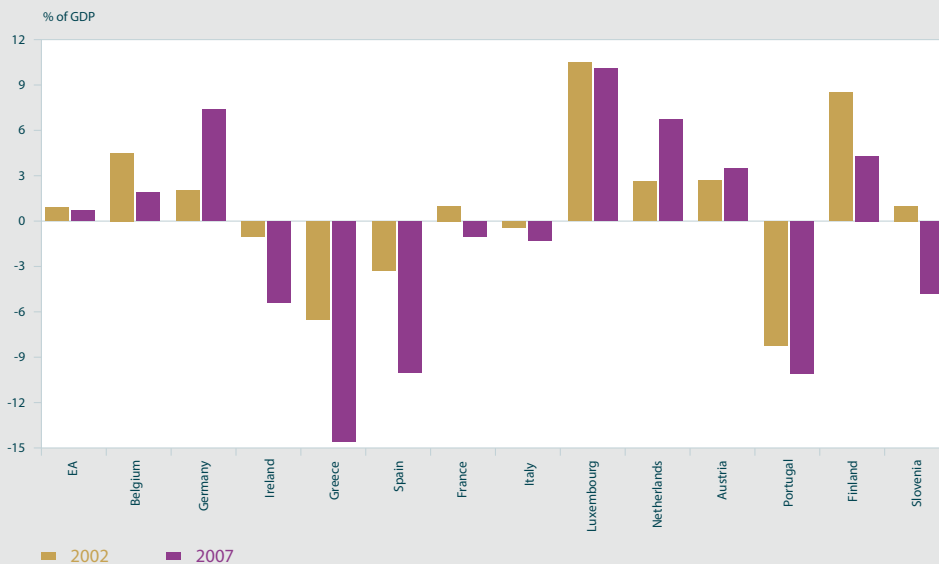
Source: Eurostat.

6 Irish Economic Analysis Division

7 Data for Luxembourg in 2002 is not available. Source for data is Eurostat.

Box B: Macroeconomic Imbalance Procedure by Rónán Hickey

Box B Fig 2: Current Account positions in EA13, 2002 and 2007



Source: Eurostat.

Alert Mechanism Report

The first step in the procedure is the publication of the Alert Mechanism Report (AMR) by the Commission, which identifies countries where further analysis is required to determine whether imbalances exist or there is the risk of them emerging. Countries are assessed using a scoreboard of eleven economic indicators⁹, each of which has a threshold that should not be breached. The Commission has stressed that conclusions are not drawn from a mechanical reading of the scoreboard. The number, severity and combination of breaches, combined with more general economic judgement and previous MIP performance all play a role in determining whether more extensive analysis is necessary. The most recent Report, published in November 2013, identified 16 Member States¹⁰ where further analysis was warranted. Countries that are involved in economic adjustment programmes are not assessed in the AMR given they are already under enhanced surveillance. As a result Ireland has yet to be assessed under the MIP. Given that Ireland exited its programme shortly after the Report's publication, however, the Commission have stated that an assessment will happen 'shortly', presumably prior to the second stage of the Procedure – the In-Depth Reviews.

⁸ Source for data is Eurostat.

⁹ The full list of indicators is (1) 3-year average of current account as % of GDP; (2) net international investment position as % of GDP; (3) % change in real effective exchange rate over 3 years; (4) % change in export market share over 5 years; (5) % change in nominal unit labour costs over 3 years; (6) % annual change in house prices; (7) private sector credit flow as % of GDP; (8) private sector debt as % of GDP; (9) general government debt as % of GDP; (10) 3 year average unemployment rate; (11) % annual change in total financial sector liabilities.

¹⁰ These countries were Belgium, Bulgaria, Croatia, Denmark, Finland, France, Germany, Hungary, Italy, Luxembourg, Malta, the Netherlands, Slovenia, Spain, Sweden and the UK.

Box B: Macroeconomic Imbalance Procedure*by Rónán Hickey*In-Depth Reviews

The second step of the MIP involves the Commission undertaking In-Depth Reviews (IDRs) on the countries identified in the AMR. An IDR can result in one of three outcomes:

- The conclusion that no imbalances or risk of imbalances exist. In this case there is no further action taken;
- The conclusion that macroeconomic imbalances exist or could arise – imbalances that are adversely affecting, or have the potential to adversely affect, the proper functioning of a Member States' economy; the economic and monetary union (EMU); or the Union as a whole. If this occurs the Commission provides guidance on appropriate policy responses, which are considered by the Council and form part of the Council's country specific recommendations¹¹. A country is expected to take action to rectify imbalances.
- The conclusion that excessive macroeconomic imbalances exist – imbalances which jeopardise, or risk jeopardising, the proper functioning of economic and monetary union. In this case the Commission can recommend that the country is placed in an Excessive Imbalance Procedure, which is outlined below.

In the coming months the Commission will produce IDRs for the 16 Member States identified in November's AMR. The most recent IDRs, completed in April 2013, concluded that varying degrees of imbalances existed in 13 countries. Imbalances deserving monitoring and policy action were identified in Belgium, Bulgaria, Denmark, Finland, Malta, the Netherlands, Sweden and the UK; imbalances requiring monitoring and decisive policy action were identified in France, Hungary and Italy; while excessive imbalances were seen to exist in Slovenia and Spain.

The Corrective Arm: The Excessive Imbalance Procedure

The MIP has a similar structure to the Stability and Growth Pact (SGP) in that it features two arms. The AMR and IDRs are similar to the preventative arm in the SGP, aiming to identify imbalances - or risks of imbalances - before they become severe, and provide policy recommendations of how to deal with them. The Excessive Imbalance Procedure (EIP), meanwhile, represents the corrective arm, aiming to ensure that significant imbalances are dealt with before they become entrenched. If a Member State is placed in an EIP it is obliged to submit a Corrective Action Plan incorporating a timetable for implementing corrective measures. There will be increased surveillance and monitoring of the country involved, with regular progress reports produced.

In the event of sustained failure to take corrective action, a two-step procedure ensues. The first of these involves the payment of an interest-bearing deposit together with the recommendation to take corrective action. After a second failure to comply, this deposit is converted into an annual fine which will continue to be paid until the Council establishes that corrective action has been taken. Both the deposits and the fines will be 0.1 per cent of GDP in the preceding year to ensure equal treatment amongst Member States. Sanctions can also be introduced for repeated failure to draw up a Corrective Action Plan. To ensure that they become the rule and not the exception, the decision to enforce sanctions uses reverse qualified majority voting making it significantly more difficult to block the process. When the Council considers that a Member State is no longer affected by an excessive imbalance – a consideration that must be based on a comprehensive analysis by the Commission – the EIP should be closed.

¹¹ See Box C: The European Semester, Central Bank Quarterly Bulletin Q4, October 2013.

Table 8: 2013 Exchequer returns

	2012 €m	2013 €m	Annual Change €m
Current Expenditure			
– Voted ¹³	41,461	40,007	
– Non-Voted ¹⁴	8,103	11,106	
Total	49,564	51,113	3.1%
Current Revenue			
– Tax revenue	36,646	37,806	
– Non-tax revenue	2,819	2,676	
Total	39,466	40,482	2.6%
Current Budget Balance	-10,098	-10,631	
Capital Budget Balance	-4,793	866	
Exchequer Balance	-14,891	-11,497	
General Government Balance (% GDP)¹⁵	-8.2	-7.3	
Source and Application of Funds			
– Total Borrowing/Repayments	-24,110	-36,281	
– Promissory Note Issued to IBRC ¹⁶	3,060	0	
– IBRC Liquidation	0	25,034	
– Total Increase in Exchequer Deposits	6,158	-250	
Exchequer Balance	-14,891	-11,497	

¹³ Government current expenditure voted on by the Dail in the areas of Social Welfare, Health, etc.

¹⁴ Includes items such as debt servicing and EU Budget contribution.

¹⁵ The 2013 General Government Balance is the Department of Finance's Budget 2014 estimate.

¹⁶ The promissory note transaction is not included in non-voted expenditure as no cash was issued arising from the transaction. The bond issued is included in total borrowing / repayments.

annual general government deficit target was achieved once again. Looking ahead, there is still significant work to be done before the public finances are returned to a sustainable level. In Budget 2014, the Government introduced €2.5 billion in fiscal consolidation measures, and a further €600 million in additional resources and savings, resulting in a total adjustment package of €3.1 billion. It appears further significant adjustment will be required in next year's Budget to ensure that the deficit falls below 3 per cent of GDP in 2015.

Exchequer Returns

End-year exchequer returns data revealed a deficit of €11.5 billion last year, a reduction of €3.4 billion from the 2012 figure (see Table 8), albeit slightly above the Budget 2014 forecast of €11.3 billion¹². The improvement in annual

terms primarily reflected developments on the revenue side, as total revenues increased 6.3 per cent year-on-year.

Exceptional capital revenues, reflecting the sale of contingent convertible capital notes in Bank of Ireland and the sale of Irish Life, and to a somewhat lesser extent, higher tax receipts were the main drivers of higher revenues in 2013. Lower total expenditure also supported the improved Exchequer position, with government spending in 2013 decreasing by 0.1 per cent year-on-year.

Taking a closer look at revenue developments, tax receipts increased to €37.8 billion during the year, an annual increase of 3.2 per cent. This increase was driven primarily by higher income tax and VAT revenues, while capital gains taxes and stamp duties were lower year-

¹² The exchequer deficit was originally expected to reach €15.5 billion in 2013 according to estimates published in Budget 2013. A number of exceptional factors such as the liquidation of IBRC, the sale of contingent convertible capital notes in Bank of Ireland and the sale of Irish Life resulted in an improvement of more than €4.3 billion. These factors were known and were incorporated into estimates at the time of Budget 2014.

on-year. The performance of tax revenues in the second half of last year was largely in line with the expected profile¹⁷, with monthly tax receipts slightly stronger in November than expected, but weaker in December than profiled. At year-end, total tax revenues were €144 million, or 0.4 per cent, lower than originally expected.

On the spending side, total expenditure in net terms was around €440 million lower relative to the same period last year, reflecting a pronounced decline in voted expenditure, which more than outweighed an increase in non-voted expenditure. In more detail, total net voted expenditure was €43.1 billion last year, a reduction of €1.9 billion, or 4.2 per cent, from 2012. The savings were widespread, with 14 out of 16 Government Departments achieving year-on-year savings in 2013. At the aggregate level across all Departments, lower annual spending was achieved in both current and capital expenditure, with the latter decreasing by a substantial 12.2 per cent year-on-year and the former decreasing by 3.5 per cent. Total net voted expenditure as a whole came in €321 million, or 0.7 per cent, below its April profile, with both the current and capital components also coming in below target.

Non-voted expenditure, by comparison, was €13.1 billion in 2013, €1.4 billion higher than in 2012, and has partly offset the savings achieved in voted expenditure. Debt servicing costs for 2013 were €8.1 billion, €1.6 billion higher than the year before, reflecting the increase in the stock of the National Debt. Other non-voted current expenditure stood at €3.0 billion in 2013 compared to €1.6 billion in 2012, with the increase largely driven by €1 billion of guarantee payments following the liquidation of IBRC, and an increased contribution to the EU Budget. Meanwhile, non-voted capital expenditure actually declined in 2013 to €2 billion, down €1.6 billion year-on-year, primarily due to the base effect of the State's successful investment in Irish Life in

2012. Taking all of these factors into account, non-voted expenditure declined by €1.4 billion or 12.3 per cent last year.

General Government Developments

In terms of the broader general government balance, the Central Statistics Office submitted updated Maastricht returns data to Eurostat at end-September¹⁸ which revised downwards the estimated deficit for the years 2009 – 2011, but revised upwards the estimate for 2012 to 8.2 per cent of GDP. The underlying general government deficit – which excludes the costs of supporting the banking sector and is the relevant measure for the EU-IMF Financial Assistance Programme – was estimated to have been 8.2 per cent of GDP in 2012. Turning to last year, meanwhile, Budget 2014 had estimated an underlying general government deficit of 7.3 per cent of GDP for the year as a whole, comfortably inside the ECOFIN deficit target of 7.5 per cent of GDP. The year-end exchequer data would appear to confirm that the deficit target will be achieved once again this year. The first formal estimate of the 2013 outturn will be published in the context of the end-March 2014 Maastricht returns.

Exchequer Financing

The exchequer returns data show that the deficit was financed by net government borrowing of €36.3 billion last year. Taking into account the €25 billion of Irish Government bonds issued to the Central Bank on liquidation of IBRC, this resulted in a €0.3 billion decrease in Exchequer cash balances over the period (see Table 8). The conclusion of the twelfth and final review of Ireland's performance under the EU-IMF supported Programme in November 2013 paved the way for the disbursement of the remaining €1.4 billion of Programme funds. The total drawdown in Programme assistance in 2013 was €11.1 billion (€5.7 billion from the EU, €3.5 billion from the IMF, and €1.9 billion from Ireland's other EU bilateral partners). As noted in the detailed Chapter on the EU-IMF Financial

¹⁷ Tax revenue, non-tax revenue, capital resources, non-voted expenditure and interest costs are as per Budget 2013 profiles. Voted expenditure and appropriation-in-aid profiles are consistent with those published in the Revised Estimates for Public Services, published on 17 April 2013.

¹⁸ Maastricht returns are submitted by each Member State to Eurostat twice yearly, at end-March and end-September, for the application of the Excessive Deficit Procedure.

Assistance Programme later in this *Bulletin*, the quantitative fiscal targets underpinning the Programme continued to be fully met throughout last year.

Budget 2014

Budget 2014 was delivered to the Dáil on 15 October 2013. The earlier than usual presentation of the budget was due to Ireland moving in line with new EU arrangements under the European Semester. The Government introduced €2.5 billion in fiscal consolidation measures, and a further €600 million in additional resources and savings, resulting in a total adjustment package of €3.1 billion in Budget 2014. The Government are targeting a deficit of 4.8 per cent of GDP this year, which is more ambitious than the ECOFIN deficit limit for 2014 of 5.1 per cent of GDP. With regard to general government debt, the Department of Finance anticipates that the debt to GDP ratio will decline from its end-2013 peak level of 124.1 per cent of GDP to 120 per cent in 2014. It is then expected to continue to gradually decline in the following years, falling to 114.6 per cent of GDP by 2016.

An Timpeallacht Gheilleagrach

Tá Éire tar éis teacht as Clár AE/CAI tráth atá níos mó muiníne ag an margadh san ionchas d'fheidhmíocht eacnamaíoch agus d'ionchais beartais na tíre. Léirítear é sin sa mhéid go bhfuil measúnú an mhargaidh ar acmhainneacht creidmheasa na hÉireann feabhsaithe, rud a chuidíonn leis an Stát agus le bainc intíre rochtain a fháil ar mhaoiniú margaidh ag rátaí níos fabhraí. Bhí athbhunú mhuintín an mhargaidh, go feadh an méid atá ann faoi láthair, ag brath ar chur chun feidhme láidir beartas thar thréimhse an Chláir agus ar na comharthaí atá ag dul i méid go bhfuil na dálaí eacnamaíocha ag feabhsú. Bhí sé rithábhachtach gur cloíodh leis na spriocanna foscacha, rud a laghdaigh an tEasnamh Rialtais Ghinearálta agus ba cheart, dá bhrí sin, go dtiocfaidh an tEasnamh sin faoi bhun 3 faoin gcéad den OTI faoi 2015. Le deireadh Chlár AE/CAI, tá sé rithábhachtach go leanfar de bheith ag cur leis an méid atá bainte amach le blianta beaga anuas chun rochtain leanúnach ar mhaoiniú margaidh ag rátaí fabhracha a áirithiú amach anseo.

Thairis sin, ní foláir dul chun cinn breise a dhéanamh ó thaobh chur chun feidhme beartas thar réimsí éagsúla sula bhféadfaí a mheas go bhfuil Éire tagtha chuici féin as an ngéarchéim. Ar na príomhdhúshláin atá ann i gcónaí, áirítear an gá le comhdhlúthú foscach breise a dhéanamh, fíntacht na mbanc a athbhunú agus aispheabadh an fháis fostaíochta a chothú trí bhíthin feabhsuithe san iomaíochas. Cé go bhfuil neart bainte amach cheana féin, is gá an méid seo a leanas a dhéanamh chun go gcruthófar na dálaí cuí do théarnamh eacnamaíoch inmharthana: laghduithe breise ar leibhéal an fhiachais sa gheilleagar a bhaint amach, idir fhiachas poiblí agus fhiachas príobháideach; an córas baincúireachta a chur ar ais ar bhonn fóna chun go mbeidh sé ábalta tacú leis an ngeilleagar trí iasachtú leordhóthanach; an ráta fostaíochta a tharraingt aníos ón leibhéal íseal ar thit sé chuige le linn na géarchéime. Tá sé bunriachtanach go gcloífear leis na beartais a bhí i bhfeidhm le linn an Chláir chun a áirithiú go sárófar na dúshláin sin.

Maidir leis an airgeadas poiblí, tugann na meastacháin is déanaí le tuiscint gur cheart go dtiocfaidh an tEasnamh Rialtais Ghinearálta do 2013 faoi bhun na sprice faoin Nós Imeachta um Easnamh Iomarcach, eadhon

7.5 faoin gcéad den OTI. Tugann na réamh-mheastacháin le tuiscint gur baineadh buaic-chóimheas easnaimh-OTI amach, ag leibhéal beagáinín ní b'ísle ná mar a measadh roimhe seo. Cé go bhfáiltítear roimh na forbairtí sin, tá na leibhéil easnaimh agus fiachais an-ard i gcónaí agus is gá comhdhlúthú breise a dhéanamh sna blianta atá le teacht chun go mbeidh an fiachas ag imeacht ceann le fána agus chun inmharthanacht a áirithiú. Trí éiginnteacht a laghdú, ba cheart go gcuirfí le téarnamh níos gasta agus níos fadréimhsí agus go neartófar muinín na n-iasachtóirí idirnáisiúnta agus go bhfeabhsófar an rochtain ar mhaoiniú margaidh.

Cé go bhfuil feabhas tagtha ar choinníollacha leachtachta agus maoinithe, baineann na príomh-shaincheistanna san earnáil baincúireachta leis an ngá atá le dul chun cinn breise a dhéanamh maidir le hiasachtaí lagaithe a réiteach d'fhonn an córas a chur ar ais ar bhonn fóna marthanach chun go mbeidh sé ábalta tacú leis an téarnamh. I gcomhréir leis an straitéis réitigh agus na spriocanna réitigh do riaráistí morgáiste, leanann an Banc Ceannais de bheith ag ceangal ar na bainc a gcuid oibre a luathú chun a áirithiú go dtabharfaí socruithe factéarmacha inmharthana chun críche. Cé go raibh an dul chun cinn

mall, tá an luas ag géarú agus leanann an Banc Ceannais den obair seo chun a áirithiú go ndéanfaidh na bainc agus aon iasachtaíthe morgáiste a bhfuil riaráistí acu buanréitigh a thabhairt chun críche. Ina theannta sin, tá monatóireacht á déanamh ag an mBanc ar bhearta leanúnacha chun fadhbanna fiachais oidhreachta de chuid gnólachtaí beaga a réiteach.

Níor cheart neamhaird a thabhairt ar an tábhacht a bhaineann le dul chun cinn maidir le hathbhunú iomaíochais a chothabháil. Cé gur chuidigh an fás measartha ar phá agus na laghdúithe ar bhonn costais an gheilleagair le cuid den iomaíochas a cailleadh le linn an bhorrtha a aisghabháil, neartófaí cumas fáis na hÉireann agus thacófaí le tuilleadh fáis ar fhostaíocht trí bhithin feabhsuithe breise ar tháirgiúlacht agus ar iomaíochas.

Chun a áirithiú go bhféadfar an feabhas atá ag teacht chun cinn ar dhálaí eacnamaíocha a choimeád ar bun, is fearr leanúint den dul chun cinn atá á dhéanamh ar shaincheisteanna fíoscacha agus baincúireachta agus táirgiúlacht agus iomaíochas an gheilleagair a fheabhsú. Cé gur cuireadh srian ar fhás OTI sa chéad leath de 2013 de thoradh an tionchar dhiúltaigh ar onnmhairí a bhí ag deirí thréimhsí roinnt paitinní cógaisíochta agus de thoradh na laige i gcomhpháirtithe trádála, tugann raon táscairí le fios gur tháinig méadú ar ghníomhaíocht eacnamaíoch sa dara leath de 2013. Is ábhar dóchais é go dtugann na sonraí is déanaí le fios go bhfuil fás láidir tagtha ar fhostaíocht le bliain anuas. Ar dtús, bhí an téarnamh ar fhostaíocht srianta do phoist pháirtaimseartha ach le ráithí beaga anuas chonacthas fás cothrom ar fhostaíocht lánaimseartha agus is cosúil go bhfuil bonn níos leithne faoin bhfás sin. Ag féachaint romhainn, is dócha go dtacódh sé sin le hioncaim teaghlach agus le muinín tomhaltóirí agus, bunaithe air seo, meastar go mbeidh fás measartha dearfach ar chaiteachas tomhaltóirí in 2014. Tá bunluas tagtha faoin gcaiteachas infheistíochta (cé is moite de thosca aonuaire)

agus meastar go leanfaidh sé sin thar ionchas na réamhaisnéise. Agus an méid seo ar fad á chur san áireamh, tugtar le fios go mbeidh méadú éigin ar an éileamh intíre in 2014, cé gur dócha go mbeidh an méadú sin neamhthoirtéiseach i bhfianaise na mbacainní ar théarnamh atá fós ann. Maidir leis an taobh eachtrach, cé gur dócha go leanfaidh deirí thréimhsí paitinne de thionchar áirithe a bheith acu san earnáil cógaisíochta, meastar go dtacódh éileamh eachtrach feabhsaithe le fás onnmhairí níos láidre i mbliana agus an bhliain seo chugainn.

Ag féachaint do na forbairtí seo go léir, tugtar le tuiscint go raibh táirgeacht beagáinín ní ba laige ann d'fhás OTI anuraidh, ach go bhfuil ionchas níos fearr ann don bhliain seo, ná mar a tuaradh roimhe seo. Toisc go raibh an chéad leath de 2013 lag, meastar gur tháinig fás neamhthoirtéiseach de 0.4 faoin gcéad ar OTI anuraidh. Ar a shon sin, ag féachaint do na comharthaí téarnaimh a bhí ann le déanaí agus agus an feabhas ar an éileamh eachtrach á chur san áireamh, meastar go mbeidh fás 2.1 faoin gcéad ar OTI in 2014. I dtéarmaí OTN, áfach, tá pátrún an fháis thar 2013 agus 2014 níos cothroime. Ó tharla go bhfritháirítear tionchar dheirí thréimhsí paitinne in 2013 le laghdú ar eis-sreabhadh brabúis, táthar ag ceapadh gurb ionann an táirgeacht d'fhás OTN in 2013 agus thart ar 2.0 faoin gcéad agus meastar gurb ionann fás OTN i mbliana agus 2.2 faoin gcéad. In 2015, ar bhonn réamhaisnéisí comhdhearcaidh ó na príomh-institiúidí eacnamaíocha idirnáisiúnta lena meastar go mbeidh téarnamh ar an éileamh eachtrach sa mhéid go bhfillfidh sé ar a threocht fadtréimhseach, agus ar bhonn fáis níos láidre ar an éileamh intíre deiridh, tuarar go dtiocfaidh méadú 3.2 faoin gcéad ar OTI agus méadú 2.5 faoin gcéad ar OTN. Ní mór d'Éirinn leanúint uirthi ar bhóthar an chomhdhlúthaithe agus an athchóirithe atá á thriall aici le roinnt blianta anuas chun a áirithiú go dtacófar le hinmharthanacht an téarnaimh eacnamaíoch atá ag teacht chun cinn anois.

Financing Developments in the Irish Economy

Overview

The normalisation of financial markets in Ireland has continued throughout 2013, with a reduction in the banking sector's reliance on central bank funding, an increase in private-sector deposits, and a return to market-based financing by the State. While there are early signs of progress in addressing mortgage arrears, the level of mortgage arrears outstanding continues to pose significant challenges. Lending to the private sector remains weak, reflecting ongoing deleveraging by both banks and the non-banking sector.

Ireland's exit from the EU/IMF programme at the end of 2013 coincided with improvements in the financing conditions of the Irish Government and domestic credit institutions. Credit institutions' reliance on Eurosystem financing continued to decline during the second half of the year, falling to just under €40 billion by November. At the same time, deposit funding increased by 8.5 per cent in the 12 months to November 2013, despite credit institutions offering lower interest rates. Stability in lending rates coupled with falling deposit rates have also contributed to some widening of net interest margins of credit institutions. The recent issuance of debt securities by credit institutions also reflects greater stabilisation in this funding source, although total amounts outstanding continue to decline. Government financing costs were also lower with the NTMA issuing a ten-year bond at the start of 2014 with a yield of 3.54 per cent. In early-January, yields on ten-year bonds were below 3.3 per cent, the lowest level for eight years.

Despite a more stable funding position, lending by credit institutions to the domestic private sector remains weak. This reflects ongoing deleveraging by credit institutions and the net repayment of debt as households and non-financial corporations (NFCs) continue to repair their balance sheets. Credit to the resident

NFC sector has fallen by 4.9 per cent in the 12 months to November 2013, with the rate of decline increasing in the most recent months. NFCs made net repayments of €4.2 billion of loans to credit institutions in the year to end-November 2013, with entities engaged in wholesale and retail trade, and in hotel and restaurants seeing the most significant reductions in the amount of loans outstanding. Lending to households also continues to fall, both for mortgages and other purposes, although the pace of decline is slowing. The amount of mortgage loans outstanding has fallen by over €6.3 billion during the last three years. Household debt fell by €1.7 billion during the second quarter, to stand at €170.3 billion. This was the lowest level since Q3 2006.

Notwithstanding the decline in debt levels, the level of mortgage arrears outstanding continues to pose significant challenges. However, there were indications in Q3 that the flow of mortgages into early arrears for principal dwelling houses (PDHs) have slowed. The latest data show divergent trends for short-term arrears and those of longer duration. While the number of mortgage accounts in early arrears fell during Q3, the number of PDH mortgages in arrears over 360 days rose to 59,844, representing 7.8 per cent of all PDH mortgages. In addition, over 20,000 buy-to-let

(BTL) mortgages were in arrears of more than 360 days.

Developments in the non-bank financial sector, which is highly influenced by the international environment, were somewhat mixed. Outflows from money market funds (MMFs) continued during 2013, reflecting the low interest-rate environment. By October 2013, the annual growth rate of MMFs was almost minus 30 per cent. Irish financial vehicle corporations (FVCs) also saw a continuation of the contraction in their balance sheet with assets falling by €13.9 billion in Q3. FVC balance sheets have been contracting steadily since Q4 2010. In contrast, investment funds' balance sheets expanded further during Q3 2013, increasing by €36.8 billion to €1,041 billion on the basis of net asset value. Net investor inflows and revaluations, arising primarily from strong global equity markets, contributed almost equally to the increase.

The Government's net financial wealth declined during 2013 by a further €3.4 billion in the second quarter – a decline of €142.6 billion since Q4 2007.

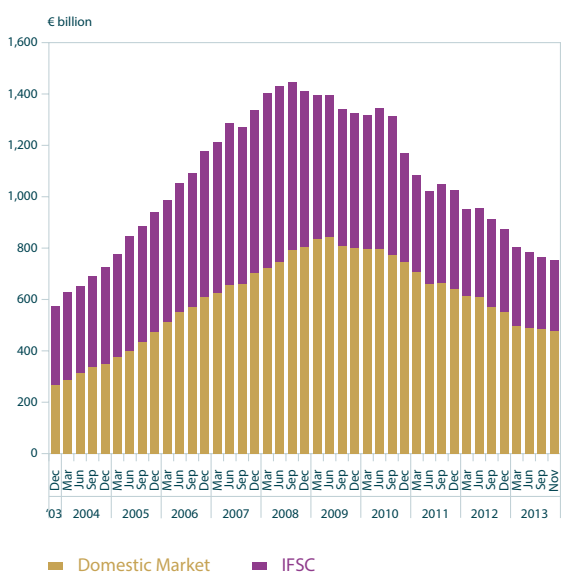
Monetary Financial Institutions

Credit Institutions

Following the trend of recent quarters, the banking system in Ireland has continued to contract. Total assets of credit institutions operating in Ireland were €755 billion at end-November 2013, following a reduction of 15.7 per cent over the previous twelve months. The decline applied to both the domestically-relevant banking system and to IFSC banks, with total assets falling by 16 per cent and 15.3 per cent, respectively, over the twelve months to end-November. These developments reflect the ongoing deleveraging by Irish-owned credit institutions, as well as the wider retrenchment of all banks to their domestic markets.

Throughout 2013 Irish resident credit institutions have experienced a gradual return to a more sustainable funding profile. This is due, in part,

Chart 1: Total Assets of Irish Resident Credit Institutions

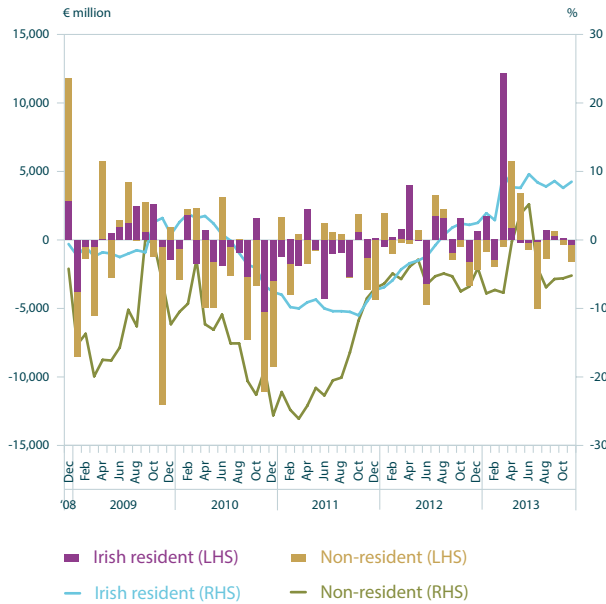


Source: Money and Banking Statistics, Central Bank of Ireland.

to the decline in the overall funding requirements of the banking system as its overall size has contracted. Eurosystem funding of Irish resident credit institutions, which peaked at €138 billion in November 2010, has been falling steadily over the past year, and stood at €39.7 billion at end-November 2013. Domestic market credit institutions' share of Eurosystem refinancing operations was €32.5 billion at this time, reflecting a decline of just over 50 per cent over the previous twelve months. The fall in central bank funding also reflects transactions related to the liquidation of the Irish Bank Resolution Corporation (IBRC), whose liability to the Central Bank of Ireland was replaced by a liability to the National Asset Management Agency (NAMA).

Debt funding continues to decline in total and as a share of resident credit institutions' funding profile; although, signs of stability have been emerging in recent months as market sentiment towards the Irish-owned banks improves. Redemptions during the six months to end-October 2013, totalling €38.4 billion, were just slightly below that recorded during the same period in 2012. Gross issues of monetary financial institutions' debt securities

Chart 2: Monthly Net Flows (LHS) and Annual Rates of Change (RHS) of Private-Sector Deposits in Irish Resident Credit Institutions

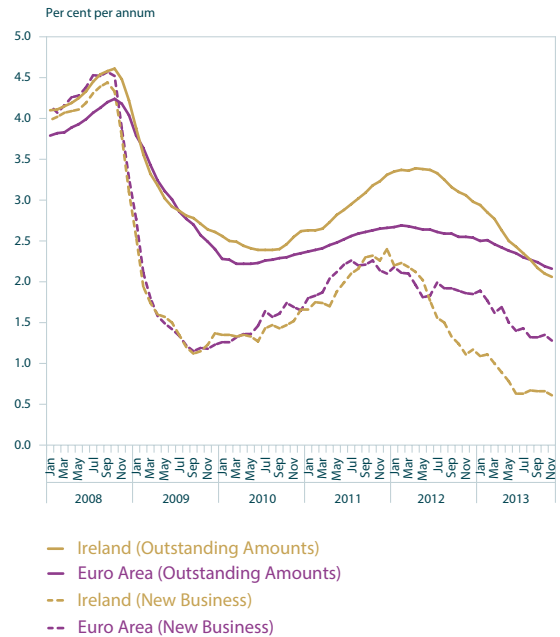


Source: Money and Banking Statistics, Central Bank of Ireland.

over this period amounted to €25.8 billion. The use of Own-Use Bank Bonds by domestic credit institutions as collateral for Eurosystem refinancing operations has now fallen to around €3 billion. The decreased dependence on these instruments for funding purposes is explored in Box A.

Deposit funding continues to increase, with Irish resident private-sector deposits in all resident credit institutions rising by 8.5 per cent in the 12 months to November 2013. The increase in Irish private-sector deposits in 2013 has been strongest for overnight deposits, which rose by 25.4 per cent over the year to end-November 2013. Annual developments in overnight deposits, and by extension, total private-sector deposits, were significantly impacted by transactions related to the liquidation of the IBRC, as outlined above. This position will be unwound as the assets which currently remain on the IBRC balance sheet are transferred. Increases in overnight deposits have also been strong for Irish households and NFCs, which rose by 8.9 per cent and 19.1 per cent, respectively, on an annual basis to end-

Chart 3: Interest Rates on Deposits with Agreed Maturity from Households and NFCs

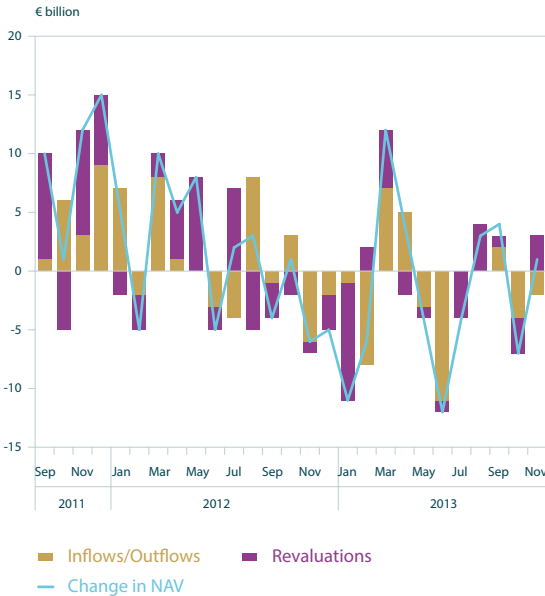


Sources: Central Bank of Ireland and the ECB.

November. Longer-term deposits with agreed maturity over two years also increased, by 6.5 per cent and 2.7 per cent for households and NFCs, respectively, over the same period. Conversely, private-sector deposits from non-residents declined by 5.2 per cent (Chart 2).

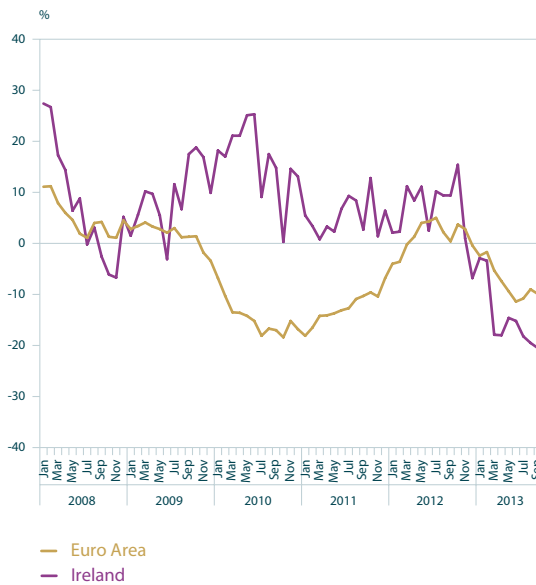
The strengthening in private-sector deposit funding has occurred despite a significant easing in deposit rates. Retail interest rates on outstanding household and NFC deposits with agreed maturity declined by 100 basis points to 2.06 per cent in the year ending November 2013 (Chart 3), falling below the euro area average rate of 2.16 per cent. With regard to new business, the rates being agreed on new household and NFC deposits in Ireland are now some 67 basis points lower than the euro area average. Meanwhile, despite the reduction in the ECB main refinancing rate in May 2013, retail interest rates on new business lending to households and NFCs have not fallen to any great extent. This relative stability in lending rates combined with the lower deposit rates has contributed to some widening of net interest margins of credit institutions in Ireland.

Chart 4: Monthly Change in Money Market Funds' Net Asset Values



Source: Central Bank of Ireland.

Chart 5: Annual Growth Rate of MMF Shares/Units



Source: ECB.

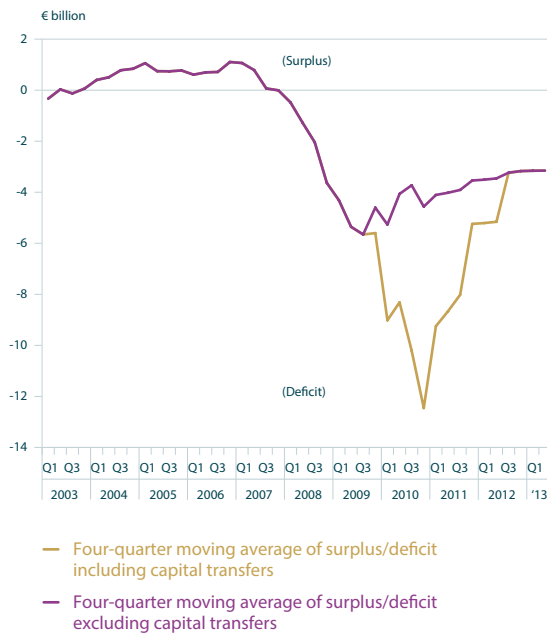
Developments on the assets side of credit institutions' balance sheets are being driven by both the need to adjust their business in a sustainable manner and the wider debt dynamics faced by the Irish non-financial private and public sectors, given their own process of deleveraging. Loans to the Irish private sector declined by 6.1 per cent over the year to end-November 2013, as deleveraging by the household and NFC sectors continued. Despite these reductions, credit to the Irish private sector as a share of total assets of domestic-market credit institutions has risen to 55 per cent, a level not consistently seen since 2003. This comes as retrenchment from foreign markets, particularly for Irish-owned credit institutions, has taken the majority of the impact of the adjustment process. For example, Irish resident credit institutions' holdings of debt securities issued by non-residents have contracted by 14 per cent in the year ending November 2013.

Money Market Funds

The value of Irish resident money market fund (MMF) shares/units stabilised in July to

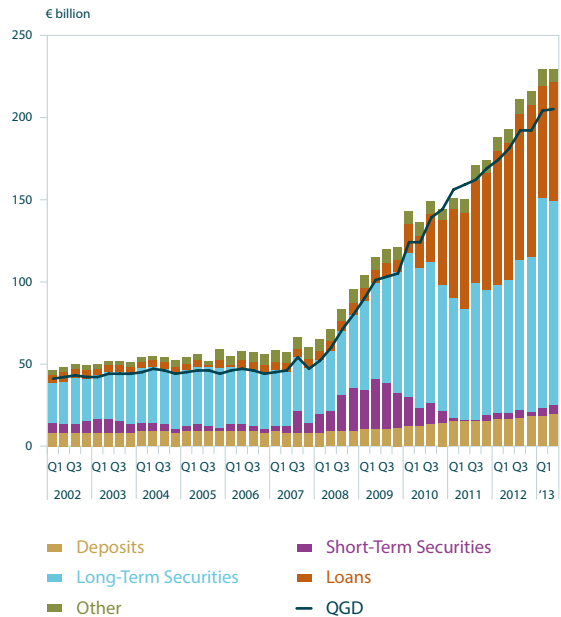
September 2013, but outflows recommenced in October and November. The annual growth rate of MMF shares/units turned negative in December 2012, and by October 2013 had reached almost minus 30 per cent. Over the twelve months to November 2013, investors resident outside the euro area recorded the largest redemptions of shares. To meet these redemptions, MMFs reduced deposits held and holdings of short-term debt securities issued by monetary financial institutions (MFIs), both within and outside the euro area. The net asset value (NAV) of an MMF is also influenced by price and exchange rate changes in assets held. Over the year to November 2013, only five months recorded positive revaluations, highlighting the difficult operating environment for MMFs. Euro area resident MMFs, in aggregate, also recorded sizeable declines in their NAVs over the year to September 2013. MMFs have been operating in an environment of low interest rates which has made it more difficult to generate positive returns, and a search for yield among investors has led to outflows from this asset class.

Chart 6: The Four-Quarter Moving Average of Government's Surplus/Deficit



Source: Quarterly Financial Accounts, Central Bank of Ireland.

Chart 7: Government Liabilities



Sources: Quarterly Financial Accounts, Central Bank of Ireland; and Quarterly Government Debt, Eurostat.

Government

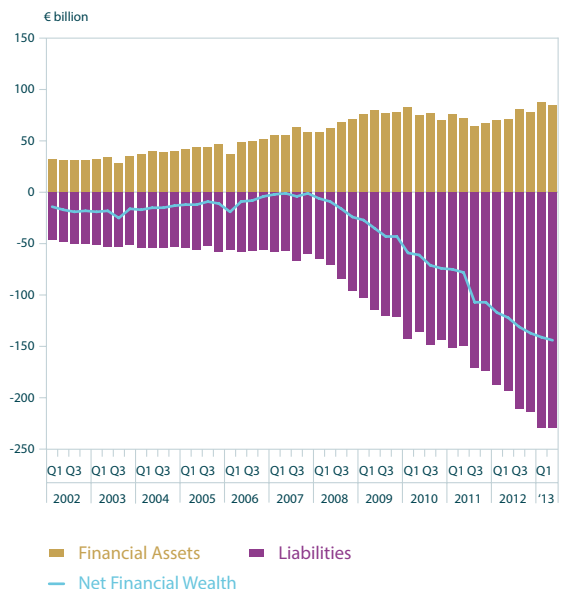
Debt and Deficit Developments

The government deficit, when measured as a four-quarter moving average, improved slightly during Q2 2013, falling by €6 million to reach minus €3.15 billion (Chart 6). The State deficit has declined every quarter since Q4 2010.

Government liabilities remained relatively unchanged during Q2 2013 increasing by just €127 million, to stand at €229 billion (Chart 7). Quarterly Government Debt (QGD), which is the standard quarterly measure of debt consistent with Excessive Deficit Procedure (EDP)¹ methodology, also increased over the quarter, reaching €205 billion.

During Q2, the outstanding amount of government debt securities declined by €3.4 billion. This largely reflected the redemption of a 5% treasury bond during April 2013. The decline in debt securities was offset by an increase in loan liabilities. This was largely due to further funding of €4.4 billion received by the State as part of the EU/IMF programme.

Chart 8: Government Net Financial Wealth



Source: Quarterly Financial Accounts, Central Bank of Ireland.

¹ Government liabilities in QFA differ from the EDP measure of debt as they are calculated on a non-consolidated basis, and employ different coverage and valuation criteria.

Government net financial wealth, the difference between financial assets and liabilities, declined by a further €3.4 billion during Q2 2013 (Chart 8). The reduction in wealth reflected a decline in State financial assets, as the Government reduced their holdings of deposits over the quarter by €2.7 billion. At Q2 2013, net financial wealth stood at minus €144 billion. Overall, net financial wealth has declined by €142.6 billion since Q4 2007.

Sovereign Debt Market

Developments in sovereign bond markets during Q3 2013 and into Q4 2013 were influenced by a combination of developments in the US and a series of mixed data releases. During July, long-term euro area government bond yields declined, partly due to the ECB Governing Council's announcement regarding forward guidance on key interest rates. By August, however, long-term euro area bond yields rose sharply following a number of positive data releases. These rising yields reflected renewed expectations around a potential tapering of bond purchases under the Federal Reserve's quantitative easing programme.

This trend was reversed in late-Q3 when euro area bond yields declined following less favourable data releases from the US and a change in market expectations about the stance of current US monetary policy. Bond yields fell further in the aftermath of confirmation in mid-September that the Federal Reserve would not commence the moderation of bond purchases. At the start of Q4 2013, yields on AAA-rated long-term euro area government bonds had risen on foot of the uncertainty that surrounded the raising of the US federal debt ceiling. These bond yield increases were reversed as October progressed amidst a number of mixed data releases.

Developments in long-term Irish government bond yields in recent months have largely mirrored developments for other euro area countries. By mid-June 2013, these yields had

fallen to close to 3.9 per cent before climbing to 4.3 per cent before the end of the month and then easing back into early-July. Yields continued to fall throughout most of July, reaching a low of approximately 3.8 per cent, before resuming an upward trajectory, rising to almost 4.2 per cent by end-August.

During September, the yield on ten-year Irish government bonds began to fall again following the Federal Reserve System's announcement in the wake of renewed speculation around the accommodative US monetary policy. The yield continued to fall over the following weeks and at the start of November had reached close to 3.5 per cent. These declines followed the introduction of Budget 2014 and the decision by Moody's to revise its outlook on Ireland to stable. The yield remained stable into December as Ireland approached the conclusion of its EU/IMF programme, but began to fall as 2013 came to a close. By early-January 2014, the yield had fallen to less than 3.3 per cent, its lowest level for almost eight years, as Ireland returned to the international markets for the first time since exiting the EU/IMF programme with the issuance of a new ten-year bond, see Chart 9.

The outstanding nominal volume of existing Irish government long-term bonds in issue was approximately €115 billion at end-October 2013 (up from €88.3 billion for the same period in 2012). The termination of promissory notes used by IBRC as security for borrowings from the Central Bank of Ireland and their replacement with long-term Irish government bonds in February 2013 was largely responsible for this increase.

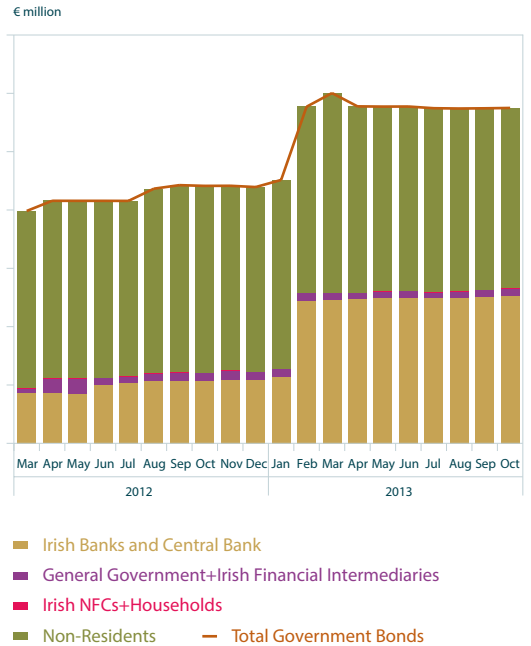
By end-October, the holders of government bonds continued to be predominantly non-resident, with 54 per cent of government bonds in issue held by foreign investors. Resident holders predominantly comprise banks, holding almost half (44 per cent) of the total amount outstanding, see Chart 10.

Chart 9: Irish Government Ten-Year Bond Yields



Source: Thomson Reuters Datastream.

Chart 10: Holders of Irish Government Bonds



Source: Central Bank of Ireland.

Box A: Development of Own-Use Bank Bonds for Funding Purposes

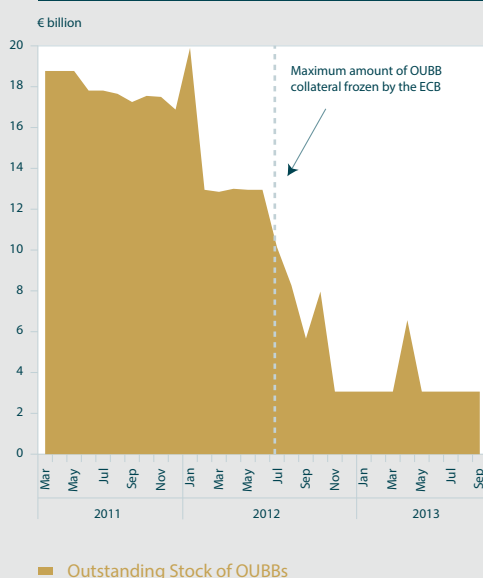
By Dermot Coates, Jenny Osborne Kinch and Aoife Moloney²

Domestic Irish credit institutions began to issue Own-Use Bank Bonds (OUBBs) in early-2011. These instruments are unsecured debt securities that are both issued, and retained (self-held), by Irish credit institutions under the Credit Institutions Eligible Liabilities Guarantee (ELG) Scheme 2009. They rank *pari-passu* to other debt and carry an unequivocal and irrevocable guarantee from the Irish Government³. OUBBs were issued in response to the significant funding pressures facing domestic credit institutions resulting from an ongoing loss of deposits alongside a contraction in foreign funding from mid-2010. As domestic credit institutions struggled to issue new market debt or to retain interbank funds, temporary measures relating to Eurosystem refinancing operations and eligibility criteria were introduced in early-2011. Subsequently, from July 2012, the maximum amount of OUBB collateral eligible for domestic Irish banks was frozen at the level in use at that time, unless otherwise approved by the ECB Governing Council⁴. Under these measures, bonds backed by a government guarantee scheme, including the OUBBs, are eligible for ECB monetary policy operations. Consequently, the Irish banks have, until very recently, been able to present these types of OUBBs to the ECB as collateral when drawing down funding.

2 The authors are respectively an Economist, Senior Economist and Research Assistant in the Statistics Division of the Central Bank of Ireland.
 3 Where a given bank is unable to make whole their obligations in respect of a bond, the holder may demand payment from the Guarantor (the Irish Government).
 4 ECB Decision ECB/2012/12 on the 3rd July 2012 Article 4b, 'Acceptance of government-guaranteed bank bonds' amended Decision ECB/2011/25 on additional temporary measures relating to Eurosystem refinancing operations and eligibility of collateral. See: https://www.ecb.europa.eu/ecb/legal/pdf/en_ecb_2012_12_f_sign.pdf

Box A: Development of Own-Use Bank Bonds for Funding Purposes*By Dermot Coates, Jenny Osborne Kinch and Aoife Moloney*

By end-Q1 2011, and prior to the recapitalisations that were to follow shortly thereafter, four domestic Irish credit institutions issued, and held, OUBBs with a nominal value of approximately €19 billion (see Box A Chart 1 below). The access to Eurosystem financing facilitated by the acceptance of the OUBBs as eligible collateral served to alleviate the Irish credit institutions' funding pressures. The initial tranche of notes issued – comprising a mixture of fixed and floating rate instruments – were short-term in nature with a typical maturity profile of just three months. In most cases, the OUBBs were rolled-over as they matured (albeit that the successor instruments still carried a three-month maturity). Reliance on this facility remained high throughout 2011 with these OUBBs accounting for approximately 25 per cent of total debt-securities-related liabilities outstanding. By the end of 2011, almost €17 billion in OUBB-based funding was outstanding, from issuance by three Irish credit institutions.

Box A Chart 1: Outstanding Stock of OUBBs

Source: Central Bank of Ireland.

The total stock of outstanding OUBBs peaked at almost €20 billion in January 2012 before declining to almost €13 billion by end-Q1. Following the ECB's introduction of an upper limit on the maximum amount of OUBBs' collateral eligible for the domestic Irish credit institutions, the use of this funding continued to decline throughout 2012. By the end of the year, the value of outstanding OUBBs had fallen further to just over €3 billion, with only one Irish credit institution continuing to access Eurosystem financing via these instruments at the year-end and into Q1 2013. A further round of OUBB issuance⁵ took place in early-2013 with two Irish credit institutions participating. The OUBBs were issued prior to the expiry of the ELG Scheme but these were not short-term instruments (as per previous OUBBs), and were due to mature in March 2015. The ECB will no longer accept these notes as collateral after this date⁶. The stock of outstanding OUBBs temporarily increased to €6.6 billion in April 2013 but this fell back to €3 billion as one of these OUBBs was redeemed early.

Having peaked at 25 per cent of total outstanding debt securities in 2011, by end-2012, this reliance on OUBBs as a source of bond-related funding had fallen to 8 per cent, see Box A Chart 2. Even though the stock of outstanding OUBBs remained relatively stable at €3.1 billion for most of 2013, reliance upon this funding had increased to 11 per cent by Q3 2013. This reflected a reduction in the total stock of outstanding debt securities as part of the deleveraging process undertaken by the Irish domestic credit institutions.

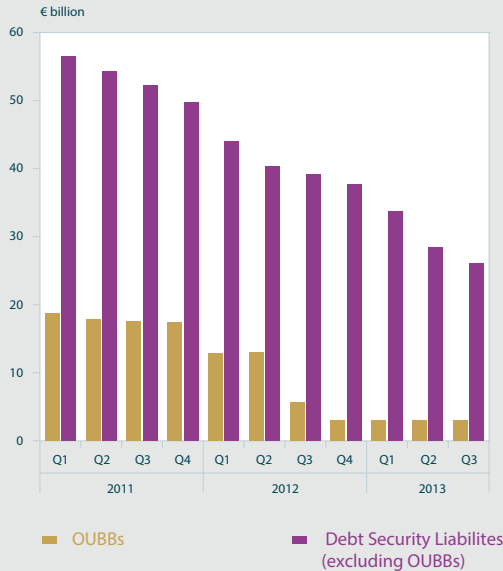
⁵ Of the two instruments issued in March 2013 by the Irish banks, one bond was a roll-over of an existing OUBB.

⁶ Under Article 1 of the Decision of the ECB (Rules concerning the use as collateral for Eurosystem monetary policy operations of own-use uncovered government-guaranteed bank bonds, March 2013), these bonds can no longer be used as collateral by the counterparty, either directly or indirectly, from 1 March 2015. See: http://www.ecb.europa.eu/ecb/legal/pdf/l_09520130405en00220022.pdf

Box A: Development of Own-Use Bank Bonds for Funding Purposes

By Dermot Coates, Jenny Osborne Kinch and Aoife Moloney

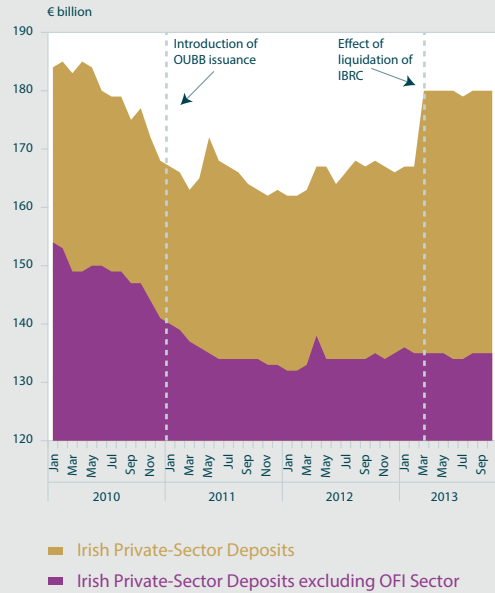
Box A Chart 2: Dependence of the Irish Domestic Banks on OUBBs for Wholesale Funding



Note: Wholesale funding refers to debt securities (i.e. bonds and notes) issued by the Irish banks and outstanding over this period, as reported to the Central Bank of Ireland per the Quarterly Survey of Credit Institutions. OUBBs refer to those unsecured debt securities issued under the ELG Scheme. Resumed bond market access includes asset covered securities plus senior, unsecured issuance (including mortgage bank subsidiaries).

Source: Locational Banking Statistics, Central Bank of Ireland.

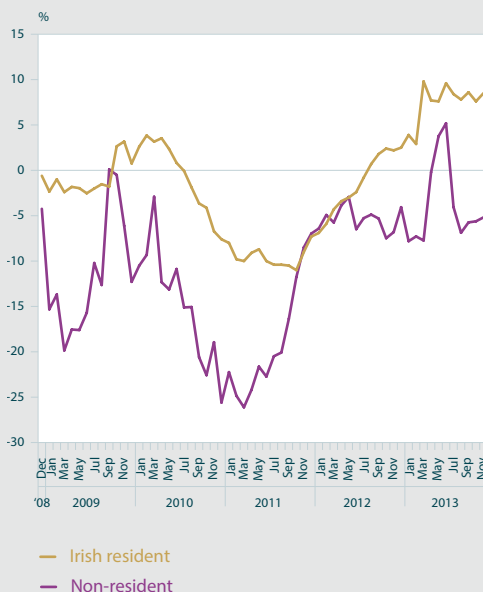
Box A Chart 3: Deposits from the Irish Private Sector - Outstanding Amounts



Note: Private-sector deposits include Households; Non-Financial Corporations; Other Financial Intermediaries; and Insurance Corporations and Pension Funds.

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

Box A Chart 4: Annual Rates of Change of Private-Sector Deposits in Resident Credit Institutions



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

Against the backdrop of the expiry of the ELG Scheme and changes to the ECB rules regarding Eurosystem collateral eligibility, a number of developments have led to a stabilisation of the funding base of the Irish domestic credit institutions. As these entities have deleveraged, there has been an ongoing series of bond redemptions, particularly with regard to short-term securities. At the same time, there is evidence of renewed debt issuance, which has helped extend the maturity profile of outstanding debt. Furthermore, the volume of deposits with these credit institutions has stabilised in the past two years, even taking into account the impact of transactions in March 2013 relating to the liquidation of IBRC (see Box A Chart 3).

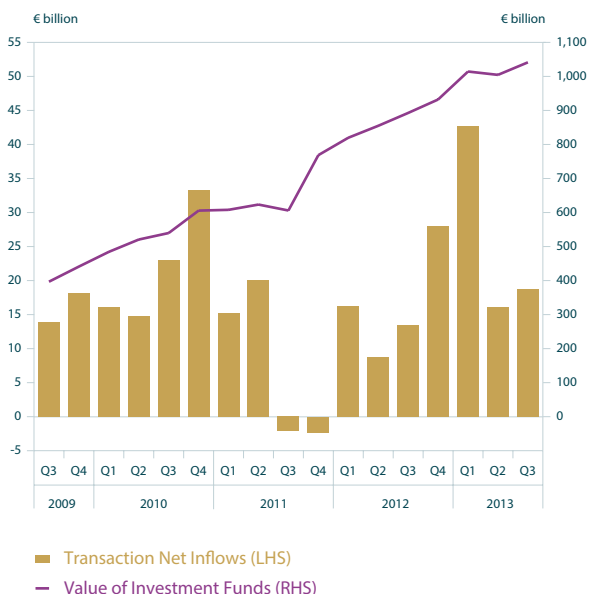
Institutional Investors

Investment Funds

Irish resident investment funds (IFs) increased in value by €36.8 billion to €1,041 billion in Q3 2013 on the basis of net asset value, with net investor inflows and revaluations contributing almost equally. Within net investor flows, most fund types enjoyed substantial inflows, although bond funds saw significant net outflows of €9.6 billion. Although bond prices were relatively stable in Q3, this followed a sharp market fall in Q2 which appears to have had some impact on investor confidence. Revaluations were driven by strong global equity markets, with holdings of shares and other equity contributing €16.6 billion to total revaluations of €18 billion. Revaluations in euro area holdings were particularly strong reflecting the rebound in euro area equity markets. However, gains in US dollar holdings were partly offset by the currency's depreciation against the euro, of over 4 per cent in the quarter. The overall investment fund pattern in Ireland is broadly similar to that of the euro area as a whole, with revaluations driving strong growth in net asset value, though outflows from other euro area bond funds were not as large.

Investment managers showed a marked preference for debt security holdings in Q3 2013. Within bond funds, investor redemptions were met principally by reducing deposits rather than redeeming debt security holdings. Meanwhile, mixed funds and hedge funds, which have relatively unconstrained investment strategies, showed a clear preference for debt security assets, with equity holdings actually declining slightly in both cases, despite significant net investor inflows. Even equity funds only allocated around half of all additional funds towards direct equity investments. This pattern is likely to reflect some caution among funds following an extended period of strong growth in equity prices and a renewed appetite for debt securities following revaluations from record lows in the previous quarter. Within debt security investments, there was a preference, though not marked, towards sovereign debt rather than private-sector debt.

Chart 11: Value of Investment Funds Shares/Units



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

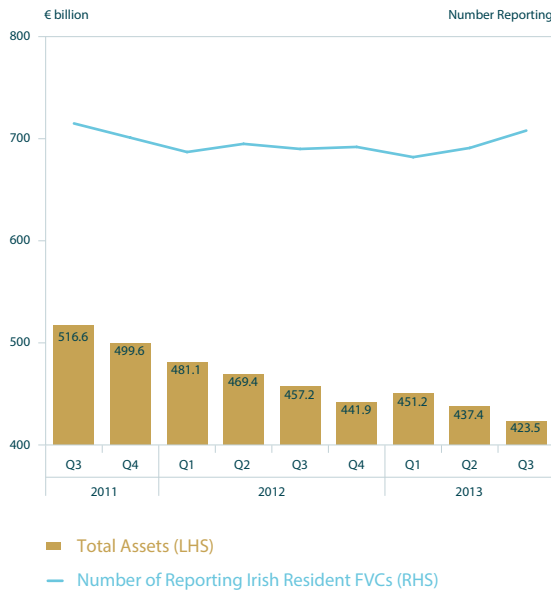
Source: Investment Funds Statistics, Central Bank of Ireland.

Financial Vehicle Corporations

Irish financial vehicle corporations' (FVCs) assets continued a trend of gradual decline, evident since Q4 2010, falling to €423.5 billion in Q3 2013 from €437.4 billion in the previous quarter. Despite the fall in asset values in the quarter, the number of reporting FVCs increased to 708 from 691 in Q2 2013 as illustrated in Chart 12. This trend of declining asset values combined with increasing reporting numbers, also seen in Q2 2013, reflects a move away from larger FVCs with multi-billion portfolios of asset-backed securities towards smaller FVCs engaged in the acquisitions of commercial property loans and aircraft securitisations, for example. This suggests a continuing appetite for securitisation among investors, who nevertheless remain cautious.

Outflows from 'securities other than shares', 'securitised loans', and 'deposit and loan claims' were the main drivers in the fall in asset values in Q3 2013, with negative transactions of €6.9 billion, €5.6 billion and €1.8 billion, respectively. These negative transactions reflected the winding-up and liquidation of a

Chart 12: Total Assets and Number of Reporting Irish Resident FVCs



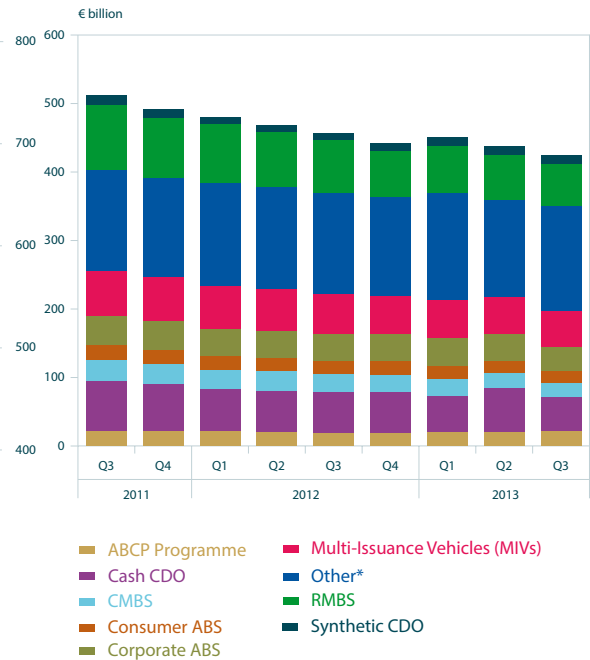
Source: Financial Vehicle Corporations Statistics, Central Bank of Ireland.

number of larger FVC vehicles. The decline in asset values was most evident for corporate asset-backed vehicles, and residential mortgage-backed vehicles with negative transactions of €3.9 billion and €2.8 billion respectively, as shown in Chart 13. Large declines were also seen for cash collateralised debt obligations (CDO) vehicles (€2.7 billion), 'other' FVC vehicles (€1.9 billion) and multi-issuance vehicles (€1.4 billion). The only FVC vehicle type to gain in value was asset-backed commercial paper vehicles, which increased by €2.2 billion or 11 per cent over Q3 2013.

Non-Financial Corporations

Non-financial corporation (NFC) debt⁷ decreased by €10.3 billion during Q2 2013 to stand at €357 billion, as seen in Chart 14. This marked the third consecutive quarter where debt outstanding declined. Similarly, debt as a percentage of GDP also reduced during the quarter. The ratio declined by 5.7 percentage points to reach 219 per cent of GDP, the lowest level since Q4 2010. Debt

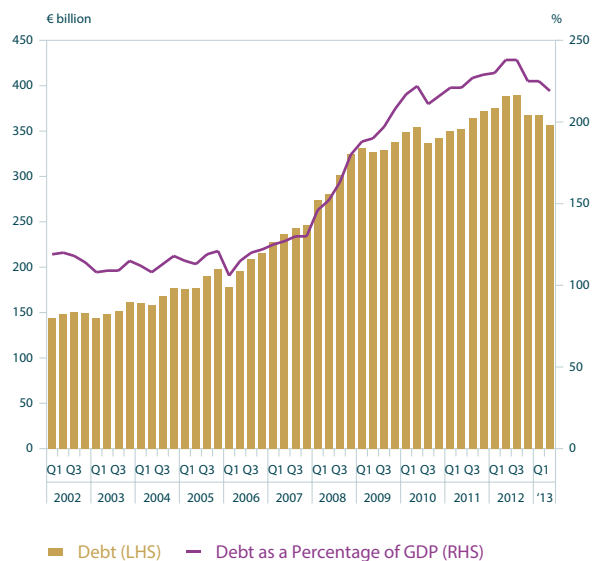
Chart 13: Total Assets of Irish Resident FVCs per Vehicle Type



* Includes NAMA vehicles and other securitisations not included in above categories.

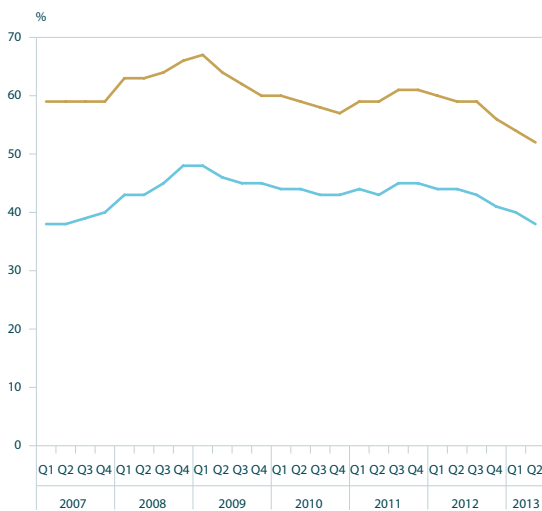
Source: Financial Vehicle Corporations Statistics, Central Bank of Ireland.

Chart 14: NFC Debt



Sources: Quarterly Financial Accounts, Central Bank of Ireland; and Quarterly National Accounts, CSO.

⁷ NFC debt is defined as the sum of its 'securities other than shares' and 'loans' liabilities. The NFC sector's loan liabilities are now presented on a gross basis. This means that outstanding amounts for NFC loans include all impairment provisions recognised against the sector's loans. Debt is non-consolidated, meaning that inter-company debt is included.

Chart 15: NFC Debt to Financial Assets and Liabilities

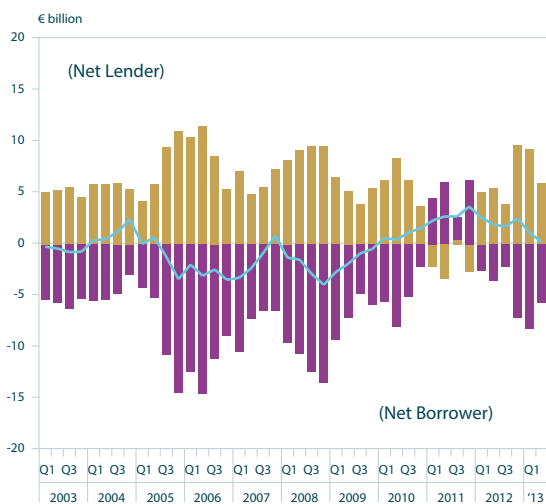
— Debt as a % of financial assets
— Debt as a % of liabilities

Source: Quarterly Financial Accounts, Central Bank of Ireland.

declined as NFCs repaid loans of €4.2 billion during Q2 2013, the majority of which was with Irish MFIs. Negative other changes and revaluations⁸ (€7 billion) also contributed towards the decrease in debt.

NFC debt relative to financial assets⁹ and liabilities¹⁰ also reduced during Q2 2013 (Chart 15). The ratio of debt to financial assets declined to 52.2 per cent, due to a fall in debt and to a lesser extent, an increase in NFC financial assets. The ratio of NFC debt to total liabilities decreased during the quarter to 38.3 per cent. This reduction implies that NFCs have less recourse to funding from loans and securities, compared with funding from equity and other accounts payable.

The NFC sector has been a net lender since Q1 2010, albeit the amounts involved continues to fall, as shown in Chart 16¹¹. The chart shows that NFC net lending amounted to €0.2 billion during Q2 2013. This is due to investments of €6 billion in financial assets, exceeding the incurrence of liabilities of €5.7 billion over the quarter.

Chart 16: NFC Net Lending/Net Borrowing on a Four-Quarter Moving Average Basis

■ Acquisition of Financial Assets
■ Incurrence of Financial Liabilities
— Net Lending/Net Borrowing

Source: Quarterly Financial Accounts, Central Bank of Ireland.

Multinational NFC Developments

NFC debt levels continued to fall in the second quarter of 2013, despite foreign-owned multinationals continuing to reinvest in their Irish operations. In the third quarter, foreign direct investment (FDI) inflows amounted to €3.5 billion, which was entirely driven by reinvested earnings, offsetting falls in equity and other capital. Despite some easing in FDI over the past number of months, there has been quite a sizeable inflow of just over €26 billion for the year to September.

Meanwhile, investment abroad by Irish-owned multinational NFCs amounted to €10.9 billion over the quarter, broadly similar to the previous quarter, while direct investment income earned abroad by Irish-owned multinational NFCs remained steady once again at around €4.4 billion.

⁸ Other changes and revaluations includes the effects of statistical re-classifications, changes in definitions, write-offs, revaluation effects and exchange rate effects.

⁹ Financial assets are defined as the sum of 'currency and deposits', 'securities other than shares', 'shares and other equity', 'insurance technical reserves' and 'other accounts receivable/payable'.

¹⁰ Financial liabilities are defined as the sum of 'loans' and 'other accounts receivable/payable'.

¹¹ The NFC net lending/net borrowing position is measured as a four-quarter moving average, to adjust for seasonality.

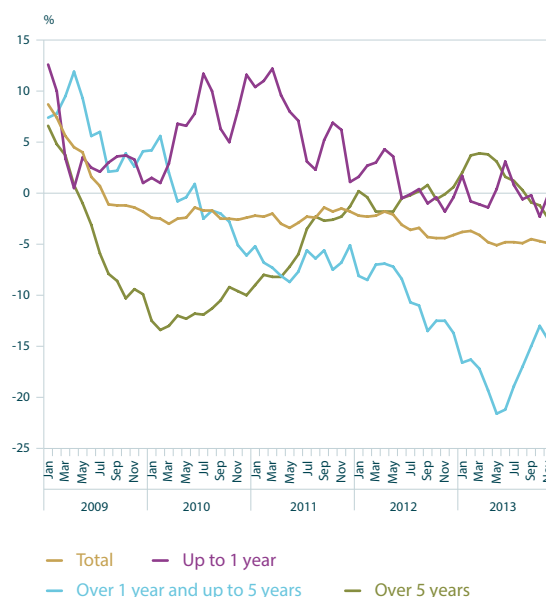
Credit Advanced to the NFC Sector by Irish Resident Credit Institutions

Over the course of the six months to end-November 2013, credit advanced to the resident NFC sector¹² has declined at an average annual rate of 4.8 per cent. This is higher than the preceding six months, when the level of credit advanced had fallen by an average of 4.3 per cent. Loans issued by resident credit institutions are an important source of funding for indigenous corporations. In particular, this is true for small- and medium-sized enterprises (SMEs), which, unlike the multinational sector, may not have easy recourse to alternative market-based funding or capital injections from overseas parent entities. Accordingly, this increased pace of decline in credit is of some concern. The monthly net flow of credit to the NFC sector¹³ averaged minus €270 million over the last six months to end-November 2013.

Longer-term loans, having previously exhibited a sustained period of positive growth, recorded negative growth in the three months to end-November 2013. The average annual rate of change in loans, with an original maturity over five years, averaged 3 per cent in the first half of 2013; however, the annual rate of growth in November 2013 was minus 2.5 per cent.

Loans with a maturity of up to one year declined over the three months to end-November 2013 by an average of minus 0.5 per cent. Loans with an original maturity of between one and five years have continued

Chart 17: Loans to Irish Resident NFCs, Annual Rates of Change



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

to fall sharply over the last number of months, declining by an annual rate of 14.4 per cent in November 2013 and by an average of 16.6 per cent over the six months ending November 2013.

The accelerated decline in lending to NFCs is also reflected in credit advanced to non-financial enterprises, which include non-incorporated businesses as well as larger corporations. The annual pace of contraction was 4.9 per cent at end-September 2013,

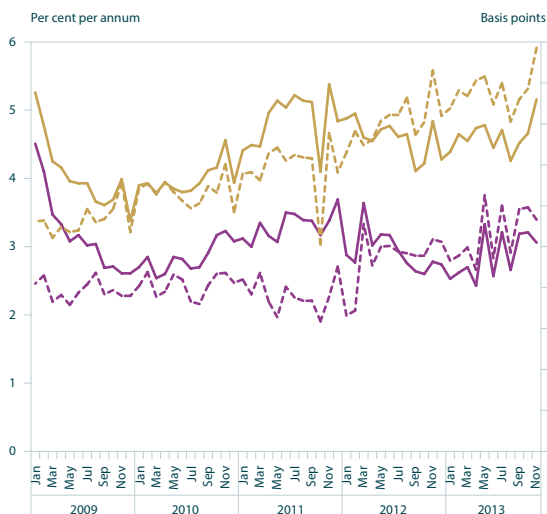
Table 1: Credit Advanced to Non-Financial Enterprises - Annual Percentage Change

	All Enterprises					SMEs				
	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13
Construction and Real Estate	-3.5	-4.1	-5.1	-5.8	-5.6	-3.5	-3.3	-3.6	-3.5	-3.5
Agriculture	-3.4	-2.9	-1.8	-1.6	-2.0	-4.4	-3.5	-5.7	-5.4	-3.6
Manufacturing	-1.8	-6.0	0.3	-1.8	-0.3	0.6	-2.5	-1.3	-1.8	-2.3
Wholesale/Retail Trade & Repairs	-5.9	-8.2	-6.1	-7.5	-6.7	-8.0	-7.9	-8.0	-7.0	-5.3
Hotels and Restaurants	-1.0	-2.3	-2.1	-5.5	-5.5	-3.0	-3.1	-3.5	-4.9	-4.7
Business and Administrative Services	-11.6	-4.2	-3.8	-0.3	-3.1	-3.9	-5.6	-7.9	-8.0	-8.3
Other	-10.7	-6.5	-5.5	-3.8	-3.9	-5.7	-5.3	-5.6	-5.1	-4.0
Total	-4.5	-4.6	-4.7	-5.3	-4.9	-4.1	-4.1	-4.6	-4.6	-4.1

Source: Trends in Business Credit and Deposits, Central Bank of Ireland.

¹² Credit advanced to the NFC sector includes loans to NFCs as well as credit institutions' holdings of securities issued by NFCs.

¹³ The monthly net flow of credit takes into account and removes non-transaction effects.

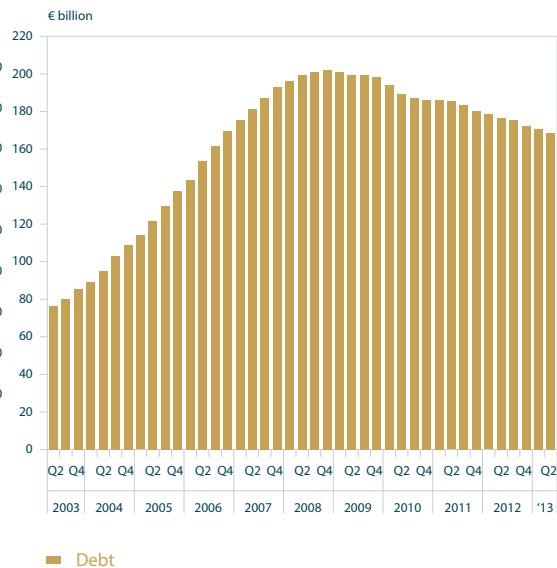
Chart 18: Interest Rates on New NFC Loan Agreements

- New loans up to and including €1 million, interest rate (LHS)
- New loans over €1 million, interest rate (LHS)
- - New loans up to and including €1 million, margin over 3 month Euribor (RHS)
- - New loans over €1 million, margin over 3 month Euribor (RHS)

Source: Retail Interest Rate Statistics, Central Bank of Ireland.

with enterprises engaged in the wholesale/retail, hotels/restaurants and construction/real estate sectors experiencing the most significant decline (Table 1). Credit advanced to non-financial SMEs fell by 4.1 per cent at end-September 2013. The decline in credit advanced to SMEs was most evident in the Wholesale/Retail Trade & Repairs, Hotels & Restaurants, and Business & Administration Services sectors. New lending drawdowns in the agriculture sector continued to be strong at end-September 2013, amounting to €577 million over the last four quarters. Total new lending to non-financial enterprises amounted to just under €2.3 billion during the last four quarters to end-September 2013.

Weighted average interest rates on outstanding loans to NFCs issued by Irish resident credit institutions have consistently fallen since July 2011, when rates peaked at just over 3.8 per cent. Despite this decline, rates have remained relatively stable since October 2012, remaining close to 3 per cent. Over the equivalent period, interest rates

Chart 19: Household Debt

■ Debt

Source: Quarterly Financial Accounts, Central Bank of Ireland.

applicable to the euro area have not declined to the same extent, falling from a peak of 3.89 per cent in November 2011 to 3.26 per cent in November 2013.

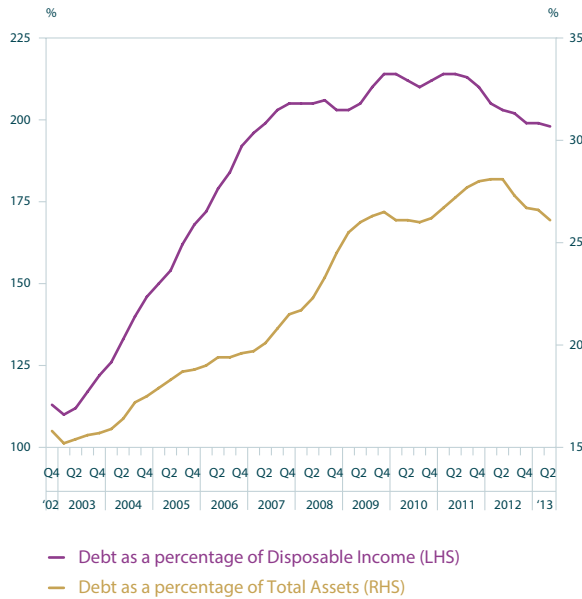
In terms of new business, rates applicable to loans up to €1 million, averaged 4.63 per cent over the six months ending November 2013. The corresponding monthly rate at end-November was 5.16 per cent. In relation to new business loans over €1 million, rates have averaged 2.98 per cent for the six month period to end-November 2013. The corresponding monthly rate at end-November 2013 stood at 3.06 per cent.

Households

Household debt¹⁴ continued to decline during Q2 2013, falling by €1.7 billion over the quarter (Chart 19). Debt stood at €170.3 billion or €37,135 per capita, its lowest level since Q3 2006. Overall, debt is 16.4 per cent below its peak of €203.8 billion at Q4 2008.

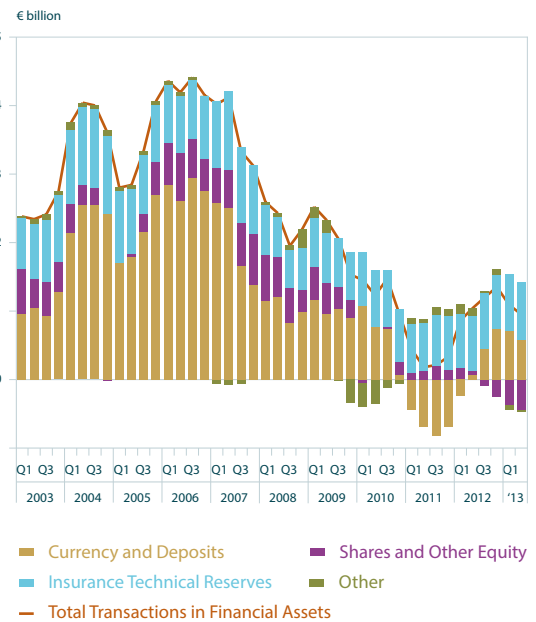
¹⁴ Household debt is defined as total loans.

Chart 20: Household Debt Indicators



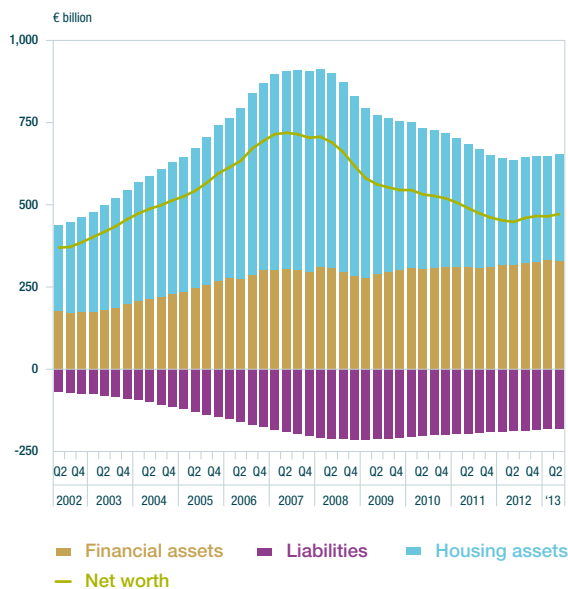
Sources: Quarterly Financial Accounts, Central Bank of Ireland; and Quarterly National Accounts, CSO.

Chart 22: Household Transactions in Financial Assets, Four-Quarter Moving Average



Source: Quarterly Financial Accounts, Central Bank of Ireland.

Chart 21: Household Net Worth



Source: Quarterly Financial Accounts, Central Bank of Ireland.

As a result of the decline in debt, indicators of household debt showed a slight improvement during Q2 2013 (Chart 20). Debt as a proportion of disposable income¹⁵ fell by 1.1 percentage points over the quarter to equal 198.3 per cent. This reflected the decline in debt of 1 per cent which was greater than the offsetting decrease in disposable income of 0.4 per cent. The contribution of debt and disposable income to changes in the ratio, and comparisons with developments in other European countries is examined in Box B. Debt as a proportion of total assets reduced by 0.4 percentage points during Q2 2013, to stand at 26.1 per cent. The decrease in this indicator reflected both the decline in debt, as well as a 0.7 per cent increase in total household assets.

Household net worth¹⁶ increased by €6.5 billion during Q2 2013 to stand at €471.6 billion (Chart 21). This corresponded to a net worth of €102,852 per capita. The increase in net worth over the quarter largely reflected the rise in the value of housing assets of €7.1 billion.

¹⁵ The disposable income figures use the four-sum moving average of gross disposable income adjusted for the change in net equity of households in pension funds reserves.

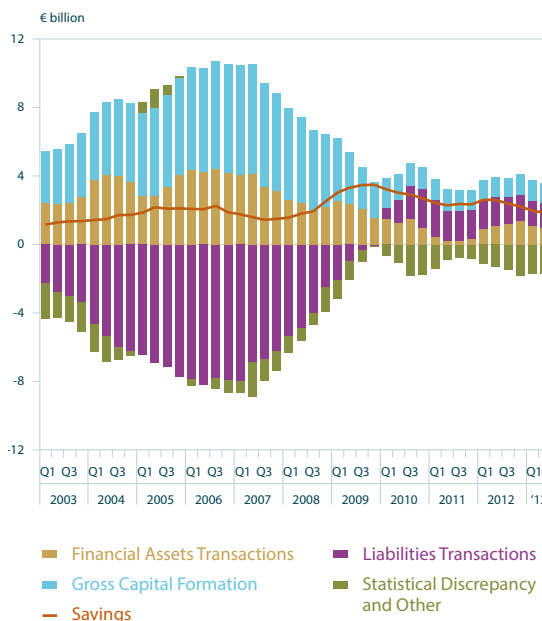
¹⁶ Household net worth is calculated as the sum of housing and financial assets minus their liabilities. The Central Bank of Ireland estimate of housing assets is based on the size and value of housing stock. Data on the value of housing is obtained from the CSO's 'Residential Property Price Index' (RPPI).

This upward movement in housing assets represented the largest quarterly increase since Q1 2007. Household liabilities and financial assets declined by 0.9 per cent and 0.7 per cent, respectively, over the quarter. The decline in financial assets was largely driven by decreases in the value of 'net equity of households in pension reserves' and 'quoted shares', plus a reduction in holdings of 'other deposits'¹⁷.

Household investment in financial assets totalled €0.9 billion during Q2 2013 (Chart 22). This was the lowest level since Q1 2012 and reflected increased investments in 'technical reserves', which were partly offset by decreases in 'currency and deposits' and 'shares and other equity'.

Combining household savings and gross capital formation¹⁸ data, from the CSO's non-financial accounts (i.e. the real side of the economy), with transactions data from Quarterly Financial Accounts allows for a decomposition of how households use their savings. Chart 23 shows that, when measured as a four-quarter moving average, household savings declined during Q2 2013, for the fifth consecutive quarter. This is attributable to decreased investment by households in financial assets.

Chart 23: Household Savings Decomposed by Use, Four-Quarter Moving Average



Sources: Quarterly Financial Accounts, Central Bank of Ireland; and Quarterly Sectoral Accounts, CSO.

Box B: Analysis of Recent Trends in Households' Debt Reduction

By Anne-Marie Kelly and Brídín O'Leary¹⁹

High and increasing levels of household indebtedness prevailed in many industrialised countries before the onset of the financial crisis (Cecchetti et al., 2011²⁰). This box examines how households' debt-to-gross disposable income (GDI) ratio²¹ has changed in a number of European countries since the financial crisis began. High household debt is a potential sign of financial vulnerability among households, as excessive debt can dampen household consumption and investment, in addition to reducing their ability to withstand shocks (IMF, 2012²²). In the face of a deteriorating economic environment, households tend to change their economic behaviour towards the repayment of debt (Cussen and Phelan, 2010²³). This balance

¹⁹ The authors are respectively a Research Assistant and an Economist in the Statistics Division of the Central Bank of Ireland.

²⁰ Cecchetti, S.G., M.S. Mohanty and F. Zampolli (2011), 'The Real Effects of Debt', BIS Working Paper No. 352, Bank for International Settlements, September.

²¹ The household debt-to-GDI ratio shows the debt of households and non-profit institutions serving households (NPISHs), as a percentage of their GDI. Debt is the sum of its loans, debt securities and pension fund reserves liabilities. Gross Disposable Income (GDI) is the four-sum moving average of quarterly gross disposable income plus adjustment for the change in net equity of households and pension funds.

²² IMF (2012), 'Dealing with Household Debt', Chapter 3, World Economic Outlook (WEO), 'Growth Resuming, Dangers Remain', International Monetary Fund, April.

²³ Cussen, M. and G. Phelan (2010), 'Irish Households: Assessing the Impact of the Economic Crisis', Quarterly Bulletin No. 4, Central Bank of Ireland.

¹⁷ Other deposits are deposits which are not transferable deposits.

¹⁸ Gross capital formation consists of acquisitions of fixed assets less disposals. It includes acquisitions of dwelling.

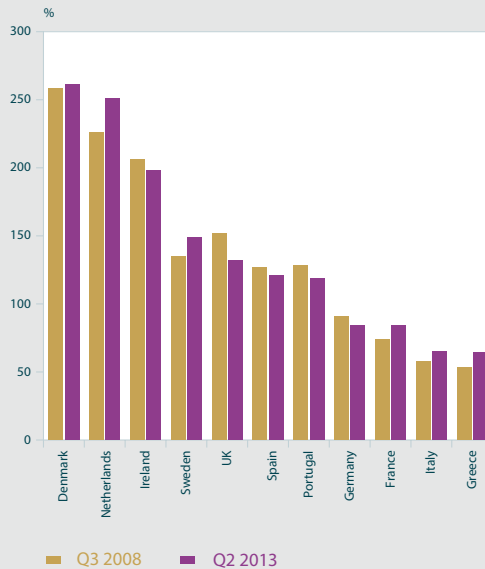
Box B: Analysis of Recent Trends in Households' Debt Reduction

By Anne-Marie Kelly and Bridín O'Leary

sheet adjustment can result in households reducing their consumption, with potentially negative implications for economic growth and recovery (Cooper, 2012²⁴). An analysis of the debt-to-GDI indicator for Ireland shows that despite a significant fall in nominal debt, the household debt burden remains high due to falling disposable income.

Irish households had a debt-to-GDI ratio of 198 per cent in Q2 2013, as seen in Box B Chart 1. This was the third highest ratio among the eleven European countries analysed, with only Denmark and the Netherlands having higher ratios of 261 and 251 per cent, respectively. While Irish debt levels remain high compared with these countries, the debt-to-GDI ratio has fallen by 8 percentage points since Q3 2008. The UK and Portugal were the only countries to decrease their debt-to-GDI ratio by greater amounts over the same time period. In contrast, six countries increased their household debt-to-GDI ratio, with the Netherlands showing the largest increase of 24 percentage points.

Box B Chart 1: Comparison of Household Debt-to-GDI Ratios



Sources: Central Bank of Ireland; CSO; Eurostat; and the ECB.

Box B Chart 2: Changes to Household Debt and Disposable Income



Sources: Central Bank of Ireland; CSO; Eurostat; and the ECB.

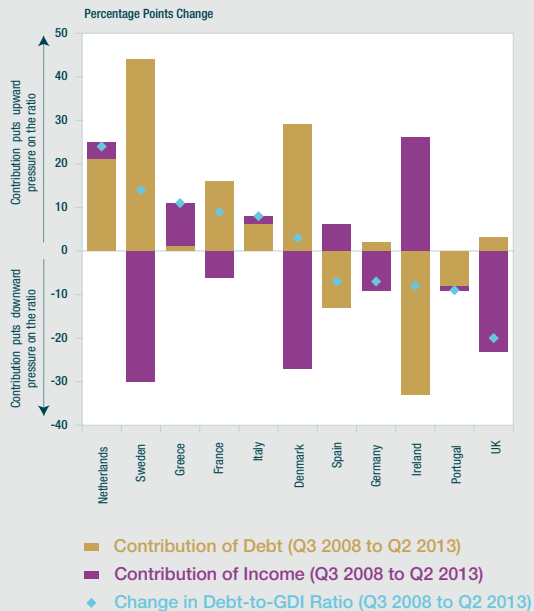
The percentage change in debt and disposable income from Q3 2008 to Q2 2013 is shown in Box B Chart 2. Ireland showed the largest reduction in its household debt burden, with debt falling by 16 per cent over this period. Over the same period, however, disposable income decreased by 13 per cent, primarily due to higher tax contributions and pressure on wages. Greece was the only country that experienced a larger decline in disposable income during this time. In contrast to Ireland, households in Sweden, the UK, Germany, Denmark, and France all recorded an increase in both debt and disposable income.

The contributions of debt and disposable income to the change in debt-to-GDI ratios from Q3 2008 to Q2 2013 are presented in Box B Chart 3. The contribution of each to the ratio differs across countries. Irish households reduced their debt-to-GDI ratio by 8 percentage points, as the debt reduction contribution of 33 percentage points outstripped the disposable income

²⁴ Cooper, D. (2012), 'U.S. Household Deleveraging: What Do the Aggregate and Household-Level Data Tell Us?', Public Policy Brief No. 12-2, Federal Reserve Bank of Boston.

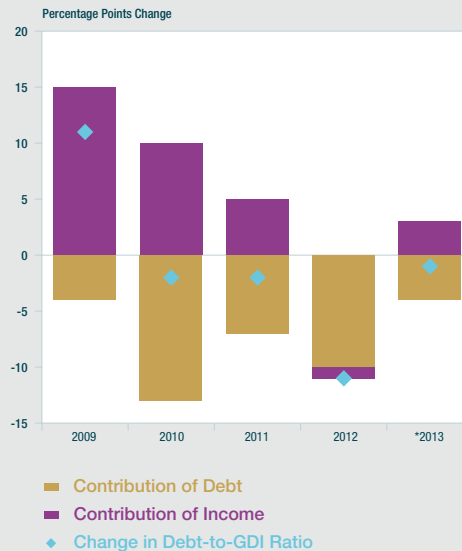
Box B: Analysis of Recent Trends in Households' Debt Reduction

By Anne-Marie Kelly and Brídín O'Leary

Box B Chart 3: The Contributions of Changes in Household Debt and Disposable Income to the Changes in Debt-to-GDI Ratios

Note: The contribution of income plus the contribution of debt equals the change in the Debt-to-GDI ratio. Debt-to-GDI ratio is debt divided by income at a point in time. An increase (decrease) in the numerator, i.e. debt, will increase (decrease) the Debt-to-GDI ratio. An increase (decrease) in the denominator, i.e. income, will decrease (increase) the Debt-to-GDI ratio.

Sources: Central Bank of Ireland; CSO; Eurostat; and the ECB.

Box B Chart 4: The Contributions of Changes in Household Debt and Disposable Income to Annual Changes in the Debt-to-GDI Ratio for Ireland

Note: The contribution of debt plus the contribution of income equals the change in the Debt-to-GDI ratio. Debt-to-GDI ratio is debt divided by income at a point in time. An increase (decrease) in the numerator, i.e. debt, will increase (decrease) the Debt-to-GDI ratio. An increase (decrease) in the denominator, i.e. income, will decrease (increase) the Debt-to-GDI ratio.

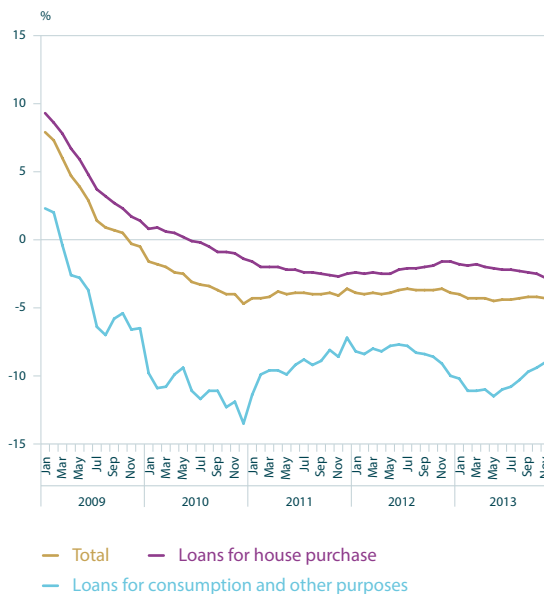
*2013 includes Q1 2013 and Q2 2013 data.

Sources: Central Bank of Ireland and CSO.

contribution of 26 percentage points. Households in the UK reduced their debt-to-GDI ratio by 20 percentage points, as their debt contribution increased by 3 percentage points while their disposable income contribution increased by 23 percentage points. This represents the largest fall in the ratio among the countries analysed. However, despite disposable income increases, households in Sweden, Denmark, and France have experienced increased debt-to-GDI ratios over the period, as debt increased faster than disposable income.

The contribution of debt and disposable income to the annual change in Ireland's debt-to-GDI ratio from 2009 to 2013 are shown in Box B Chart 4. For each of the five years, Irish households reduced their debt despite falling disposable income in 2009, 2010, 2011, and 2013. The fall in the ratio in 2012 was magnified by the marginal growth in disposable income that year. The contribution of debt and disposable income to changes in the debt-to-GDI ratio are important for analysing the wider economic dynamics of the household sector.

Chart 24: Loans to Irish Households, Annual Rates of Change



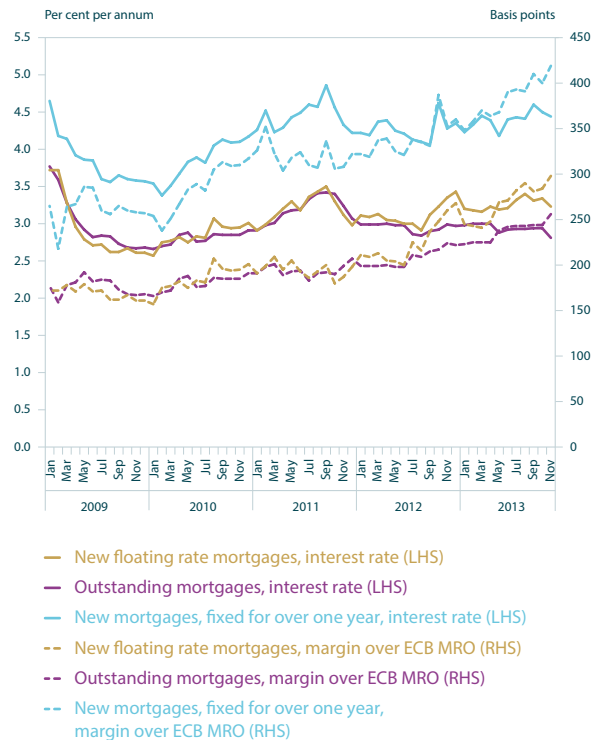
Source: Money and Banking Statistics, Central Bank of Ireland.

Lending to Households by Irish Resident Credit Institutions

Lending to Irish households continued to decline over recent months, with loans advanced by Irish resident credit institutions falling by €1.6 billion, or 1.5 per cent, over the six months to end-November 2013. The pace of decline in mortgage lending slowed marginally over this period, as loans for house purchase fell by almost €1 billion, or 1.2 per cent. The cumulative decline in mortgage lending over the last three years is now over €6.3 billion. Loans for consumption purposes, which include the use of credit cards and overdraft facilities, recorded a decline of €427 million, while loans for other purposes fell by €175 million over the six months to end-November 2013.

The number of mortgage holders entering early arrears slowed in the third quarter of 2013, while there was an increase in mortgages entering longer-term arrears of over 90 days.

Chart 25: Mortgage Interest Rates to Households



Source: Retail Interest Rate Statistics, Central Bank of Ireland.

At end-September 2013, 12.9 per cent of all private residential mortgage accounts for principal dwelling houses (PDH) were in arrears of over 90 days. This reflects an increase of 1.4 percentage points in the over 90 days arrears rate reported at end-September 2012. Meanwhile, 21.2 per cent of mortgage accounts for buy-to-let (BTL) properties were in arrears of over 90 days at end-September 2013. The trend emerging among longer-term arrears continues to be of particular concern, as the number of PDH accounts in arrears of over 360 days rose to 59,844, or 7.8 per cent, of all PDH mortgages. In addition, over 20,000 BTL accounts were in arrears of over 360 days. The outstanding balance on all mortgage accounts in arrears over 360 days was €18.1 billion at end-September 2013.

Over 80,000 PDH mortgage accounts were categorised as restructured at end-September 2013. Of this total stock, 53.4 per cent were not in arrears. Restructured accounts in arrears include accounts that were in arrears prior to

restructuring, where the arrears balance has not yet been eliminated, as well as accounts that are in arrears on the current restructuring arrangement. The most recent data indicate that 78.9 per cent of restructured PDH accounts were deemed to be meeting the terms of their current arrangement. This means that the borrower is, at a minimum, meeting the agreed monthly repayments according to the current restructure arrangement. Of the total stock of PDH accounts in arrears of over 90 days at end-September 2013, only 25.1 per cent of these were classified as restructured at that time, indicating limited progress in tackling longer-term arrears cases thus far. Restructuring activity undertaken to date has for the most part been short-term in nature; however, recent data has shown some increase in longer-term solutions. Lenders have introduced new loan modification options with the aim of providing longer-term and more sustainable solutions for borrowers in arrears. The Central Bank recently announced that the previous targets set for banks to have communicated their proposed sustainable

solutions by end-June 2013 were met. Further quarterly targets were also announced requiring lenders to reach sustainable conclusions with a percentage of borrowers by the end of 2013 and by Q1 2014.

Existing mortgage holders experienced a slight decrease in the cost of their borrowings over the last six months. The weighted average interest rate on existing mortgage loans with an original maturity over five years decreased by 7 basis points, to 2.81 per cent, over the six months to end-November 2013. Meanwhile, interest rates on existing loans for consumption and other purposes increased, with the weighted average rate across all maturities rising by 24 basis points to 6.42 per cent over the same period.

Developments in the International and Euro Area Economy

Overview

The global recovery is proceeding at a subdued pace with uneven developments across and within regions. Very accommodative monetary policies remain in place in Japan, the US and UK, with improved growth rates driven by investment and private consumption. Prospects for the euro area have also improved recently but lag those of other advanced economies. Weak labour markets, ongoing private sector deleveraging and fiscal consolidation will continue to weigh on euro area private demand into early 2014. The growth momentum in China appears to have rebounded slightly, supported in the short-term by a small-scale fiscal stimulus package. Other emerging economies have experienced a moderate slowdown in economic activity not helped by recent uncertainty surrounding global financial conditions and slower external demand. Emerging market growth rates are likely to remain above those of the advanced economies but below the strong levels seen in recent years, for both cyclical and structural reasons. World trade continues to reflect the weak momentum in global growth. However, new export orders have risen recently to their highest level in two years which could be regarded as a tentative indication of better trade prospects for 2014.

Activity in the US has been supported by a substantial upturn in both the housing and labour markets, rising household wealth and better credit availability. The Japanese economy continues to expand, albeit at a moderate pace, due in most part to a very accommodative monetary policy introduced with the aim of ending deflation. It has also been accompanied by an ongoing fiscal stimulus. UK economic activity recorded steady growth in Q3, mainly from the services sector, and survey indicators suggest that robust growth should continue through early 2014.

With only marginal euro area growth in Q3, business surveys point to a very modest improvement for Q4. Growth for the euro area is expected to have been negative for 2013 as a whole. Export growth has slowed diminishing the net trade contribution to output growth. Household indebtedness ratios have not started to decline as disposable income has

been hit by weak employment and higher taxes. Non-financial corporations have started to deleverage and their financial condition is improving but profit margins remain historically low. Developments across the euro area and countries under stress continue to face tight credit conditions.

Emerging market growth rates for Q3 picked up marginally compared with earlier quarters, albeit with a substantial deterioration in the growth contribution from net trade. A slowing in the momentum of growth has prompted downward revisions to medium-term output projections by the OECD and IMF for most emerging markets. While an improvement in Q3 growth in China was supported by credit-fuelled investment, a rebalancing of Chinese growth away from investment towards consumer demand is expected to be accompanied by a lower medium-term growth outturn. However, the risk of a hard landing or a sudden and prolonged growth slowdown

Table 1: Changes in real GDP in selected economies

	Percentage Change		
	2013 ^f	2014 ^f	2015 ^f
Global	2.7	3.6	3.9
United States	1.7	2.9	3.4
Euro Area	-0.4	1.0	1.6
United Kingdom	1.4	2.4	2.5
China	7.7	8.2	7.5
Japan	1.8	1.5	1.0

Source: OECD Economic Outlook no.94.

f Forecast

appears to have waned despite over-investment leading to deteriorating asset quality.

The outlook for global inflation remains one of contained nominal pressures. The annual increase in OECD consumer prices was 1.3 per cent in October, down from 1.5 per cent in September reflecting lower energy and food prices. Advanced economies continue to have ample spare capacity, while the inflation picture for emerging market economies is more mixed with inflation running above target in several countries. The global inflation outlook depends critically on developments in commodity prices. Oil prices have declined since the peak recorded in August, due to a recovery in global oil supply and lower global demand. In parallel, price pressures in the euro area also remain subdued but expectations regarding euro area inflation continue to be anchored in line with price stability. Inflation rates are expected to return closer to two per cent only in the medium-term depending, crucially, on the extent of the cyclical growth upswing. This will take time given the requirement to continue ongoing balance sheet adjustment, and the possibility of a longer than normal transmission lag of monetary policy in such an environment.

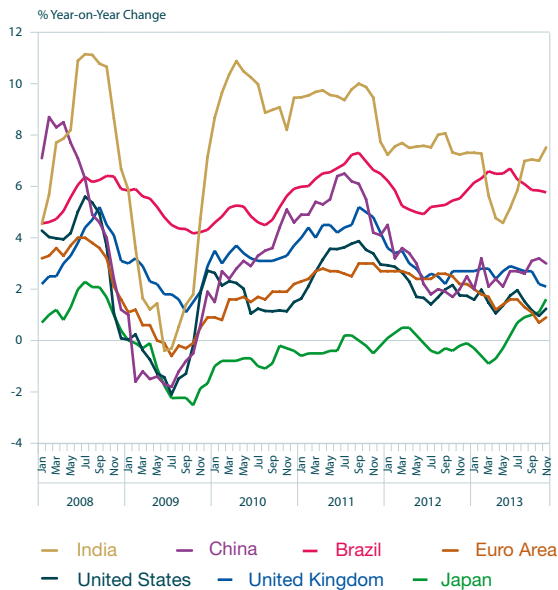
Chart 1: Global Purchasing Managers' Index

- Composite Output / Business Activity Index
- Composite New Orders / Incoming New Business Index
- Manufacturing New Export Orders Index

Source: Markit.

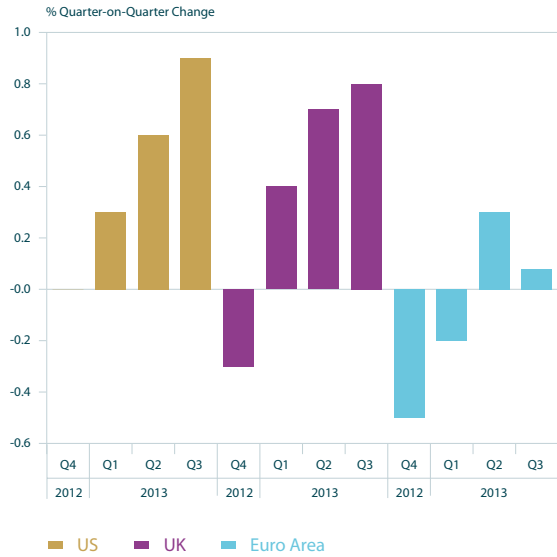
Note: For PMI indicators, above 50 represents expansion, below 50 represents contraction.

Chart 2: Selected Global Inflation Rates



Source: Thomson Reuters Datastream.

Chart 3: GDP Growth Rates



Source: Thomson Reuters Datastream.

Section 1: Euro Area

Economic Growth – Recent Developments

The euro area expanded marginally by 0.1 per cent in the third quarter of 2013 (Eurostat, 2013). Growth was supported primarily by developments in Germany, although most of the other core countries also recorded positive growth. Following nine consecutive quarters of contraction, real GDP in Spain expanded by 0.1 per cent. Meanwhile, France returned to negative growth, recording -0.1 per cent in Q3 compared with the previous quarter.

The components of euro area domestic demand all expanded, albeit modestly for the most part, during the third quarter of 2013. Private consumption in particular remained weak, expanding by just 0.1 per cent, giving little impetus to overall GDP. Investment expanded by 0.4 per cent, supported primarily by developments in Germany and the Netherlands. Somewhat unusually, changes to inventories were a significant contributor to GDP growth in the third quarter, reflecting in part a large build-up of stocks in France. The contribution from net exports to GDP growth

was negative in the latest quarterly data, with export growth very weak at just 0.2 per cent, reflecting the prevailing muted world trade conditions. Growth in imports of 1.0 per cent all but offset the combined weak positive growth in the other components.

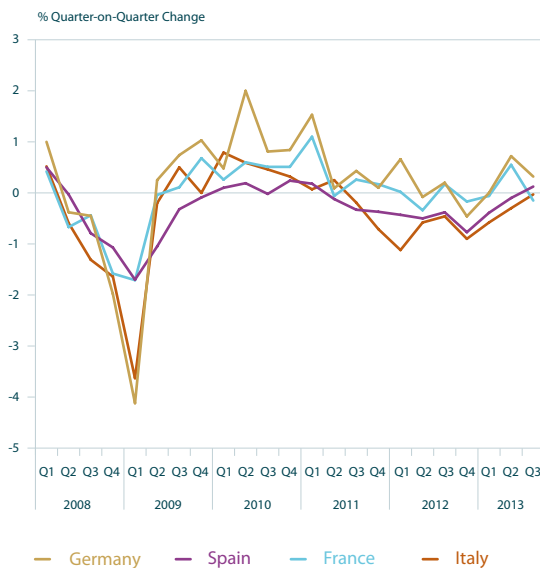
Monthly activity data were consistent with stable GDP during Q3 2013 and early data for the fourth quarter point towards very modest growth. Exports continue to expand, albeit mildly, recording growth for three consecutive months against a background of stabilising world demand. This trend is expected to underpin a modest expansion in industrial production during the final quarter of 2013.

Recent survey data continue to point to a slight pick-up in sentiment in the euro area, although the pace of improvement has decelerated somewhat. The EU Commission's Economic Sentiment Indicator (ESI) converged to its long-term average value in December having increased consistently in preceding months. Industrial confidence, in particular, now stands slightly above its long-term average value and reflects a more positive assessment of

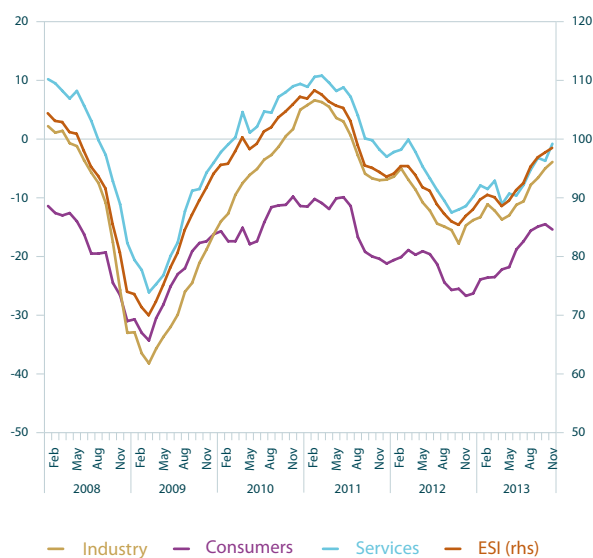
Table 2: Contributions of Expenditure Components to Quarterly Change in Euro Area GDP

	2012Q4	2013Q1	2013Q2	2013Q3
Consumption	-0.3	-0.1	0.1	0.0
Government	0.0	0.1	0.0	0.0
Investment	-0.2	-0.4	0.0	0.1
Inventories	-0.2	0.1	-0.1	0.3
Exports	-0.2	-0.4	1.0	0.1
Imports	0.4	0.5	-0.7	-0.4
GDP	-0.5	-0.2	0.3	0.1

Source: Eurostat.

Chart 4: Euro Area GDP Growth

Source: Thomson Reuters Datastream.

Chart 5: Economic Sentiment Indicator & Selected Components

Source: European Commission.

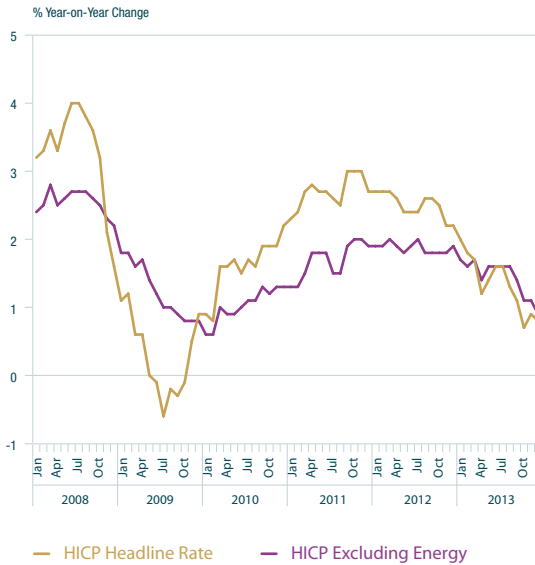
the current levels of overall order books. Euro area consumer confidence also increased in December, reversing the decline recorded in November and resuming the upward trend observed during the year. The November decline had been primarily impacted by a sharp fall in confidence in France, reflecting worsening views regarding respondents' future general economic situation and unemployment expectations. Recent PMI data indicate that the euro area remained in mild expansion territory during the last quarter of 2013. The composite output PMI stood at 52.1 in December 2013, reflecting strong readings in Germany and related to the manufacturing sector in particular, while data for France point to some renewed weakness.

The euro area unemployment rate has stabilised, albeit at high levels, during 2013 and stood at 12.1 per cent in November. The numbers unemployed increased during 2013 in most countries, with the notable exceptions of Germany and Ireland. Youth unemployment remains very high in the euro area, most notably in the southern periphery, while long-term unemployment also remains elevated.

Economic Growth – Outlook

Euro area GDP is expected to expand mildly during the fourth quarter, with the pace of growth picking up during 2014. A gradual recovery in domestic demand is expected

Chart 6: Euro Area Inflation

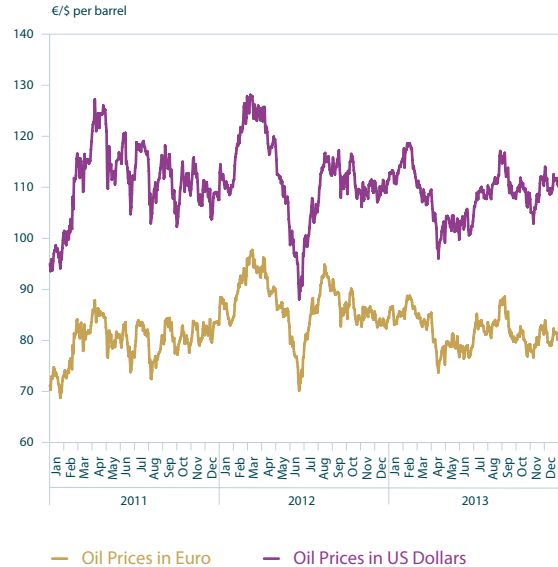


Source: Thomson Reuters Datastream.

to be the main driver of growth as the year progresses. Demand from the euro area's main trading partners is expected to pick up during 2014, allowing net exports to augment growth, albeit at a modest rate.

Looking ahead, improving sentiment, accommodative monetary stance and waning credit supply constraints are expected to underpin a pick-up in domestic demand. In particular, private investment may gain some momentum over the course of 2014 as export demand stimulates machinery and equipment investment. Government consumption, having been fairly flat over 2013 reflecting on-going fiscal consolidation efforts across the euro area, is due to pick up modestly in 2014. Consumption is also expected to gain some momentum as labour markets stabilise, fiscal effects wane and disposable income rises. Inflation is expected to remain low, supporting real incomes. On-going balance sheet adjustment in several countries, however, could continue to constrain household spending capacity. Imports are expected to pick up throughout the year in response to growing domestic demand and also in response to increased activity in exports with high import content. The net trade position is expected

Chart 7: Oil Prices – Brent Crude



Source: Thomson Reuters Datastream.

to contribute positively to GDP growth during 2014.

In their December *“Broad Macroeconomic Projections Exercise”*, ECB staff revised their forecast for 2014 up marginally to 1.1 per cent, while projecting 1.5 per cent growth in 2015. While adverse risks attached to the forecasts have abated somewhat, they are still judged to be on the downside. In particular, external factors including higher commodity prices, combined with any weakening in global trade, would adversely affect the outlook for 2014 and beyond.

Inflation – Recent Developments

Having averaged 2.4 per cent in 2012, euro area HICP inflation moderated considerably over the course of 2013, reaching a four-year low of 0.7 per cent year-on-year in October 2013. The average inflation rate in 2013 was 1.4 per cent. The principal driver of the lower headline inflation rates was a moderation in energy and food prices. In addition, a gradual fading of the impact of fiscal consolidation also contributed to the lower inflation rates. Core inflation also declined in 2013, reflecting weaker domestic demand and a persistent

negative output gap. HICP excluding food and energy, which averaged 1.5 per cent year-on-year in 2012, fell to 1.1 per cent on average in 2013. In December 2013 this measure of core inflation declined to 0.7 per cent, the lowest rate since February 2010.

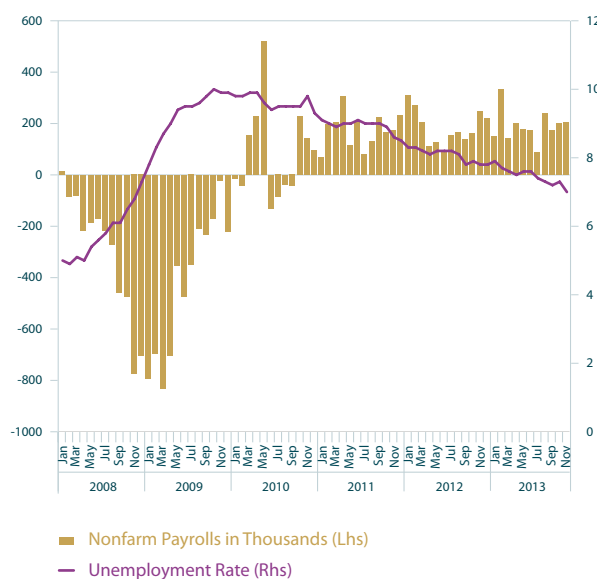
Turning to commodity price developments, Brent crude oil prices traded in a range of between \$100 and \$120 per barrel during 2013, as increased production in North America has generally been offset by reduced production in the Middle East. Meanwhile, global food prices have been relatively steady for some time, and in November stood around 4 per cent below their level a year previous, according to the United Nations FAO price index.

Indicators of future price pressures remain contained, with producer price inflation turning negative during late 2013. Producer price inflation (excluding construction and energy) was -1.4 per cent year-on-year in October. Forward-looking survey indicators, such as the PMI input prices and ESI producer price expectations, suggest that price pressures in the manufacturing sector remain subdued. Domestic price pressures also remain weak, as elevated unemployment rates and weak economic activity weigh on labour costs. The growth in total hourly labour costs declined to 1.0 per cent year-on-year in the third quarter, following 1.1 per cent in the previous quarter. Meanwhile, the growth in unit labour costs fell to 1.0 per cent, down from 1.2 per cent, reflecting a slight decrease in compensation per employee and a marginal increase in productivity.

Inflation – Outlook

Euro area inflation is expected to remain subdued in both 2014 and 2015. According to the December 2013 Eurosystem staff macroeconomic projections, annual HICP inflation for the euro area is expected to be 1.1 per cent in 2014 and 1.3 per cent in 2015. According to the ECB, the risks to this outlook are seen as broadly balanced. Upside risks pertain to higher than expected commodity prices and indirect taxes while downside risks relate to weaker than expected economic activity.

Chart 8: US Labour Market



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

Section 2: External Environment

United States

Real GDP increased at an annual rate of 4.1 per cent in the third quarter, up from 2.5 per cent in the second quarter. A strong rise in private inventories and private investment contributed most to GDP growth in Q3, followed by personal consumption expenditure. Government expenditures also contributed positively to GDP in the third quarter for the first time since Q3 2012.

Labour market conditions have improved in the course of the year. Non-form payrolls increased by a monthly average of 179,000 in 2013, despite an increase of just 74,000 in December. The unemployment rate fell to 6.7 per cent in December from 7.9 per cent at the beginning of 2013. However, labour force participation fell to a record low level according to the Survey of Households. The housing market has remained buoyant. Residential investment increased by 10.3 per cent year-on-year in the third quarter of 2013, after a 14.2 per cent increase in the second quarter. The latest data for housing starts showed an increase of almost 30 per cent. House prices as measured by the S&P/Case-Shiller 20 index

increased by an annual rate of 13.6 per cent in October.

Sentiment indicators relating to the fourth quarter are encouraging. In December, the US manufacturing PMI remained at high levels, with forward-looking sub-components such as new orders significantly up to 64.2. Consumer sentiment recovered in December from a three-month gradual decrease. The Thomson Reuters/University of Michigan's index of consumer sentiment increased significantly in December. Overall, economic growth in the US is expected to be more sustained in 2014, with the drag from fiscal austerity measures phasing out. The OECD is forecasting growth of 2.4 per cent for 2014, and 2.5 per cent for 2015.

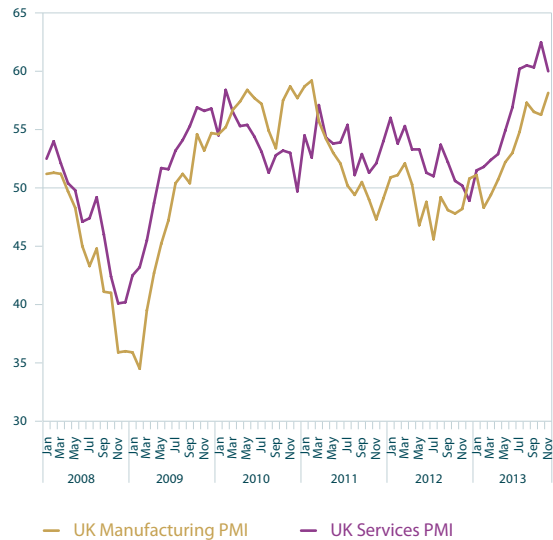
Due to a decline in energy prices, consumer price inflation increased for the first time in four months reaching an annual rate of 1.2 per cent in November, after 1.0 per cent in October. Excluding food and energy, inflation remained steady at 1.7 per cent for a third consecutive month. The Federal Open Market Committee (FOMC) at its latest meeting maintained the target range for the federal funds rate at 0 to 0.25 per cent. However, citing the gradual improvement on employment and labour conditions, the FOMC announced it would reduce the pace of its asset purchases. It will purchase additional agency mortgage-backed securities at a pace of \$35 billion per month, instead of 40 billion, and longer-term Treasury securities at a pace of \$40 billion per month, instead of 45 billion.

The federal government's annual deficit for fiscal year 2013 (ending September 30th) was the smallest since 2008. It reached \$680 billion or 4.1 per cent of GDP, compared to \$1.4 trillion or 10.0 per cent of GDP in 2009.

United Kingdom

According to the Office of National Statistics' most recent estimate, the UK economy grew by 0.8 per cent during the third quarter of 2013. The expansion in economic activity was primarily due to higher levels of private consumption, government consumption, and an increase in gross capital formation. Net exports acted as a drag on growth, falling by 2.4 per cent, the largest decline since the second quarter of 2011. The labour market

Chart 9: PMI Indicators for the UK



Source: Markit.

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

situation has continued to improve gradually, with employment growth picking up in recent months. The unemployment rate fell by 0.1 percentage points to 7.6 per cent at the end of Q3. Buoyed by recent policy measures, both activity and price indicators for the housing market have picked up further and credit growth has shown signs of recovering.

Sentiment indicators relating to the fourth quarter point to a further expansion in output. With regard to the outlook for growth, both the manufacturing and services PMIs increased further during November to 58.4 and 60, respectively. The PMI for construction continued its upward trend and was at 62.6, the highest level since the late 1990s. The increase was primarily driven by the housing component. The OECD has forecast UK GDP growth to be 1.4 per cent for 2013 as a whole, rising to 2.4 per cent for 2014 (Table 1).

The consumer price index of annual inflation slowed from 2.2 per cent in October to 2.1 per cent in November. The largest contribution to the latest decrease in inflation came from food and utilities and this was partially offset by higher prices in transport along with recreation and culture. During the fourth quarter, no changes were made by the Bank of England's Monetary Policy Committee (MPC) to the bank

rate, which continues to remain at 0.5 per cent. In addition, the stock of assets purchased by the issuance of reserves remained at £375 billion during the fourth quarter. Net lending by banks participating in the Bank of England's Funding for Lending Scheme shows that participating banks made drawdowns of £5.5 billion during the third quarter. This brings total drawdowns under the scheme to date to £23.1 billion. Net lending by participants was £5.8 billion during the quarter, representing the largest net lending flow since the scheme was launched in July 2012.

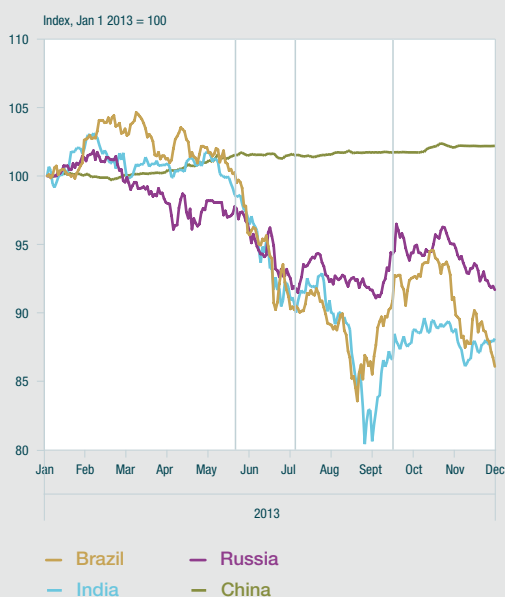
At its December meeting, the MPC considered that neither of the price stability "knockout" conditions that would override its forward guidance policy announced in August had been breached.¹ While there are some signs that inflation expectations have marginally increased, overall medium-term inflation expectations continue to be sufficiently well-anchored. At its November meeting the Financial Policy Committee (FPC) considered that the stance of monetary policy does not pose a significant threat to financial stability that cannot be mitigated by policy actions available to the FPC.

Box A: The International Transmission of Monetary Policy

By Mary Everett, Monetary Policy Division

Since the onset of the global financial crisis, central banks in advanced economies, including the US Federal Reserve, have sought to strengthen the recovery of their economies through accommodative monetary policy. As a result, significant volumes of capital have flowed into emerging economies as international investors sought higher returns. On May 22nd US Federal Reserve Chairman Bernanke announced that improvements in the US economy may prompt the Federal Open Market Committee (FOMC) to begin tapering its asset purchasing programme before end-2013. This announcement led to a revision of interest rate expectations and an abrupt reversal of capital flows from many large emerging economies, resulting in a depreciation of their domestic currencies vis-à-vis the US dollar (Chart 1) and an upward pressure on sovereign bond yields of advanced economies (see Chart 2).

Box A Chart 1: Emerging Markets Exchange Rates vis-à-vis the US Dollar



Source: Thomson Reuters Datastream.

Note: The vertical lines indicate May 22, July 4 and September 18 respectively.

Box A Chart 2: 10-year Sovereign Bond Yields



Source: Thomson Reuters Datastream.

Note: The vertical lines indicate May 22, July 4 and September 18 respectively.

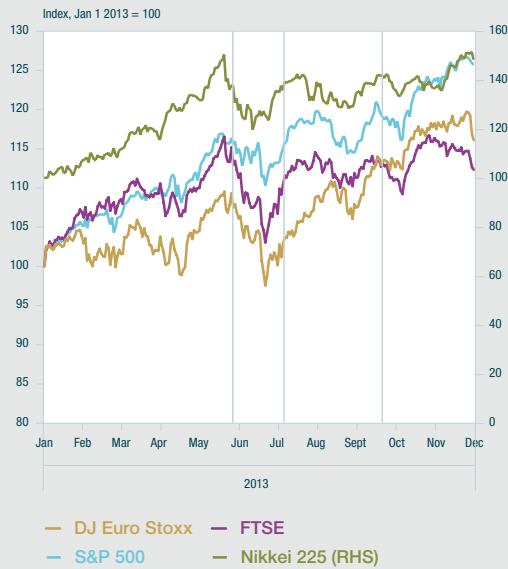
¹ The three "knockout" conditions in the forward guidance policy of the Bank of England relate to: the likelihood that inflation will not exceed 2.5 per cent 18 to 24 months ahead; that medium-term expectations are sufficiently well anchored; and the impact of the monetary policy stance on financial stability as judged by the Bank of England's Financial Policy Committee.

Box A: The International Transmission of Monetary Policy

By Mary Everett, Monetary Policy Division

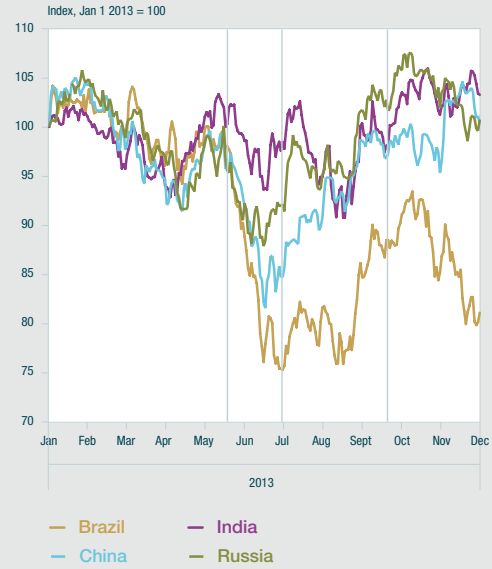
Other asset categories were also affected, with equity values declining sharply across both advanced economies and emerging markets at this time (Chart 3). The negative effects on equity prices were, however, much more severe for emerging economies.

Box A Chart 3a: Equity Indices in Advanced Economies



Source: Thomson Reuters Datastream.
Note: The vertical lines indicate May 22, July 4 and September 18 respectively.

Box A Chart 3b: Equities Indices in Emerging Economies



Source: Thomson Reuters Datastream.
Note: The vertical lines indicate May 22, July 4 and September 18 respectively.

The forward guidance policies established by the Federal Reserve, the ECB and the Bank of England in early July aimed to highlight to market participants that the accommodative monetary policy stance would remain in place until positive economic fundamentals had stabilised. While these announcements stemmed the sell-off of advanced economies' assets, the outflows from emerging economies' equity and bond markets continued as international investors persisted in their retrenchment from these markets. The reaction of international investors to the announcement to delay tapering provided a partial rebound for advanced economies and some emerging markets' equities during the fourth quarter of 2013 (see Chart 3).

On December 18, the FOMC announced its intention to commence tapering its monthly purchases of assets from \$85 billion to \$75 billion, starting in January 2014. In the immediate aftermath of this announcement global equity markets reacted positively as the implementation of tapering confirms improvements in the US economy and they welcomed the FOMC's reinforcement of its forward guidance policy of low interest rates.

The responses to the proposed shifts in the monetary policy stance have provoked debate among academics and policymakers as to which mechanisms underpin the international transmission of monetary policy. The International policy "trilemma" is the standard textbook macroeconomic theory that can explain the international transmission of monetary policy, however, a recent strand of literature argues that this has been reduced to a "dilemma".

Box A: The International Transmission of Monetary Policy*By Mary Everett, Monetary Policy Division*

The International Policy “trilemma”: Policy makers cannot simultaneously (1) fix exchange rates, (2) permit free capital mobility and (3) maintain autonomous monetary policy (Obstfeld et al 2005).¹ This “trilemma” restricts countries to two of these policies. For example, an open economy with free movement of capital and a fixed exchange rate cannot have independent control over its monetary policy decision making. When such an economy experiences capital outflows that exert downward pressure on its currency this economy must increase its policy interest rate in order to maintain its fixed exchange rate. Evidence of this “trilemma” is, therefore, reflected in the activities of many emerging economies that actively intervene in their foreign exchange rate markets to offset the negative effects of volatile capital inflows and outflows.

In this context, during the recent global financial market turbulence, emerging market policymakers were faced with three main policy actions to avoid significant disruption to both their real and financial economies, namely foreign exchange intervention, raising policy rates and/or imposing capital controls. The policy actions implemented diverged across emerging economies. While exchange rate depreciation can be beneficial, in terms of increased exports, large swings in exchange rates can cause disruption. Brazil and Turkey chose to intervene in their foreign exchange markets to stabilise their domestic currencies and stem the outflow of capital. To minimise the disruption of volatile capital flows, India imposed a range of capital controls, including taxes on commodities, i.e., silver and gold imports. Additionally, monetary policy was tightened in India, Brazil and Indonesia to avoid the build-up of inflationary pressures.

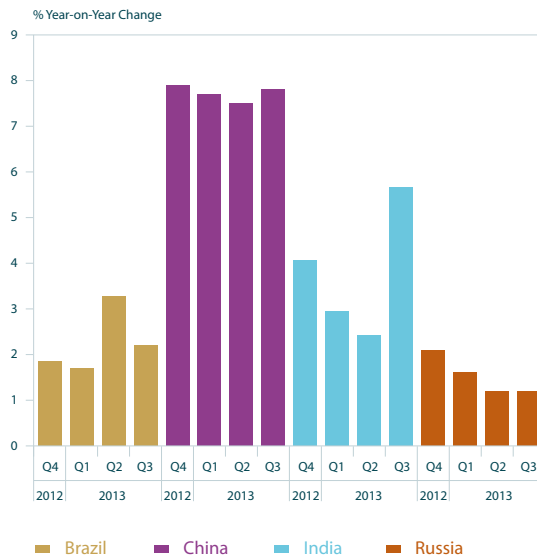
The international policy “dilemma”: A recent paper presented at Jackson Hole by H el ene Rey asserts that the international policy “trilemma” has been reduced to a “dilemma”.² This approach suggests that irrespective of a country’s exchange rate regime, the channel for the international transmission of monetary policy is the global financial cycle, reflected in the global co-movement of asset prices. Rey (2013) considers that a key determinant of the global financial cycle is US monetary policy. An easing of US monetary policy leads to leverage and credit growth in the international financial system and also increases financial market participants’ appetite for risky assets. The reverse effect takes place when monetary policy tightens leading to deleveraging, credit tightening, and falling asset prices correlated with capital outflows. Rey (2013) argues that the transmission of US monetary policy through the global financial cycle, therefore, concentrates the “trilemma” into a “dilemma”, i.e., independent monetary policy and capital flows. Regardless of a country’s exchange rate regime, therefore, independent control over domestic monetary policy is possible *only if* capital flows are controlled. To summarise, the global financial cycle, characterised by the global correlation of asset prices and capital flows across both advanced and emerging economies, overrides exchange rate regimes and transmits US monetary policy internationally.

While the debate continues as to whether the “trilemma” or “dilemma” best explains the international transmission of monetary policy, it is apparent that the implementation of the exit from unconventional monetary policy by the US poses challenges for emerging economies, particularly for those that experienced a surge in capital inflows during the accommodative period. The magnitude of disruption for emerging economies will depend on their macroeconomic imbalances. Countries with large current account deficits and substantial inflation will be more vulnerable to a retrenchment in capital flows. It is possible the bulk of adjustment in global financial markets has already taken place. The pace and extent of tapering commencing in January 2014 may, however, continue to affect global financial markets during 2014.

1 Obstfeld, Maurice, Jay C. Shambaugh, and Alan M. Taylor. 2005. “The Trilemma in History: Tradeoffs among Exchange Rates, Monetary Policies, and Capital Mobility.” *Review of Economics and Statistics* 87 (August): 423–38.

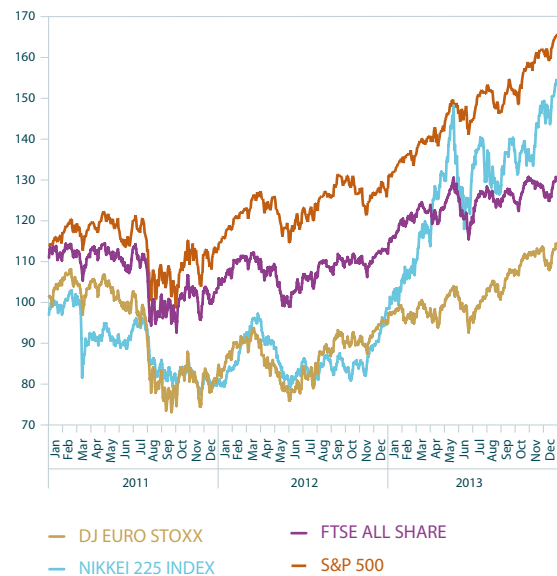
2 Rey, H el ene (2013), “Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence”, manuscript for 2013 Jackson Hole Meeting (August).

Chart 10: BRIC GDP Growth Rates



Source: Thomson Reuters Datastream.

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



Source: Thomson Reuters Datastream.

Japan

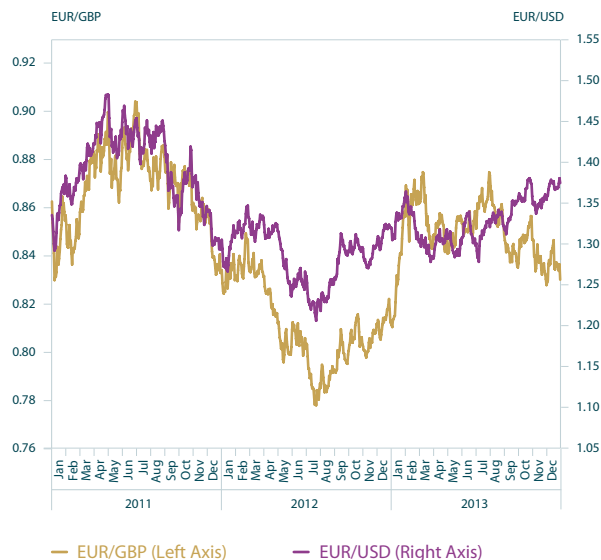
According to the Government's most recent estimate, real GDP expanded by 0.3 per cent quarter-on-quarter or 1.1 per cent on an annualised basis during the third quarter of 2013. The increase in output was primarily driven by private and public consumption. Residential and public investment also added to higher output. Sentiment data relating to the fourth quarter point to continued expansion in output, largely driven by the private sector. The manufacturing PMI increased from 54.2 in October to 55.1 in November. The OECD projects the GDP outturn will be 1.8 per cent for 2013 falling back to 1.5 for 2014 (Table 1). Looking ahead, economic activity is expected to strengthen in the first quarter of 2014, supported by a private consumption in advance of an increase in consumption tax scheduled for April 2014.

Consumer prices rose in October by 1.1 per cent on the corresponding month of the previous year, unchanged from the previous month. Energy prices increased by nearly 6 per cent in October and were in part attributable to a weaker yen which drove up the import

costs of oil and gas. Excluding energy and food, core annual inflation rose by 0.9 per cent in October, which was the highest level since October 2008. Looking ahead, the planned consumption tax increase in April should provide a temporary boost to inflation, bringing it closer to the Bank of Japan's target inflation rate of 2.0 per cent based on the consumer price index (CPI).

The monetary base was up 52.5 per cent on an annualised basis in November, compared with 45.8 per cent in October. With regard to asset purchases, the asset categories that comprise the Bank of Japan's purchases, include Japanese Government bonds, exchange-traded funds (ETFs) and Japan real estate investment trusts (J-REITs) and commercial paper and corporate bonds. The Bank of Japan has stated it will continue its asset purchase programme until the consumer price inflation reached a stable 2 per cent. At its November meeting, the Bank of Japan left monetary policy unchanged while reiterating it felt the economy continues to recover with an expectation that the CPI is likely to increase gradually.

Chart 12: Euro Exchange Rates



Source: Thomson Reuters Datastream.

BRIC Economies

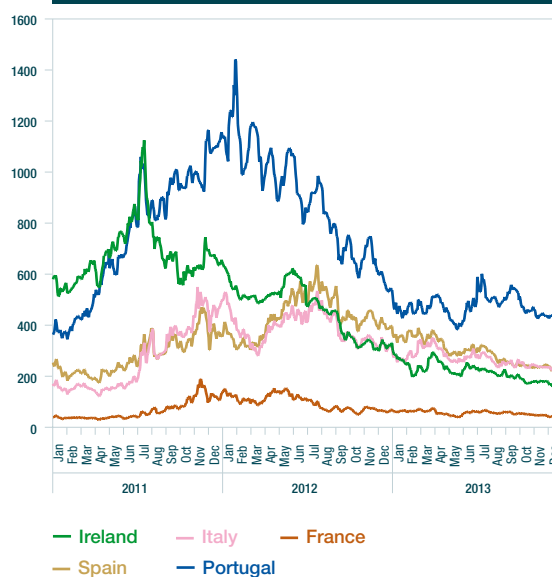
Emerging economy performance picked up marginally during the third quarter, although the momentum of growth has slowed for Brazil and China. The turbulence in global financial markets during the third quarter due to uncertainty regarding the implementation of tapering by the US Federal Reserve led to outflows of portfolio investment and currency depreciation across a number of major emerging markets. The announcement by the Federal Open Markets Committee (FOMC) to delay tapering in September stabilised financial conditions for a number of emerging markets (see Box A for a detailed discussion on these developments). The upturn in economic expansion is, however, expected to be muted given underlying structural issues for a number of emerging economies that continue to exert a drag on growth.

In Brazil, real GDP growth slowed further from 3.3 per cent in the second quarter to 2.2 per cent year-on-year. Inflation remains above the Banco Central do Brazil's target of 4.5 per cent. It reached 5.9 per cent in October, an increase of 0.4 per cent from October 2012

due to increased food and beverages and services sector inflation. The main monetary policy rate, the selic, was increased in November to 10 per cent.

In China real GDP growth increased marginally from an annualised 7.5 per cent in the second quarter to 7.8 per cent in the third quarter, mainly as a result of government efforts to stabilise growth with minor stimulus measures. The contribution from investment continued to display strength with buoyant housing market conditions continuing to support activity. Sentiment data relating to the fourth quarter point to a continuing expansion in output. The manufacturing PMI in November remained unchanged from 51.4 in October but fell in December. New export orders fell for the first time in four months. At end-November credit and loan growth in local and foreign currency increased by 14.2 per cent year-on-year, partly reflecting increased capital inflows. Despite the recent rebound in the growth momentum, inflationary pressures remain contained with the annual CPI increasing by 3 per cent, a marginal decline from the 3.1 per cent and 3.2 per cent recorded in September and October, respectively.

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



Source: Thomson Reuters Datastream

In India GDP growth rose from 2.4 per cent year-on-year in the second quarter to 5.6 per cent in the third quarter. An improvement in export growth was behind the expansion. Inflation, as measured by the wholesale price index, increased to 7.5 per cent in November, up from 7.0 per cent in October. This was primarily driven by increases in food prices. At its December meeting India's central bank kept its key interest rate unchanged at 7.75 per cent and its deposit rate at 6.75 per cent. The cash reserve ratio was kept unchanged as well, at 4 per cent, and the marginal standing facility was also left unchanged at 8.75 per cent.

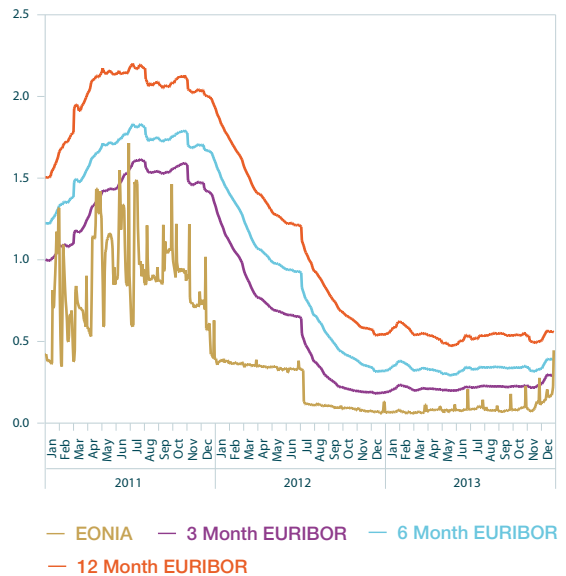
In Russia GDP growth remained stable at 1.2 per cent during the third quarter. Annual CPI inflation amounted to 6.5 per cent during November, mainly due to increased prices of fruit and vegetables and some animal products and remains above the central bank's target. The Bank of Russia left its main interest rates unchanged for the 15th consecutive month in December.

Section 3: Financial Markets

Financial Market Developments

Global market sentiment remained broadly unchanged in the fourth quarter of 2013. Developments were driven mainly by mixed economic data releases in the United States and the euro area as well as expectations of, and subsequent reaction to, monetary policy actions taken by the major central banks. In the euro area, mixed data releases in November, in particular a lower-than-expected HICP inflation figure for October, were followed by a weak euro area GDP release in early December which dampened market sentiment. On November 7, the ECB's Governing Council cut its main refinancing rate by 25 basis points to 0.25 per cent. The Governing Council also reaffirmed its forward guidance stance, while stating it will continue to conduct its main refinancing operations as fixed rate tender procedures with full allotment until at least mid-2015. On 18 December, the Federal Reserve's

Chart 14: Selected Euro Area Money Market Interest Rates



Source: Thomson Reuters Datastream.

FOMC decided to begin tapering by reducing its asset purchases by \$10 billion to \$75 billion a month, while reinforcing its forward guidance of low interest rates “well past the time that the unemployment rate declines below 6.5 per cent”. Despite the announcement of tapering, global equity indices recorded gains over the quarter. US and AAA-rated euro area sovereign bond yields rose in the period while equivalent yields fell in the stressed segments of the euro area government bond market.

Equity Markets

In the fourth quarter, global equity markets saw a continuation of their upward paths which has characterised developments in 2013. After strong price increases in September, equity gains were temporarily reversed in October owing to the US debt ceiling deadlock and the partial government shutdown. Data releases continued to heighten expectations of the Federal Reserve's decision concerning the asset purchase programme. These concerns were assuaged by FOMC members' communications that no time frame had been

set for the tapering of the Federal Reserve's asset purchases. However, on 18 December, the Federal Reserve's FOMC decided to reduce the rate of its securities purchases by \$10 billion a month while reiterating its forward guidance of low interest rates. Market reaction to this announcement was positive with the S&P 500 index recording a 9.9 per cent increase by the end of the quarter. In the euro area, mixed data releases in November and a weak euro area GDP release in early December dampened sentiment but did not reverse the positive trend displayed by bank equity prices since summer 2013. The DJ Euro Stoxx index ended the quarter 7.2 per cent higher. The NIKKEI 225 index also rose during the period by 12.7 per cent while the FTSE index saw growth of 4.8 per cent in the fourth quarter.

Foreign Exchange Developments

In the fourth quarter of 2013, the euro appreciated overall against the currencies of most of the euro area's important trading partners. On 30 December, the nominal effective exchange rate of the euro, as measured against 21 other currencies, stood 1.9 per cent above its level at the end of the third quarter of 2013 and 5.1 per cent above the end-2012 level. Exchange rate movements were primarily driven by developments in interest rate expectations, as well as adjustments in market expectations about the euro area economic outlook relative to that of other major economies. The euro continued to appreciate against the US Dollar in the fourth quarter following a strong appreciation in September. The euro stood above \$1.37 in late December. Against sterling, the euro appreciated in October to above £0.85 on 29 October, before depreciating in November and December to end the year at close to £0.83.

Sovereign Debt Markets

Sovereign yields fell in the stressed segments of the euro area government bond market in the fourth quarter of 2013. These countries

continued to benefit from a generally-improved economic outlook and some positive revisions to their credit rating outlooks. The government bond yield spread vis-à-vis Germany fell by around 35, 50, 100 and 105 basis points in Spain, Italy, Portugal and Greece respectively. Further to these developments, the spread in Ireland fell around 60 basis points over the quarter as the country successfully exited its bailout programme in December.

Over the review period, euro area AAA-rated long-term government bond yields, in general, increased. Yields were influenced by developments in the United States and somewhat mixed data releases in the euro area. During October, bond market yields increased on both sides of the Atlantic given the uncertainty surrounding the US debt ceiling discussions. With an agreement eventually reached in mid-October, euro area AAA-rated bond yields fell before levelling off in November. After the weaker-than-expected GDP data release in early December, AAA-rated long-term euro area government bond yields jumped by around 10 basis points to levels at or above those seen at the start of the quarter. In late November, S&P cut its credit rating for the Netherlands to AA+ from AAA while in late December it announced the same cut for the EU as a whole. However, these actions had little immediate effect on bond yields.

While long-term government bond yields in the US and the euro area showed somewhat similar developments over October, they tended to diverge in November, when US government bond yields edged up while their AAA-rated euro area counterparts levelled off. In November, US long-term bond yields exhibited somewhat higher volatility, reflecting conflicting expectations surrounding when QE tapering would start. After the FOMC tapering decision of 18 December, US sovereign yields rose, its 10-year yield eventually ending 2013 at 3.0 per cent, its highest value since July 2011.

Money Markets

Money market interest rates were broadly stable in October and early-November 2013 however, since mid-November, money market rates increased as year-end effects began to take hold. Shorter maturities including the EONIA increased due to the levels of excess liquidity declining and higher demand for precautionary liquidity buffers arising from balance sheet concerns as year-end approached. At longer maturities, money market interest rates had declined following the ECB Governing Council's decisions of 7 November to decrease the MRO rate to 25 basis points, reaffirm its forward guidance stance, and continue its main refinancing operations as fixed rate tender procedures with full allotment until at least mid-2015. However, as December progressed, rates on longer maturities also experienced temporary upward pressure due to year-end effects.

EU-IMF Financial Assistance Programme – Twelfth Review

Overview

The twelfth and final review mission of the European Union/International Monetary Fund (EU/IMF) Financial Assistance Programme for Ireland took place from 29 October to 7 November 2013. A range of issues was discussed, with a focus on remaining challenges and the conclusion of the Programme, which ended on 15 December 2013. Reflecting the strong delivery of programme commitments during the third quarter and the continued steadfast implementation of measures during the fourth quarter, the External Partners remarked at the end of the mission that “Ireland’s programme remains on track in the context of the nascent economic recovery”¹. They also noted that “Budget outturns remained on track through October”, but cautioned that spending control must be maintained. On the financial side, ongoing repair was acknowledged, though the high share of non-performing loans and sluggish lending was noted.

Discussions during the review mission focused on the following issues:

- The macroeconomic situation and outlook
- Progress by lenders in addressing non-performing loans
- Banks’ future profitability
- The Balance Sheet Assessment (BSA) workstreams
- Budgetary outturns and Budget 2014 measures
- Job activation, healthcare and other structural reforms
- Exit from the Programme

Compliance with Financial Sector Conditions (Q3 2013)

Work to advance the financial sector reform agenda continued during the third quarter of 2013. The main actions are summarised below.

During the third quarter, the Central Bank (‘the Bank’) continued to monitor and report on the Prudential Capital Assessment Review (PCAR²) banks’ strategies for resolving non-performing mortgage loan arrears. Progress against Key Performance Indicators (KPIs) and bank-specific targets was assessed, while the roll-out of the Mortgage Arrears Resolution Target (MART) framework continued. A target for the conclusion of sustainable solutions by end-2013 of 15 per cent of mortgage loans in arrears for more than 90 days was announced in September, as were targets for the number of solutions to be proposed (70 per cent), and concluded (25 per cent), by the end of the first quarter of 2014. An audit of the Q2 2013 proposed solutions target³, including an assessment of the sustainability of the solutions, also got underway.

The Insolvency Service of Ireland (ISI), which is now fully operational, began accepting applications for the three new debt arrangements in September. Six specialist judges have been appointed to deal specifically with personal insolvency cases.

Turning to the resolution of Small and Medium sized Enterprises’ (SMEs) distressed loans, the Bank continued to supervise banks’ progress in addressing this situation. The Bank is closely monitoring and assessing the relevant banks’ progress towards the (non-public) restructuring targets that have been set, as well as

¹ <http://www.imf.org/external/np/sec/pr/2013/pr13432.htm>

² Bank of Ireland, AIB and Permanent TSB.

³ Interim targets of 20 per cent and 30 per cent for proposed solutions by end-June and end-September 2013, respectively, were announced in March 2013, as was an end-2013 proposed solutions target of 50 per cent.

enhancing the KPIs. It will also continue to undertake on-site reviews focused on operational effectiveness and on assessing the durability of the solutions. Long-term debt resolution strategies for SMEs are likely to be complex and take significant time to devise and implement.

The point-in-time assessment of the PCAR banks' balance sheets was advanced during the third quarter. This workstream comprised an Asset Quality Review (AQR), a review of the appropriateness of banks' risk weighted assets, a Data Integrity Validation (DIV) and a model performance review. Broad agreement was reached on the methodological aspects of the exercise, and independent third party loan file reviewers and an independent assessor were appointed. The Bank also set out a detailed roadmap for the completion of the BSA, and engaged with the External Partners on a regular basis on progress, methodology, inputs and initial outputs.

On the funding side, further exploration of funding options to lower the cost of banks' tracker mortgage portfolios was undertaken during the third quarter. A detailed technical report on potential options was provided to the External Partners at the end of September.

The Bank also undertook a forward-looking analysis of operating profits for the PCAR banks to end 2015 (structural benchmark).

The normal monitoring and reporting on banks' deleveraging, based on existing nominal targets and the run-off of non-core assets, continued during the third quarter.

On the credit union front, following on from the commencement of some sections of the Credit Union and Co-operation with Overseas Regulators Act 2012 in August, the majority of the sections containing governance and prudential requirements were commenced in October⁴. In addition, the Bank published a

Credit Union Handbook⁵ in September, to assist credit unions with the implementation of the new regulatory framework. This contains, amongst other things, details on the Fitness and Probity regime for credit unions, and the new governance and prudential requirements applicable under the Credit Union Act 1997.

A three-month pilot scheme, facilitated by the Bank, looking at the restructuring of distressed consumer debt across multiple lenders also began to process individual applications in September. The aim of the scheme is to enhance cooperation between lenders of secured and unsecured debt, so as to resolve the situation at an early stage without the borrower having to enter the full insolvency process.

The Central Bank (Supervision and Enforcement) Act 2013 was signed into law in July⁶. This Act provides the Bank with additional supervisory and enforcement powers.

The IMF undertook a separate mission to Dublin during the third quarter as part of its assessment of Ireland's Observance of Standards and Codes (ROSC) on both *Basel Committee Core Principles for Effective Banking Supervision* and *IOSCO Objectives and Principles of Securities Regulation*. The IMF will issue its official findings and recommendations to the Bank in due course.

Compliance with Financial Sector Conditions (Q4 2013)

The financial sector reforms that took place during the fourth quarter are briefly detailed below.

The Bank continued to monitor lenders' performance under the MART framework, and published the outcome of the Q2 and Q3 2013 targets in November⁷. This confirmed that the banks had reported sufficient proposed

⁴ The requirements are being inserted into the Credit Union Act 1997.

⁵ Credit Union Handbook (<http://www.centralbank.ie/regulation/industry-sectors/credit-unions/Pages/Credit%20Union%20Handbook.aspx>)

⁶ All sections, aside from Section 72, commenced with effect from 1 August 2013.

⁷ <http://www.centralbank.ie/press-area/press-releases/Pages/CentralBankpublishesoutcomeofMortgageArrears.aspx>

solutions to meet the targets, though the audit of the Q2 figures identified a number of issues that will need to be addressed in order to ensure that solutions are sustainable in the long term. In December, the Bank announced proposed and concluded targets for end-June 2014. These require the banks to have proposed sustainable solutions to 75 per cent of customers in arrears of over 90 days by the end of June, and to have concluded solutions in 35 per cent of cases.

The expert group examining issues relating to the effectiveness of repossession arrangements - such as the length, predictability and cost of proceedings - reported in December. On the buy-to-let side, an examination of the possibility of introducing a fast-track procedure on plenary proceedings (building on the expedited proceedings in the Commercial Court), was completed by the end of October. While this was not considered necessary at the time, the existing system will be kept under review, and such procedures remain an option for consideration depending on future developments.

In the area of SME restructuring, Company Law and the legal framework surrounding examinership was reviewed, and in early October legislation was expedited. When the Companies (Miscellaneous Provisions) Bill 2012 is enacted, small companies will be allowed to apply to the Circuit Court, rather than the High Court, for examinership.

Work on the BSA intensified in the fourth quarter, as did engagement with the External Partners on this workstream. A preliminary report (structural benchmark) was provided at the end of October and the final report at end-November. The BSA was independently assessed as having followed an appropriate, conservative and robust process. The results of the review were communicated to the banks to inform their financial planning.

Also, on the capital front, the Bank completed an analysis of current eligible

regulatory capital under Basel III/the Capital Requirements Directive (CRD IV) by the end of October.

Other work completed in the fourth quarter included a comparative assessment of banks' fee income, along with an external review of the regulation of bank fees. Final assessments/reports on bank deleveraging, liquidity and funding requirements, and the financial supervisory process, were also prepared.

Lastly, steps to establish a Central Credit Register are continuing. Following the enactment of the Credit Reporting Act 2013 in December, a procurement process has commenced.

Compliance with Fiscal Targets

Further progress was made on the fiscal side in the third and fourth quarters of 2013.

The quantitative targets for the third quarter were achieved. The adjusted cumulative end-September 2013 exchequer primary deficit target was met by a margin, as was the ceiling on the stock of central government net debt. In addition, the continuous performance criterion on the non-accumulation of external payment arrears was observed. Taken together with available data for the fourth quarter, it is expected that the general government deficit target for 2013 (7.5 per cent of GDP) will also be met with a margin.

Further steps to strengthen the institutional fiscal framework have been taken. First, the mandate of the Irish Fiscal Advisory Council (IFAC) was amended to include the ex-ante endorsement of the macroeconomic forecasts underpinning future budgets and stability programmes. To support this arrangement, a memorandum of understanding was agreed between the IFAC and the Department of Finance⁸. The macroeconomic projections prepared by the Department of Finance for Budget 2014 were subsequently endorsed by the IFAC as within the range of appropriate projections⁹.

⁸ <http://www.fiscalcouncil.ie/wp-content/uploads/2011/07/MoU.pdf>

⁹ http://www.fiscalcouncil.ie/wp-content/uploads/2012/08/IFAC_Endorsletter.pdf. The Council's Fiscal Assessment Report, published on 22 November 2013, contains an assessment of the macroeconomic projections and a detailed discussion of the endorsement process.

Second, following on from the Ministers and Secretaries (Amendment) Act 2013, enacted in July, the Department of Public Expenditure and Reform published a Circular in September setting out the rules and procedures for the three-year ceilings for Exchequer voted current expenditure¹⁰.

In conjunction with the new EU fiscal governance structure, Budget 2014 was brought forward to 15 October 2013 (structural benchmark). Consolidation measures of €2.5 billion (€3.1 billion when additional resources and savings are factored in) were announced, with the aim of reducing the deficit to 4.8 per cent of GDP in 2014 (below the 5.1 per cent of GDP requirement under the Excessive Deficit Procedure (EDP)). A primary balance or a small surplus is also being targeted for 2014. Commenting on the Budget, the External Partners noted that “to reach these goals, Ireland’s record of strong budget implementation needs to continue”, with delivery of the proposed savings in health expenditure requiring particular attention¹¹.

Reforms of the health sector continued, with an eHealth Strategy published in December. This provides an action plan for the implementation of eHealth systems. Work was also carried out in the field of generic prescribing, price transparency and high level annual targets for increasing the share of generic drug usage in the medium term. Building on a draft policy paper on Hospital Financing published in February 2013, which outlined a new funding model focused on greater fairness, efficiency, transparency and equity¹², a readiness assessment report was prepared for the Department of Health and the Health Service Executive (HSE). In addition, a Health Identifiers Bill was published in December¹³.

Compliance with Structural Reforms

The structural reform agenda was also advanced in the third and fourth quarters of 2013.

On the labour market front, an evaluation of the employment impact of the 2012 and 2013 Action Plans for Jobs was completed.

Regarding activation, plans to redeploy and train case managers are proceeding, with a number of public service staff redeployed by the end of 2013, and more expected this year. Targets for engaging the long-term unemployed in group sessions (15,000 per quarter) and regular one-on-one interviews (an additional 10,000 per quarter) were set, and became effective in the fourth quarter of 2013. These targets will be reviewed as the number of redeployed and trained case workers increases. In addition, a model enabling activation services to be contracted out to private providers is under development (a tender request issued in December). Two reviews – one to ensure that the sanctions system is providing incentives to the unemployed to participate in activation and training schemes, and one looking at FAS Further Education and Training (FET) participants’ allowances/welfare payments – were also undertaken (by end-October). Other work included the development of a clear system of cooperation between Intreo Offices and the Education and Training Boards.

Turning to the SME sector, the Credit Review Office (CRO) published its most recent report in September (for Q3 2013), while Budget 2014 provided for an increase in the threshold for SME loan appeals to the CRO from €500,000 to €3 million. The SME State Bodies Group

¹⁰ <http://circulars.gov.ie/pdf/circular/per/2013/15.pdf>

¹¹ <http://www.imf.org/external/np/sec/pr/2013/pr13432.htm>

¹² http://www.dohc.ie/publications/pdf/MoneyFollowsthePatient_HFPP.pdf?direct=1

¹³ This legislation allows for the introduction of universal and unique health identifiers, conforming with data protection law, and for the introduction of full ePrescription.

(SBG) continued to meet regularly, and the Government is developing a comprehensive communications strategy to increase awareness of the range of non-bank financing supports to SMEs, including the revised Credit Guarantee Scheme¹⁴. Other support is being provided to the sector by the National Pension Reserve Fund (NPRF), through the three new SME funds¹⁵.

Work in other key areas continued, including water services reform and the sale of state assets in the energy sector. The Legal Services Regulatory Bill is expected to advance further in the coming months. When enacted, this should help reduce the cost of legal services.

EU/IMF Loan Disbursements to Ireland

The nominal amount of loans under the EU/IMF Financial Assistance Programme, as of end-December 2013, stood at €67.5 billion (the net euro amount received by the Exchequer was €66.8 billion, after adjustment for below par issuance, deduction of a prepaid margin, and the effect of foreign exchange transactions). Both the IMF and the EU completed their approval processes for the twelfth review in December, which allowed for the final tranche of Programme funding to be released. The last IMF disbursement of €0.6 billion took place in December. With the disbursement of the final €0.8 billion from the European Financial Stability Mechanism (EFSM) - due in Q1 2014 - all of the available external Programme funding will have been drawn down.

Programme Exit

In November, the Government announced its decision to exit the Programme as planned, without a pre-arranged precautionary credit facility. In the accompanying statement¹⁶, it noted that the exit decision was informed by a

number of factors, including favourable market and sovereign conditions towards Ireland, the fact that the public finances are in line with the EDP targets and cash reserves are significant, and signs that the general economic position in Ireland and abroad has improved in recent months. Ireland's EU/IMF Programme officially ended on 15 December 2013.

Post-Programme Environment

Ireland will be subject to post-programme monitoring until the bulk of the EU/IMF Programme loans has been repaid. Such monitoring is standard procedure under IMF programmes and involves missions and reports twice a year. The rationale behind post-programme surveillance is to monitor and assess Ireland's capacity to repay its loan.

As part of the new governance framework, the EU will also conduct post-programme surveillance. Moreover, following the ending of the Programme, Ireland will go back into the various EU processes such as the European Semester. Ireland remains subject to all of the terms and conditions of the Stability and Growth Pact beyond 2015, which require continued fiscal prudence and structural improvement over the medium-term.

In December, the Government also published a Medium-Term Economic Strategy¹⁷ to underpin economic policy out to 2020. This focuses on fundamental policy areas such as education and training, labour market activation, access to credit, and competition and budgetary policy. It is intended to provide an overarching Government strategy, to which other sectoral and horizontal policies and strategies will be aligned.

¹⁴ This Scheme was reviewed to identify and address issues around its initial low take-up.

¹⁵ The Restructuring Fund, Turnaround Fund and Credit Fund. These long-term funds, which have now been launched, will provide equity, credit and restructuring/recovery investment for Irish SMEs and mid-sized corporates.

¹⁶ <http://www.finance.gov.ie/news-centre/news/ireland-exit-euimf-programme-15th-december-planned-and-without-further-supports>

¹⁷ <http://mtes2020.finance.gov.ie>

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.

Trends in Business Investment

Reamonn Lydon and John Scally¹

Abstract

This article examines trends in business investment in Ireland. Consistent with the international evidence on investment cycles, we show that business investment in Ireland exhibits large cyclical movements around a long-run trend relative to GDP. Changes in business investment broadly coincide with the overall business cycle, although swings in investment tend to be far greater, with extended periods of both over- and under-investment relative to GDP. The sharp fall in business investment since 2007 is largely explained by both the rapid slowdown and subsequent fall in GDP growth, and the previous cycle of over-investment which resulted in an elevated business investment to GDP ratio relative to the long-run trend. We look at the importance of the various factors driving investment using a simple econometric model. The model indicates that, in addition to GDP, other factors such as the cost of capital, the availability of credit and changes in capital gains (asset prices) may also play role.

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. We thank John Flynn, Terry Quinn and Gerard O'Reilly for helpful comments. We would particularly like to thank Kieran Culhane, CSO and Ide Kearney, DNB for their assistance in sourcing the data used in the calculations.

1. Introduction

Business investment, the flow of capital or asset expenditure that businesses use for future production, makes an important contribution to both current and future economic growth. Investment adds to current expenditure but also adds to the economy's future productive capacity and to potential economic growth. It also has implications for employment growth, as research suggests that business investment and the demand for skilled labour are complements.

While the housing boom and subsequent bust explain much of the movement in overall investment, the focus of this article is on the two main categories of business investment, namely machinery and equipment, and buildings and infrastructure. We use simple a neo-classical model similar to Bean (1981) to analyse the factors driving business investment. We estimate separate models for the two categories of investment and highlight distinctions between short-run and long-run investment trends. Section 2 provides an overview of business investment trends in Ireland. Section 3 examines aspects of the user cost of capital which feed through to our models in Sections 4. Section 5 concludes.

2. Investment trends

Investment spending accounts for a significant share of aggregate demand, equivalent to 12 per cent of GDP in 2012, down from a pre-recession peak of 20 per cent in 2007/08. Policy makers care about investment expenditure not only because it feeds through to current GDP in the National Accounts framework, but also because it has potentially important implications for the future productive capacity of the economy. For this reason, the main focus tends to be on Business Investment, which excludes expenditure on residential housing investment and government expenditure on fixed capital formation. This article examines the main drivers of real business investments in Ireland in recent years, with a view to understanding how and when expenditure levels might recover from current lows. In addition to expenditure on housing

and government fixed capital formation, we also exclude expenditure on non-road transport from our measure of business investment. These expenditures, which largely consist of aircraft purchases, can be significant in value and introduce considerable volatility to the annual investment figures. They also have a limited impact on domestic economic activity as aircraft are imported and net out on the import side of the National Accounts, and, as they are often based abroad, have limited domestic employment implications.

As noted above, we follow the National Accounts framework, splitting business investment into its two main components: expenditure on machinery and equipment; and expenditure on buildings and infrastructure. The latter includes both industrial buildings for manufacturing and commercial buildings, i.e. offices. The shaded rows in Table 1 show recent trends in both categories of business investment. Whilst the collapse in the property market accounts for a sizable proportion of the fall in investment spending since 2009, business investment has also fallen sharply during the recession. Business investment has declined from an 8 per cent share of GDP between 2000 and 2008 to just 5 per cent between 2009 and 2012. Relative to spending on machinery and equipment, which has fallen by around a quarter during the recession, the decline in spending on buildings and infrastructure has been more marked, registering a fall of over 50 per cent.

A firm's decision as to how much to invest is based on a wide range of factors, not least on expectations of future demand for their products. Inherent uncertainty about the future can lead firms to over or under estimate future demand conditions, meaning that decisions around the desired or optimal capital stock can vary considerably depending on the point in the business cycle. Studies suggest that, at an aggregate level, investment is one of the most cyclical components of expenditure on GDP, and is often characterised by a more amplified cycle with higher peaks and troughs, and longer wavelengths (Stock and Watson, 1998; Agresti and Mojon, 2001). Investment can be slow to

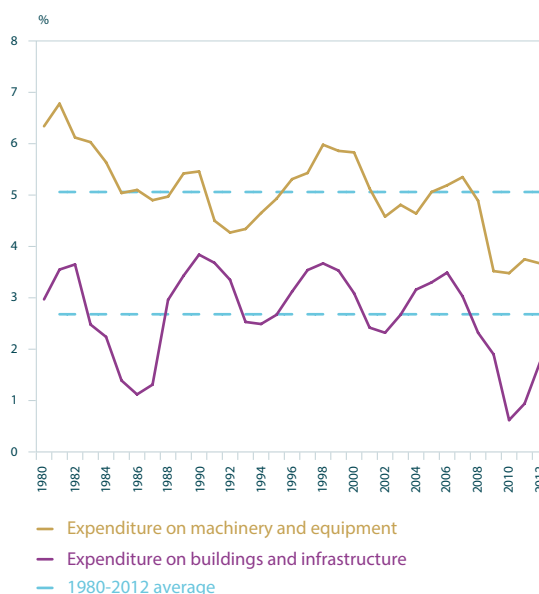
Table 1: Average Annual Investment Expenditure for Different Categories of Investment

	1980-84	1985-89	1990-94	1995-99	2000-08	2009-2012
Total investment (€, billion constant prices, average annual spend)	10.3	9.1	10.7	17.5	29.2	19.5
% GDP	20.2%	16.1%	15.5%	18.6%	19.3%	12.1%
Total investment consists of						
Residential construction	3.4	3.2	3.7	6.4	11.2	4.7
	6.6%	5.7%	5.3%	6.9%	7.4%	2.9%
Government fixed capital formation	2.2	1.7	1.5	2.3	4.8	4.4
	4.4%	3.1%	2.2%	2.5%	3.1%	2.7%
Business investment in buildings and infrastructure	1.5	1.2	2.2	3.1	4.4	2.1
	3.0%	2.1%	3.2%	3.3%	2.9%	1.3%
Business investment in Machinery & equipment (ex. non-road transport)	3.1	2.9	3.2	5.2	7.6	5.8
	6.2%	5.1%	4.6%	5.6%	5.0%	3.6%
Machinery & equipment (non-road transport)	0.03	0.09	0.14	0.37	1.27	2.47
	0.1%	0.2%	0.2%	0.4%	0.8%	1.5%

Source: CBI calculations using CSO National Accounts data and Exchequer figures on fixed capital formation. Figures in italics show investment as a percentage of GDP. The shaded cells show "business investment" as defined in this article.

respond to the economic environment, reflecting the impact of information lags, reaction lags, implementation lags and capacity/inventory issues. It takes time for firms to assess the economic environment and to implement capital stock changes around this information.

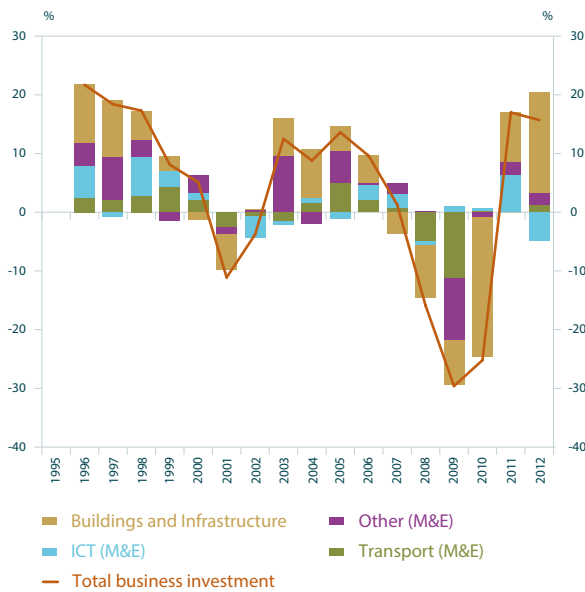
Figure 1 charts the evolution of business investment in Ireland as a proportion of GDP since 1980. It is evident that there are periods of capital accumulation over and above growth in the economy's output: for example, in the 1990's in the run up to the launch of the euro and again in 2002 to 2007 as businesses invested in an environment of sustained double-digit economic growth. This cycle of capital de-stocking and re-stocking, which is evident in Figure 1, is partly the result of imperfect information and implementation lags, and implies that the Irish business investment cycle has long periodic swings approximately every eight to ten years². These prolonged investment cycles are not limited to the Irish experience and are well documented in investment literature;

Figure 1: Business Investment to GDP Ratio

Source: CBI calculations using CSO data

² These cycles are termed "Juglar Cycles" in the literature; see Korotayev and Tsirel (2000).

Figure 2: Contribution to business investment growth by asset type



Source: CSO and Central Bank of Ireland calculations. Transport excludes non-road transport investment. Collectively, 'Other', 'ICT' and 'Transport' investment account for total business investment in machinery and equipment (excluding non-road transport).

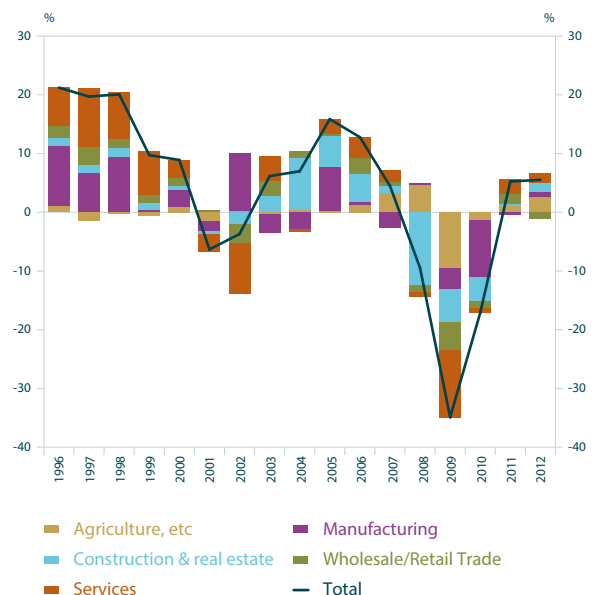
see, for example, Korotayev and Tsirel (2000). The business investment to GDP ratio started to pick up again in 2012 as firms restocked in reaction to the more positive economic outlook. The ratio has yet, however, to return to its long-run average level, as shown by the horizontal line in the figures. Assuming that investment eventually returns to its long-run level relative to GDP, as has been the case historically following recessions, this should be a source of growth for the Irish economy in the coming years.

Figure 2 charts the evolution of business investment growth by asset type in Ireland over the 1996 to 2012 period. What is most noticeable is that the annual growth rates of business investment on the vertical axis vary substantially – from +20 to -30 per cent. These large amplitudes reflect the impact of uncertainty and inherent inertia of investment decisions as highlighted in the literature. The significant contribution of commercial building and construction is also a prominent feature. The upward trend from 2000 to 2007 is evident with a cooling off period around

the dotcom bust in 2001 to 2003, for Information and Communication Technology in particular. The chart also shows the rapid fall-off in overall business investment activity post-2007 as firms deleveraged in response to the economic crisis, with investment falling back to levels experienced in 1997. Business investment picked up in 2011 and 2012, driven by increases in both machinery and equipment investment and buildings and infrastructure, although it is important to point out that in the latter case, the increases are from a very low base. Available National Accounts data for the most recent quarters suggests that the pick-up in underlying business investment has continued into 2013.

Figure 3 shows a sectoral breakdown of investment growth over the 1995 to 2012 period. In broad terms, the chart highlights several different phases of business investment growth over the last two-and-half decades. In the first phase, which coincides with the 'Celtic Tiger' period of economic growth from the mid-1990s through to the early-2000s, investment by firms in the services³ and

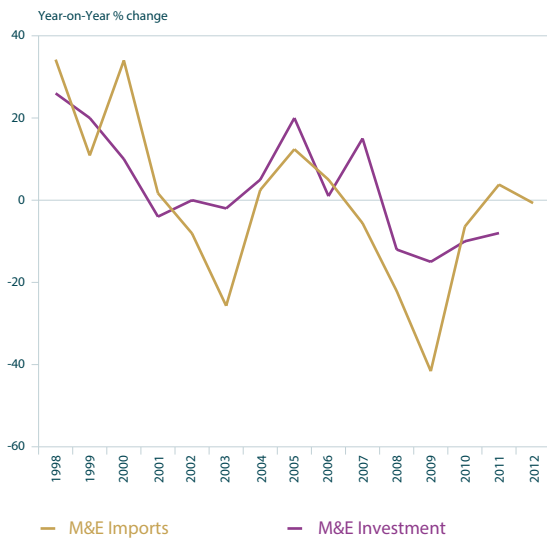
Figure 3: Sectoral breakdown of investment growth



Source: CSO and internal calculations.

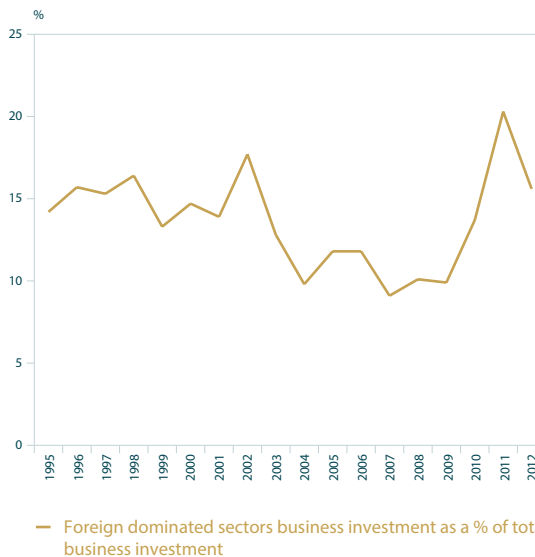
³ Our definition of 'services' includes the following sectors: Transportation and Storage; Accommodation and Food Services; Information and Communication; Financial and Insurance Activities; Professional, Scientific and Technical Activities; Administration and Support Services; Arts, Entertainment and Recreation; and 'Other' Services.

Figure 4: M&E investment and imports



Source: CSO.

Figure 5: Foreign Dominated Sectors Business Investment as a % of Total



Source: CSO and Central Bank of Ireland calculations. Foreign dominated sectors occur where MNE turnover on average exceed 85% of the sector total.

manufacturing sectors were the primary drivers of investment growth. In the second phase, which begins after the dot-com bust in the early 2000s, investment expenditure by firms in the construction and real estate sectors was the main driver of growth. Notably, firms in the services sector also continued to invest throughout this period, albeit at a slower rate of growth than earlier years. The final phase coincides with the recession beginning around 2008. The initial fall-off in investment growth in 2008 is dominated by firms in the construction and real estate sectors. In 2009 and 2010, however, the decline became more broad-based, with every sector registering substantial declines in each of these years. As noted above, 2011 and 2012 saw a return to positive investment growth, albeit from a very low base levels. As with the decline, the increase has been broad-based with growth observed across most sectors.

Another factor to consider when assessing the aggregate economic impact of investment in the context of the National Accounts is that the

import content of investment in machinery and equipment in Ireland is high. This reduces 'first-round' or multiplier effects but feeds through to domestic employment and activity. While there is limited direct data available on the precise import content of investment, Figure 4 indicates that there is a high correlation between movements in imports of machinery and equipment (M&E) and investment of the same.⁴

One has also to be mindful of the composition of Irish industrial output and its implications for investment spending. The concentration of output in the chemicals and ICT sectors and the presence of large multinational organisations mean that domestic economic conditions may be of lesser consequence when these firms are making investment decisions. Figure 5 illustrates that investment by firms in these sectors has accounted for between 15 and 20 per cent of total business investment.

⁴ An analysis of Input-Output tables also points to the high import content of machinery and equipment investment.

3. Changes in the market cost of investment

We now turn to look at how changes in the user cost of capital might have impacted on business investment in Ireland over time. We draw on the results in Znyderl and Kearney (ZK, 2013), who provide estimates of the user cost of debt-financed capital in Irish manufacturing.⁵ Investment is generally assumed to be negatively related to the user cost of capital, defined as follows: $UC_t = P_t * (r_t + d_t - cg_t)$, where P_t is the price of the investment good, r_t is the real rate of interest, d_t the depreciation rate and cg_t real capital gains.⁶

Figure 6 shows the main components of the user cost of capital for machinery and equipment (M&E) investment (less non-road transport). The first panel shows trends in the price level of M&E investment goods relative to economy-wide price trends, as measured by the GDP deflator. Increases in the price of investment goods not only increase the overall user cost, thereby reducing investment, but can also prompt firms to substitute away from capital towards other inputs in the production process, such as labour. The price of M&E investment goods increases at a much slower rate between 1995 and 2007, when compared with economy-wide prices, which also coincides with the observed periods of high investment growth. In fact, by 2007, the price level for M&E investment goods was back to 1995 levels, possibly reflecting the impact of rapid technological progress.

Increases in the real-interest rate will increase the user cost of capital, and therefore potentially lead to lower levels of M&E investment expenditure. The second panel shows a cross-plot of the share of M&E business investment in GDP (to control for demand factors) against the real interest rate. The slope of the regression line in the chart is -0.07 (p-value 0.002), implying a negative correlation between the two series. We test this relationship more formally in a regression model in section 4.

The third panel in Figure 6 shows that the overall depreciation rate for M&E capital is more-or-less unchanged in recent years, which suggests that it has little impact on aggregate investment trends. In contrast, the depreciation rate for ICT equipment has been rising steadily since the mid-1990s. This is probably attributable to the fact that software, which has a higher depreciation rate, is now a much larger proportion of ICT equipment than it was 20 years ago. We expect investment to increase with depreciation, as firms have to replace machinery at a higher frequency. The rising ICT depreciation could therefore be contributing to the increasing share of ICT investment in total investment in recent years.

Finally, the fourth panel in Figure 6 shows the trend in M&E capital gains, defined as the real increase in the price of investment goods. Compared with expenditure on buildings and infrastructure assets, we would not expect to observe a strong correlation between expenditure on M&E and capital gains. This is particularly the case, when one considers the relatively short asset lives for many types of M&E; i.e. in practice, how likely is it, for example, that the potential capital gain on a given IT investment plays a significant role in the firm's investment decision? In any case, we observe little variation in the series, and practically no long-run trend. We therefore place little weight on this factor when it comes to explaining aggregate M&E investment trends.

Figure 7 shows the same components of the user cost of capital for business investment in buildings and infrastructure. In summary, we conclude the following on the basis of the figures:

- The price-level for buildings and infrastructure investment increased sharply between 1995 and 2007, which, if anything, should have acted as a drag on investment growth.

⁵ We thank the authors for providing us with their underlying data and analysis. The ZK paper provides estimates for the period 1985 to 2011. We have extended the estimates of the user cost of capital through to end-2012, using the same methodology as in the original paper.

⁶ ZK (2013) also include a discussion on the importance of policy interventions, such as grants and tax relief. However, because the impact of such measures are firm-specific, i.e. they depend on the timing and size of subsequent profits (or losses), we do not examine the impact of such measures in the model of aggregate investment trends.

Figure 6A: M&E investment deflators (2011=100)

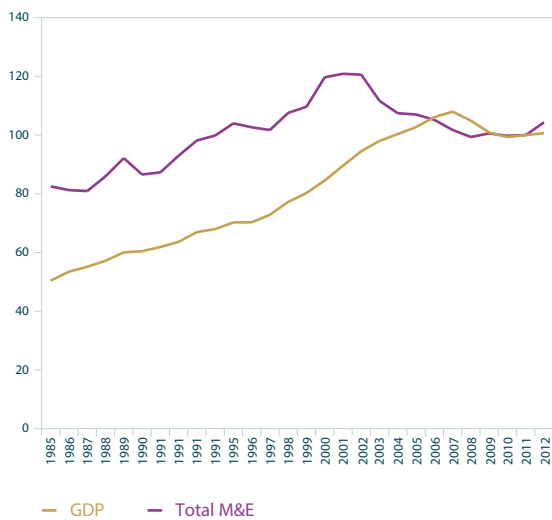


Figure 6B: Real interest rate & share of M&E in GDP

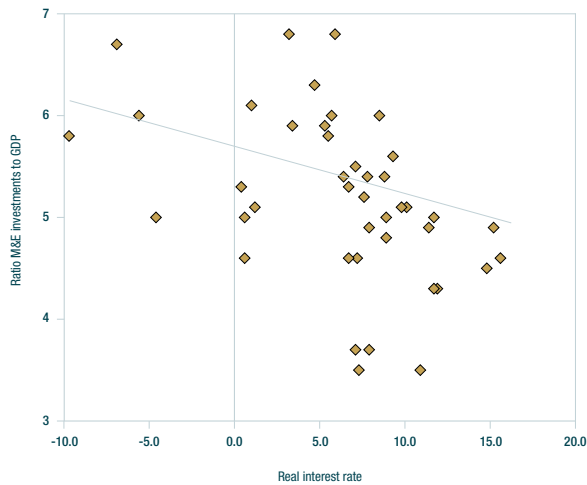


Figure 6C: M&E capital depreciation rates

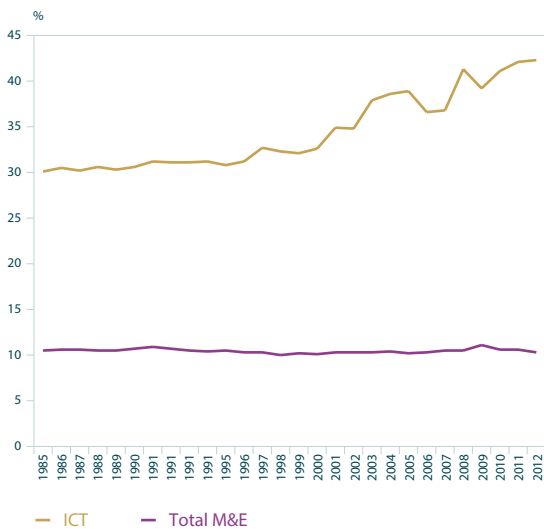
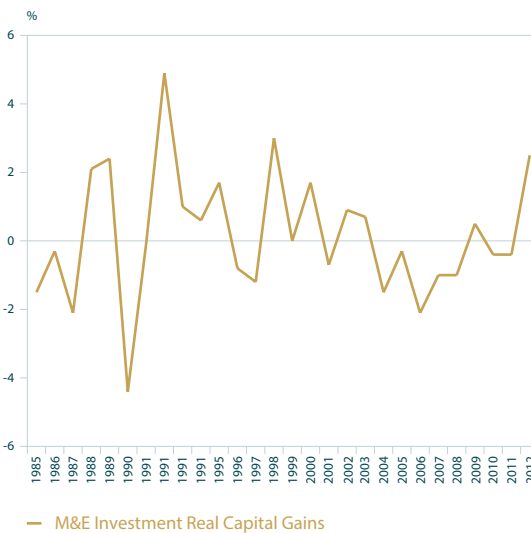


Figure 6D: M&E investment real capital gains



Source/notes: (a) Deflators from the CSO, NIE. (b) the real interest rate is taken from Znyderl and Kearney (2013) and is defined as the nominal rate on 1-to-3 year loans to firms in the manufacturing sector minus the rate of change in the wholesale price index for manufacturing. We extend this series to end-2012 in the analysis. (c) Depreciation rates are equal to the ratio of the consumption of fixed capital to the stock of fixed capital (CSO); ICT equipment includes 'Computer Software' and 'Other office machinery and hardware'. (d) Real capital gains are defined as the percentage change in the M&E investment deflator minus annual inflation given by the manufacturing wholesale price index.

Figure 7A: PC investment deflators (2011=100)

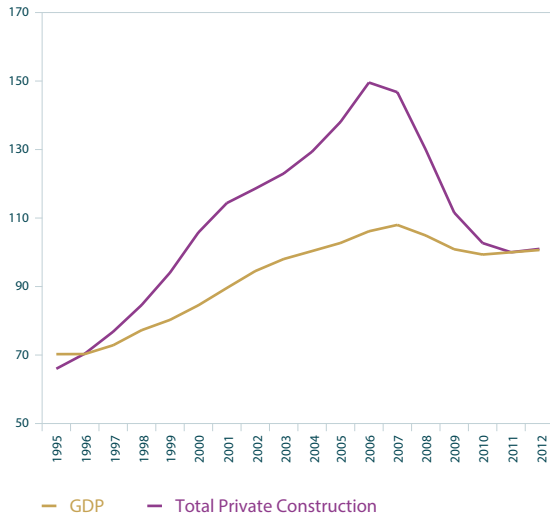


Figure 7B: Real interest rate & share of PC in GDP

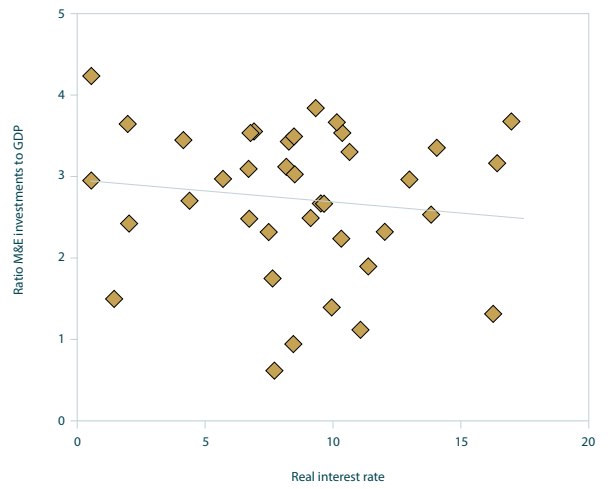


Figure 7C: PC Capital Depreciation Rates

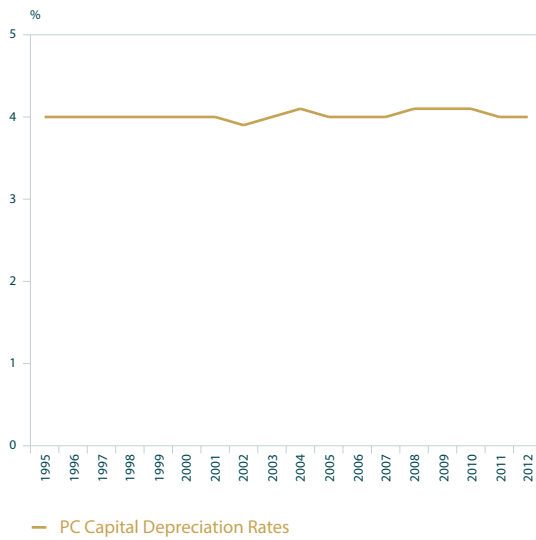
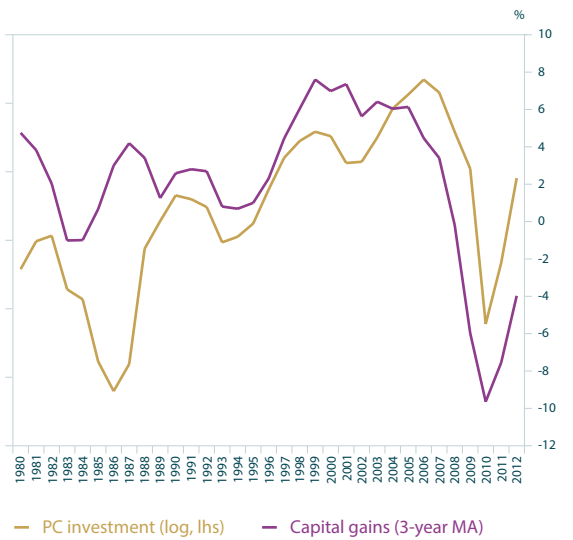


Figure 7D: PC investment real capital gains



Source/notes: See notes for Figure 6. The depreciation and capital gains series is taken from Znerderl and Kearney (2013). The capital gains series is a 3-year moving average, reflecting the backward looking nature of information used to make investment decisions.

- The relationship between interest rates and buildings and infrastructure investment (as a share of GDP) appears to be quite weak, when compared with M&E investment, for example. We test this more formally in a regression framework in Section 4.
- As with the depreciation rate for overall M&E capital goods, there appears to be little time trend in the depreciation ratio for PC assets. However, the significantly lower depreciation rates, approximately 25 years versus 2½ (ICT) to 10 (all) for M&E suggests that potential capital gains may be an important consideration in the decision to invest or not.
- As expected, the main component of the user cost which appears to be correlated with investment is the capital gains series, which fluctuates considerably during the period. The chart shows the extent to which trends in capital gains are correlated with investment trends. Again, we test this more formally in Section 4.

4. Empirical models of investment

Business investment in machinery and equipment

Having looked at the trends in the data and the evolution of the elements of the user cost of capital, we now turn to specify and estimate an econometric mode of investment spending for Ireland. In keeping with the preceding analysis, we model business investment in machinery and equipment and buildings and infrastructure separately. Our empirical model is based on the standard neo-classical model of the determination of the optimal capital stock; see for example Bean (1981) or Jorgenson (1964). In equilibrium, the long run relationship between investment ($i = \log(\text{annual investment expenditure})$) and output (as measured by $\log(\text{GDP})$) is given by:

$$i = \alpha_0 + \alpha_1 \text{GDP}_t - \alpha_2 \text{UC}_t$$

where UC is the user cost of capital, as defined earlier.⁷ In the Bean (1981) framework, the assumption is that over the long-run, $\alpha_1 = 1$, that is, the ratio of investment to GDP is a constant (for a given cost of capital) – which he finds to be the case in his analysis of UK manufacturing investment.

We estimate a regression model to explain annual investment growth using data from 1980 to 2012; all variables are in logs and constant prices.⁸ As an alternative to using annual data, we could estimate a model using quarterly investment data, which is available from 1997.⁹ However, the annual data offers a number of advantages over the quarterly data. Firstly it is available for a much longer sample period. This is important in the context of long investment cycles, as shown in Figure 1. Secondly, it allows us to smooth out some of the idiosyncratic variation in the quarterly investment series. As a cross-check on our results, we have estimated the model using the quarterly data to 2013Q3 and obtained very similar results to the model which uses annual growth rates. However, the main difference is that the model using annual data explains more of the observed variance in investment. This is to be expected given the higher levels of variation in the quarterly data, and for this reason our preferred approach is to use the annual data.

We estimate an error correction model to explain annual investment growth as follows:

$$\Delta I_t = \alpha_0 + \beta_0 (I_{t-1} - \alpha_1 \text{GDP}_{t-1} - \alpha_2 \text{UC}_{t-1}) + \beta_1 (L)\Delta \text{GDP}_t + \beta_2 (L)X_t$$

where (L) is a lag operator and X_t is a matrix of other exogenous factors which explain short-run movements in investment. The error-correction specification allows us to test both our priors as to the long-run relationships, i.e. $\alpha_1 = 1$ and $\alpha_1 < 0$, and to examine the short-run dynamics. As the link between investment and GDP via the National accounting raises endogeneity concerns, we instrument

⁷ See Ellis and Price (2003) for a full derivation of this estimating equation.

⁸ Annual investment data is available from 1970 onwards in the NIE. However, reliable data on key components of the user cost of capital, such as the real interest rate and depreciation, is only available from 1980 onwards. Hence, we restrict the sample to this period.

⁹ Bakhshi & Thompson (2002) estimate a version of the Bean model on quarterly UK business investment data from 1972 to 2001. Both qualitatively and quantitatively, the results are very similar to those presented here.

Table 2: M&E Model results

Long-run	Log	(M&E investment 1980 – 2012)
GDP_t	1.006***	(0.076)
User cost of capital _t	-0.0151***	(0.046)
Constant	-2.678***	(0.773)
Dickey-fuller test of residuals [5% CV]	-3.12 [-2.96]	
Short-run	Log	(M&E investment 1980 – 2012)
$(I_{t-1} - \alpha_1 GDP_{t-1} - \alpha_2 UC_{t-1})$ (error correction term)	-0.474***	(0.0892)
ΔGDP_t	1.421**	(0.659)
Δr_t (real interest rate)	-0.293	(0.298)
Δc_t (credit)	0.402***	(0.134)
Δp_{t-1} (price of investment goods)	0.227	(0.213)

R-squared, observations, Durbin-Watson Statistic 0.75, 33, 1.99

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

ΔGDP_t in the above equation using lagged own values. Given the increasing share of ICT investment in total investment in recent decades, the depreciation rate included in the estimate of the user cost of capital is a *blended* depreciation rate for non-ICT and ICT capital.¹⁰ In terms of the X_t variables, we include changes in the various sub-components of the user cost of capital, such as the price of investment goods, the real interest rate and capital gains, as implied by the literature (e.g. see Bakhshi and Larsen, 2001) and the evidence in Figures 6 and 7. We also include changes the stock of credit provided to non-financial corporations (Δc_t) to control for financing constraints not captured by the real interest rate.

The estimation results, shown in Table 2 above, suggest a one-for-one relationship between investment and GDP over the long-run, and the data does not reject the hypothesis that the parameter is equal to one. Increases in the user cost of capital have a negative impact on investment levels, consistent with theory. Figure 8 plots the fitted values (logs) and residuals¹¹ from the long-run regression. Whilst

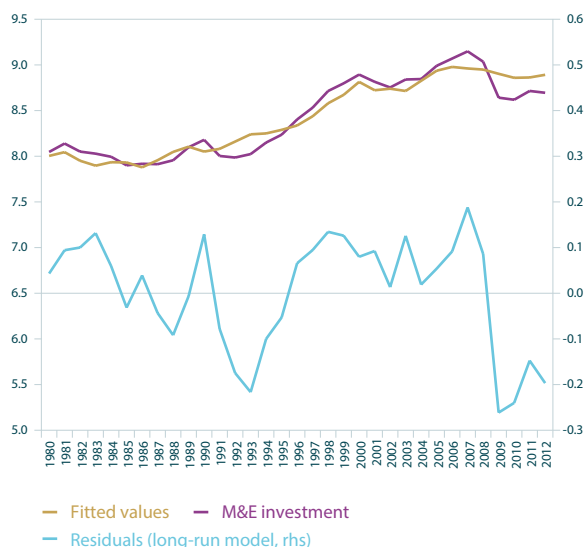
the long-run trend is captured by the model, there are extended periods when investment departs from the long-run relationship, consistent with a pattern of long investment cycles discussed earlier. The fall in investment associated with recessions in the early 1990s and from 2007 onwards are both evident in the chart. Similarly, the increase in investment growth which occurred during the Celtic Tiger and credit boom periods is also apparent.

In addition to estimating the the long-run relationship, we also examine the short-run dynamics. The results from the short-run equation, shown in the bottom panel of Table 2, suggest that changes in GDP growth can have a disproportionately large impact on annual investment growth (coefficient of 1.4) – this could be interpreted at the signalling effect, where firms interpret contemporaneous changes in GDP as an indicator of future demand conditions. The coefficient on the error correction terms indicates that deviations from the long-run ratio of investment to GDP take several years to correct (coefficient of -0.48). Increases in the real interest rate are negatively correlated with investment

¹⁰ The blended depreciation rate is a weighted average of the annual depreciation rates for 'Other Machinery and Equipment' and 'Software', where the weights are annual investment of ICT and non-ICT. Data is available from the authors on request.

¹¹ Given the log specification, and assuming changes in the user cost are proportionately smaller than changes in GDP, the residuals here can be interpreted as the log of the investment to GDP ratio.

Figure 8: Long-run M&E Model



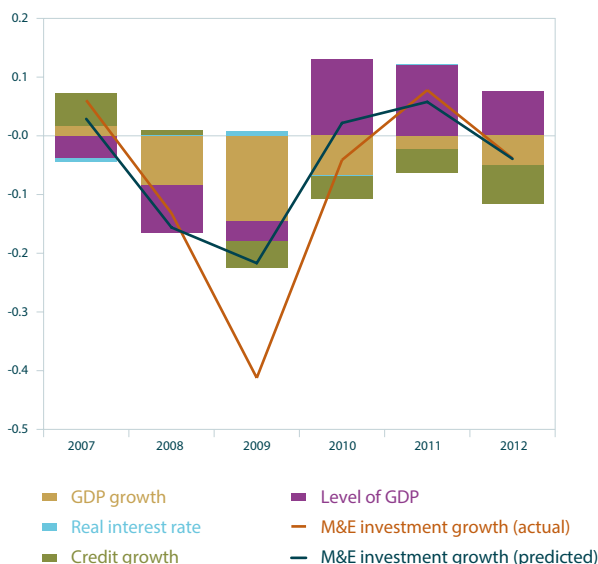
Source: Central Bank of Ireland calculations.

in the short-run, although the coefficient is not statistically significant. The inclusion of the user cost of capital in the long-run specification, which includes the real interest rate, may already capture the impact of changing credit conditions or the real interest rate may be an imperfect measure of the real cost of debt when considering M&E investment. The results also indicate a positive role for credit growth in affecting aggregate investment over the short-run. This could either capture demand-side factors, particularly if contemporaneous changes in GDP are an imperfect proxy for firms' perceptions of future demand, or it could also capture the impact of financing constraints. Given the correlation between GDP and credit growth over the period in question (correlation coefficient of 0.50), there are obvious multi-collinearity concerns.¹² However, models with and without GDP or credit show similar results – i.e. the coefficient on GDP is 2.10 when credit is

excluded; similarly, the coefficient on credit is 0.56 when GDP is excluded – leading us to conclude that multi-collinearity is not a concern and that the results in the short-run specification represent independent effects. Finally, we also include the change in the price-level of investment goods in the short-run specification and find that the coefficient on the variable is statistically insignificant.

We use the results from the short-run specification to decompose the contribution of the various factors to investment growth since 2007 in Figure 9¹³. The red line shows actual M&E growth while the blue line shows the predicted values from our model. The model provides a good fit to the data, although it underestimates the extent of the decline in 2009. According to the model, in 2007, growth in GDP and credit were driving M&E investment growth, while the level of GDP was pulling in the opposite direction – this is the impact of the long-term relationship between investment and GDP – which suggests that

Figure 9: Decomposition of M&E growth



Source: Central Bank of Ireland calculations.

¹² Multi-collinearity arises in a regression setting when two or more of the independent (right-hand side variables) are linearly related. If multi-collinearity is present, it may not be possible to estimate the independent effects of the variables in question on the dependent variable.

¹³ We exclude price effects from the decomposition as they are insignificant in the regressions

Table 3: Business investment in buildings and infrastructure

Long-run	Log	(Building and infrastructure investment 1980 – 2012)
GDP_t	1.117***	(0.190)
User cost of capital	-0.0262*	(0.013)
Constant	-4.778**	(2.078)
Dfuller Residuals (drift, lags [1% CV])	-4.39 [-2.96]	
Short-run	Δ Log	(Investment 1980 – 2012)
$(I_{t-1} - \alpha_1 GDP_{t-1} - \alpha_2 UC_{t-1})$ (error correction term)	-0.510***	(0.114)
ΔGDP_t	2.166*	(1.350)
Δr_t (real interest rate)	-1.235	(1.199)
Δc_t (credit)	0.749**	(0.329)
Δp_{t-1} (price of investment goods)	2.434**	(1.103)

R-squared, observations, Durbin-Watson 0.50, 33, 1.35

Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

the level of investment was high relative to the level of contemporaneous GDP. Whilst the impact of negative GDP growth in 2008 and 2009 is particularly stark, weak or negative growth continued to be a drag on investment throughout 2010 to 2012. As noted above, we have estimated a quarterly version of this model through to 2013Q3, which paints a more positive picture of investment growth in recent quarters, driven by both stronger output growth and a return to a level of investment consistent with the level of output. That said, the continued negative credit growth trend, which could be capturing both demand and supply effects in the above specification, continues to act as a negative drag on investment growth.

Business investment in buildings and infrastructure

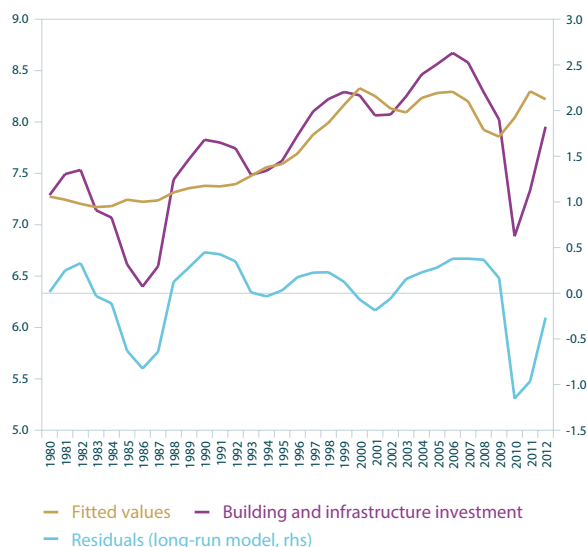
We also run the same long-run/short-run model for business investment in buildings and infrastructure. The results of which are shown in Table 3. Similar to the M&E investment model, over the long-run, the level of GDP and the user cost of capital are the two main drivers of the level of investment. However, the coefficients on GDP (1.1) and the user

cost (-0.026) are both larger than those in the M&E model. Figure 10 shows that the cyclical swings in private construction investment are larger than those of machinery and equipment investment. This is likely because construction has inherently more inertia than M&E – it is easier to change an investment decision in relation to machinery and equipment than in relation to buildings and infrastructure. The role of expectations, and in particular capital gains, also plays a larger role in the private construction activity as shown by the positive and statistically significant coefficient on the lag of capital gains in the short-run specification. In addition, whilst the coefficient on the GDP variable is large, the coefficient is only marginally significant (p-value 0.12).

Compared with the M&E investment model, the short-run specification explains less of the variation in investment growth (r-squared of 0.50). It should also be stressed that the positive investment growth observed in 2011 and 2012 is off a very low base and the results should therefore be interpreted with caution.

Figure 11 shows the decomposition of annual investment growth using the results from the short-run model.

Figure 10: Long-run private construction model



Source: Central Bank of Ireland calculations.

GDP, below its long-run average of 5 per cent. The pace at which this gap might be closed depends on a variety of factors, notably GDP growth, credit growth and the cost of capital. As a predictive tool, the M&E investment model explains a significant proportion of year-on-year investment growth.

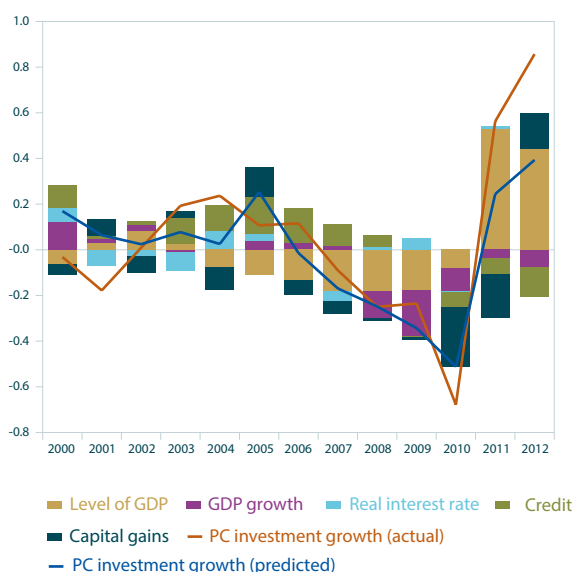
In addition to M&E, businesses also invest in buildings and infrastructure, although this typically accounts for a smaller proportion (30 per cent) of total business investment. In 2012, this type of investment accounted for 1.75% of GDP, also well below its long-run ratio of 2.7% (1980-2012). Much like M&E investment, GDP growth and credit growth will be important factors in determining how quickly investment recovers. In addition, an increase in capital gains (i.e. asset prices) would also contribute to a strong recovery in this type of investment.

5. Conclusions

Recent National Account data suggest that investment growth started to pick up in 2013 following five consecutive years of decline. The period of low investment between 2008 and 2012, and the tentative subsequent pick-up, could mean that firms are beginning a capital restock following the recession.

We examine trends in aggregate business investment in Ireland from 1980 to 2012 and estimate an econometric model to explain long- and short-run trends. We find that over the long-run, the ratio of investment to GDP is characterised by cyclical movements around a relatively stable long-run level. Increases in the user cost of capital have a negative impact on investment, holding output levels constant. In 2012, business investment in machinery and equipment (M&E) accounted for 3.7 per cent of

Figure 11: Decomposition of private construction growth



Source: Central Bank of Ireland calculations.

References

- Agresti, A and Mojon, B, (2001). "Some Stylised Facts on the Euro Area Business Cycle", European Central Bank Working Paper Series No. 95, December 2001.
- Bakhshi, H and Larsen, J (2001). "Investment-specific technological progress in the United Kingdom", *Bank of England Working Paper* no. 129.
- Bakhshi, H and Thompson, J, (2002). "Explaining trends in UK business investment", Bank of England Bank of England Quarterly Bulletin, Spring 2002.
- Bean, Charles R, 1981. "An Econometric Model of Manufacturing Investment in the UK," *Economic Journal*, Royal Economic Society, vol. 91(361), pages 106-21, March.
- Chatelain, Jean-Bernard & Andre Tiomo, 2003. "Monetary Policy and Corporate Investment in France," Université Paris1 Panthéon-Sorbonne (Post-Print and Working Papers) halshs-00112523, HAL.
- Ellis, C. and Simon Price, 2003. "UK business investment: long-run elasticities and short-run dynamics," Bank of England working papers 196, Bank of England.
- Flug, K and Z, Hercowitz (2000). "Equipment Investment and the Relative Demand for Skilled Labour: International Evidence", *Review of Economic Dynamics*, Volume 3, Issue 3, July 2000, Pages 461–485.
- Jorgenson, D, (1964). "Capital theory and Investment Behaviour", *The American Economic Review*, Vol. 53, No. 2.
- Korotayev, A and Tsirel, S, (2010). "A Spectral Analysis of World GDP Dynamics: Kondratieff Waves, Kuznets Swings, Juglar and Kitchin Cycles in Global Economic Development, and the 2008-2009 Economic Crisis". *Structure and Dynamics*. Vol.4. #1. P.3-57
- Lawless, M and McCann, (2012). "The Irish SME lending market - a snapshot", December 2010, Central Bank of Ireland Economic Letter Series, Vol. 2012 No.3.
- Stock, J and Watson, M (1998). "Business Cycle Fluctuations in U.S. Macroeconomic Time Series", NBER Working Paper No. 6528. April 1998.
- Znuderl, N and Kearney, I, (2013). "User Cost of Debt-Financed Capital in Irish Manufacturing Industry: 1985 – 2011", ESRI Working Paper No. 448, February 2013.

Some Implications of New Regulatory Measures for Euro Area Money Markets

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Abstract

A number of banking and financial market regulations have been proposed in response to the financial crisis; in particular the Basel III solvency and liquidity rules. These enhanced regulatory standards intend to ensure that banks and banking systems are significantly more resilient in the future than was the case in the run-up to the financial crisis. However, there have been concerns that the extent and range of the new regulatory measures may lead to unintended shifts in market behaviour.

In consideration of these concerns, in January 2014 the Basel Committee announced a number of significant amendments to the Basel III ratios. This paper reviews the potential implications for euro area money markets and monetary policy that explain, in part, why the recent amendments were considered necessary. In addition, the European Market Infrastructure Regulation (EMIR) is briefly considered. We conclude that, while the latest Basel III amendments will mitigate some of the previous concerns, the proposed measures may still have adverse consequences for money markets.

† The authors work in the Financial Markets Division. The authors would like to thank Maurice McGuire, Michael Maher, John Nash, Gareth Murphy, Lars Frisell and Wesley Murphy for comments on earlier drafts, and also comments on the Leverage Ratio from John Staunton. The views expressed in this article are the personal responsibility of the authors and are not necessarily those held by the Central Bank of Ireland or the ESCB.

1 Introduction

The experience of the financial crisis has led to a review of the regulation of financial markets, and the banking sector in particular. In this context, the Basel III banking standards are becoming the cornerstone of addressing some of the causes of the financial crisis. In particular, the proposed changes aim at preventing liquidity and solvency risks from building up again in the manner that they did prior to the current crisis. Meanwhile the need to create more efficient and resilient financial market structures, as well as to improve transparency, is addressed through regulatory initiatives like EMIR.

The financial crisis has made clear the weaknesses in the banking system and the regulatory framework. Policy makers have placed particular emphasis on addressing the inadequate mitigation of liquidity and leverage risk in banks. In 2008, the Basel Committee on Banking Supervision (BCBS) published its 'Principles for Sound Liquidity Risk Management and Supervision' in order to give better guidance on liquidity risk management and supervision. The global nature and importance of addressing these issues was emphasised through the September 2009 Report of the Financial Stability Board (FSB) to G20 Leaders on 'Improving Financial Regulation'. The FSB set out to "advance a major program of financial reforms based on clear principles and timetables for implementation that are designed to ensure that a crisis on this scale never happens again". The FSB Report committed to "substantially" raise the bar for global liquidity risk regulation and announced that the Basel Committee would issue a new minimum global liquidity standard by the end of 2009.¹

In this context, the subsequently proposed Basel III regulations are a crucial step in strengthening banking systems globally. The Basel III liquidity regulations should also lead to a more harmonised approach to supervision of liquidity related risks, thereby creating a more stable banking environment as well as helping

to reduce some of the heterogeneous treatment of banks' liquidity risks and behaviours.

However, the extent and range of the proposed regulatory measures may lead to some unexpected shifts in market behaviour – at least in an interim period. These shifts may reflect the adjustment to the new standards, but may also reflect a permanent change in behaviour after markets have fully adjusted. This paper considers the potential impact that the originally defined Basel III ratios may have had on banks' incentives and behaviours. Consideration of these impacts by the Basel Committee and concerned stakeholders provides the backdrop to the amendment of the Basel III ratios announced on 12 January 2014.²

In considering these implications, we assume that there will be a period covering the next few years that will see many banks, and the system overall, adjusting so that it converges towards compliance with the measures. Undoubtedly, the price to be paid to secure certain types of funding will increase as banks adjust towards achieving compliance with the regulatory measures. For some banks the new regulatory requirements may prove prohibitively costly. Other banks will struggle to meet compliance and will look to do so gradually during the transition period, while banks that already have reached compliance may publish their regulatory ratios to display a position of strength. This may create a self-fulfilling prophecy where banks that are not publishing their measures may – rationally – be suspected to belong to the weaker category of banks, and find it even harder to attract long-term funding, leading to further market fragmentation.

The behaviour and incentives of banks adjusting to and maintaining compliance with the new regulatory measures may impact supply and demand in different segments of money markets and consequently affect lending rates. Reduction in activity in segments of the money market may also leave those markets thinner and potentially increase volatility.

¹ This is in addition to a wide ranging list of measures in the G20/FSB reform agenda to address the different elements of the regulatory framework that needed strengthening, including capital requirements, moral hazard posed by systemically important institutions, accounting standards, compensation practices, oversight of the financial system, robustness of the OTC derivatives market, re-launching securitisation on a sound basis and adhering to international standards.

² <http://www.bis.org/press/p140112.htm>

Section 2 of this paper discusses some particular proposals in the Basel III framework, namely the pre-January 2014 versions of the Liquidity Coverage Ratio (LCR), the Net Stable Funding Ratio (NSFR) and the Leverage Ratio (LR), and how the proposals may have impacted on euro area money markets (repo, interbank and debt markets). Section 3 discusses the same Basel III ratios but considers their potential impact on monetary policy operations. Section 4 discusses another regulatory measure, EMIR, and analyses its potential impact on the money markets, while Section 5 concludes. While individual jurisdictions may implement variations of the Basel III recommendations, the overall principles proposed under Basel III will most likely be adopted in general. Key changes to the Basel III ratios that were announced on 12 January 2014 are noted in the relevant sections. Despite these amendments, the regulations may still have adverse implications for money markets.

to overcome short-term liquidity disruptions in a specified stress scenario over a 30-day period. Convergence towards LCR compliance will require significant adjustment of the composition of both assets and liabilities on the balance sheet of many banks. In order to reach the LCR target, non-compliant banks will have to attain a higher proportion of liquid assets and/or increase the duration or “stickiness” of their funding, which may impact on money markets and monetary policy implementation. The LCR has remained largely unchanged following the January 2014 amendments. Although the introduction of the recognition of committed liquidity facilities (CLF) offered by central banks should have a limited implication for money markets, it should mitigate some of the unintended consequences for monetary policy operations.

2 The Basel III Framework and the Implications for Money Markets

2.1 Liquidity Coverage Ratio

The LCR requires banks to hold a minimum amount of high quality liquid assets (HQLA)

With regard to the assets side of a bank’s balance sheet, banks can improve LCR compliance by increasing the amount of high quality liquid assets held – in declining order from Level 1 to Level 2B assets (see Box 1). Demand for these assets is likely to increase, which should add a premium to these assets’ prices. Even if the overall banking system has excess liquidity, it is quite conceivable that individual institutions, for example because of sovereign risk concerns, may have difficulties in acquiring sufficient high quality liquid assets.

Box 1: Liquidity Coverage Ratio and Net Stable Funding Ratio

The Basel Committee on Banking Supervision introduced two liquidity ratios: the **Liquidity Coverage Ratio (LCR)** that requires banks to hold a minimum amount of high quality liquid assets to overcome short-term liquidity disruptions in a specified stress scenario over a 30-days period, and the **Net Stable Funding Ratio (NSFR)** that requires banks to keep a minimum amount of stable funding to serve liquidity commitments over a one-year time horizon.

A. Liquidity Coverage Ratio

The LCR is expressed as:
$$\frac{\text{Stock of High Quality Liquid Assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

Box 1: Liquidity Coverage Ratio and Net Stable Funding Ratio

On the numerator side, banks must hold a stock level of unencumbered High Quality Liquid Assets (HQLA). HQLA are comprised of Level 1 and Level 2 assets – Level 1 comprising cash, central bank reserves and certain marketable securities backed by sovereigns, whereas Level 2 is split into 2A (certain government bonds, covered bonds and corporate debt securities) and 2B (lower rated corporate bonds, RMBS and certain equities). Level 2 assets may comprise a maximum of 40% of a banks' stock of HQLA, and Level 2B assets can account for a maximum of 15%.

The denominator of the LCR is the total net cash outflows expected over the next 30 calendar days under a specified stress scenario – i.e. expected outflows minus expected inflows during that stressed period. Different types of funding liabilities are subjected to different run-off ratios, which project the likely impact in accordance with the contracted maturity and perceived stickiness of the liabilities. Similarly, projected inflows are estimates which predict the likely ability to receive funds during the stressed period depending on the source of the funds. Total cash inflows are also subject to an aggregate cap of 75% of total expected cash outflows, in order to ensure that inflows are not over estimated and thereby ensure a minimum level of HQLA holdings equivalent to 25% of cash outflows at all times. Banks are expected to meet this ratio on an on-going basis, thereby avoiding reporting date adjustment behaviours, although the stock of HQLA can be run down during an actual stressed period. A minimum LCR requirement of 60% will be mandatory from 2015, increasing by 10 percentage points per year thereafter to reach 100% in 2019.

B. Net Stable Funding Ratio

The NSFR is expressed as:
$$\frac{\text{Available amount of stable funding (ASF)}}{\text{Required amount of stable funding (RSF)}} \geq 100\%$$

The NSFR requires that the amount of a bank's available stable funding is equal to or greater than the required amount of stable funding it should hold over a one year horizon. Stable funding is defined as the portion of those types and amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress, where the required stable funding is determined by the assets that the bank holds on its balance sheet and by a portion of off-balance sheet commitments. It is expected that the NSFR will move to a minimum standard by 1 January 2018.

Assets

In addition to adding a price premium, the increased demand to hold HQLA may also reduce the supply of HQLA for repo markets – potentially reducing liquidity in the repo markets and adding to market volatility, particularly in times of stress. This effect may be more pronounced for banks that are effectively shut out of the unsecured markets due to specific credit risk concerns. Furthermore, there have been some

suggestions that risk weightings for sovereign bonds might be introduced by supervisors. The mere suspicion of such a development would reduce the attractiveness of holding peripheral sovereign bonds and would further reduce repo market access for domestic banks in those countries.

As will be discussed later, the construction of the LCR formula and the definition of HQLA may create incentives to borrow from

3 This may arise particularly where the central bank does not offer a committed liquidity facility (see discussion below).

central banks³. This may have repercussions for money markets where more aggressive bidding for central bank funding, in a variable rate tender framework, may generate upward pressure on short-term money-market rates. Coupled with an increased market demand for HQLA, yields along the curve may be pushed upwards. This may arise due to the circumstance that the universe of HQLA is largely filled by longer term bonds, such as longer-term sovereign debt. Indeed, banks looking to obtain funding on repo markets are more likely to use longer-term bonds as collateral.

Liabilities

Turning to the liabilities' side of the bank balance sheet, banks can either reduce the likely level of outflows and/or increase the likely level of inflows over the course of a 30 day stress period. In particular, the LCR can be improved by increasing either the level of unsecured funding of greater than 30 days' duration or the overall level of secured funding.

The degree to which banks with excess liquidity will be willing to transact with (suspected) LCR-constrained banks within the system will determine the likely magnitude of the overall impact on the unsecured money markets. This dynamics risk may persist until 2019 (or beyond) when the final LCR requirements are imposed, as potential non-compliance with LCR adds to counterparty risk.

It is plausible that the less attractive treatment of short-term unsecured deposits in LCR, compared to the higher retention rates offered to deposits greater than 30 days, may lead to a reduction in the level of activity in these short-term and even overnight deposit markets. This potentially reduced market activity may put downward pressure on the overnight money market interest rate.

The LCR will create greater competition for unsecured deposits greater than 30 days

duration, notwithstanding that volumes in these are already low due to credit risk considerations. At the same time, placing/lending unsecured funds for greater than 30 days do not count as an inflow for the lending bank so supply of such deposits may decrease.

The net impact of secured repo funding on the LCR is somewhat more complex, but overall points towards repos improving the LCR and encouraging a greater level of secured funding, irrespective of duration. The impact of short-term secured repo transactions on the LCR depends on a range of factors, including the haircut rates applied to the collateral in market repos compared to the inflow and run-off rates applied by the LCR.⁴ In addition, any secured collateral and non-HQLA in a repo transaction do not count towards the stock of liquid assets when calculating LCR. Hence, there is also less of an incentive for banks to engage in secured repo borrowing using HQLA compared to non-HQLA collateral. Overall, we should also expect to see higher demand for secured funding, particularly backed by non-HQLA collateral, which may increase repo price levels.

2.2 Net Stable Funding Ratio

Assets

A bank's choice of assets will have a significant impact on the amount of stable funding that it is required to hold (the denominator of the NSFR ratio), with perceived riskier assets requiring more stable levels of funding. The NSFR gives an incentive to banks to hold higher quality assets on the basis that these are likely to be more marketable and liquid during a crisis period and sales of these assets will generate cash to help meet funding liabilities. Therefore, a lower Required Stable Funding applies to these assets, even where their maturity is greater than one year. Many sovereign and high credit quality corporate and covered bonds have a RSF factor of up to only 20%, which will make holding these assets more attractive. This may amplify the market fragmentation

⁴ See 'Liquidity Regulation and Monetary Policy Implementation', ECB Monthly Bulletin, April 2013, pp. 73-89.

that has arisen during the crisis, as demand for lower quality liquid assets, particularly those with a residual maturity of greater than one year, will decrease. Further actions, such as regulatory bodies possibly introducing different risk weightings on various sovereign bonds, may further amplify fragmentation. Indeed, the January 2014 amendments to the NSFR introduces greater consistency with LCR HQLA categories and applies a higher RSF factor in line with declining categories of HQLA, from Level 1 down to level 2A, 2B and non-HQLA, irrespective of the residual maturity of the assets. Furthermore, non-HQLA securities with a residual maturity of less than one year now carry a 50% RSF factor, compared to 0% RSF previously. These effects may further reduce the demand for non-HQLA securities⁵.

In addition, the amendments to the NSFR also apply a higher RSF factor for interbank lending of a maturity between six months and one year. A 50% RSF is now applied to this asset, compared to 0% previously, as it is treated symmetrically on the funding side with a 50% ASF factor for interbank borrowing for a similar period. However, the RSF treatment of such funding in this new time bucket should, overall, still incentivise a reduction in the supply of such funding on the interbank market.

Liabilities

Focusing on the implications of the NSFR for the funding side of the balance sheet, it appears that further distortions to the money markets may transpire. Firstly, deposits from retail and small business customers are treated favourably as “stable funding” even where these are of short-term maturity. This type of funding will now become even more attractive for liquidity-constrained banks, which may push up deposit rates significantly in particularly competitive markets. In addition, the recent amendments also increased the ASF factor applied to ‘stable’ and ‘less-stable’ non-maturity deposits and term deposits, which further reward holding such deposits and should further increase

the demand for those sources of funding. However, the January 2014 amendments clarify the treatment of secured funding, and a distinction is no longer made between secured and unsecured liabilities for funding maturing in less than one year from non-financial corporate customers. Both are given a 50% ASF factor, whereas in the 2010 NSFR, only unsecured funding from non-financial corporates maturing in less than one year received a 50% ASF factor.⁶ By implication, secured funding from the same counterparties received a 0% ASF factor prior to the amendment. This emphasises the attractiveness of secured funding overall by mitigating the perceived difference in treatment that existed compared to unsecured funding.

The 2010 version of the NSFR penalises short-term wholesale funding on the interbank market by attributing a retention rate of 0% to this category when calculating available stable funding. This will create greater demand for longer-term secured funding and bond issuance and may also reduce the demand for funding in the short-term money market. Banks will be mostly incentivised to engage in short-term money market borrowing where they are already in NSFR compliance and/or where they need to manage cash flow for day-to-day operations. The recent amendments, however, reduce the cliff effects from funding falling below one year to maturity by attributing an ASF factor of 50% to interbank borrowing with a maturity of six months or more and less than one year.

The impact on the short-term money markets will need to be monitored over time, but overall it might be expected that there will be a reduction in the level of money market activity despite the mitigation of the recent amendments in reducing cliff effects.

Debt Issuance

With regard to debt issuance, banks, where possible, will prefer to issue longer-term debt than they will short-term debt, such as commercial paper. Secured and unsecured

⁵ The announced reduction in RSF for unencumbered non-HQLA securities not in default from 100% to 85% is unlikely to mitigate this effect.

⁶ <http://www.bis.org/publ/bcbs271.pdf> *Basel Committee Consultative Document Basel III: The Net Stable Funding Ratio*, January 2014.

borrowings with effective remaining maturities of one year or greater generally have a 100% ASF factor, meaning that they count in their entirety towards achieving the required level of stable funding. Going forward, in a future post-crisis financial landscape, such long-term funding will more likely take the form of secured debt issuance such as covered bonds or securitisations, due to investors' higher risk aversion because of higher bail-in risks. Naturally, banks will look to issue as much unsecured debt as they can in order to improve their term funding, but this may prove prohibitively costly for all but the strongest banks.

The tendency for banks to package their loan assets into secured forms of long-term funding will also increase the current trend of rising balance sheet encumbrance and reduce the remaining value of assets to cover unsecured liabilities in a default or resolution situation.

Hence, heavily encumbered banks may gradually see their access to unsecured funding decline further.

2.3 Leverage Ratio

The rationale behind the LR is to counteract the phenomenon seen prior to the current financial crisis whereby banks built up excessive leverage while still maintaining strong risk-based capital ratios. The LR is intended to be supplementary to the risk-based capital ratio when determining a bank's capital requirement. It should act as a back-stop measure, i.e. that for most banks the risk-based capital ratio measure should be the effective minimum capital requirement while the LR is intended to have a binding effect only in times of the build-up of excessive leverage of low risk-weighted assets.

Box 2: Leverage Ratio

The BCBS has also proposed a new **Leverage Ratio (LR)**. This is a non-risk based measure and the proposed calculation is the Total Tier 1 assets divided by total exposure. Initially, the LR will be non-binding but public disclosure of the ratio will begin on 1 January 2015. Any final adjustments to the definition and calibration of the leverage ratio will be made by 2017, with a view to migrating to a Pillar 1 treatment (i.e. a binding requirement for banks) on 1 January 2018 based on appropriate review and calibration of the ratio. The BCBS has published a revised version of the definition of the LR on 12 January 2014, following the public consultation conducted in 2013.

Leverage Ratio

The LR is expressed as:
$$\frac{\text{Total Tier 1 Capital}}{\text{Total Exposure}} \geq 3\%$$

The minimum LR requirement proposed by the BCBS is 3 per cent. On the numerator side, the Tier 1 capital is calculated based on the capital framework proposed under Basel III (i.e. Common Equity Tier 1 (CET1) plus Additional Tier 1 (AT1) capital). However, the BCBS have indicated that they will continue to collect data during the transition period to track the impact of using either Common Equity Tier 1 (CET1) or total regulatory capital as the capital measure for the leverage ratio

On the denominator side, the exposure measure is the sum of the following exposures: (a) on-balance sheet assets, (b) derivative exposures, (c) securities financing transaction (SFT) exposures (e.g. repo style transactions) and (d) other off-balance sheet assets.

Because the LR is a non-risk based measure, these exposures are added together on an un-adjusted, un-weighted basis to calculate total exposure. Some exceptions do exist, for example, in relation to the calculation of other off-balance sheet exposures.

Should a bank not comply with the LR ratio, the options available to the bank are either to reduce their exposure measure or increase their Tier 1 capital. Of particular importance to money markets, and which received much market reaction, is the treatment of repo transactions as part of the exposure measure. Under the Basel proposals published in June 2013⁷, repos and reverse repos were to be recognised at gross value, i.e. there would be no recognition of netting of cash receivables against cash payables. In addition, a counterparty credit risk add-on is calculated as part of the repo exposure measure, which raises the exposure measure relative to unsecured funding.

Hence, for banks that are on the margins of LR compliance or whose long-term ability to achieve compliance is uncertain, one relatively easy way to reduce their exposure measure would be by reducing their participation in repo transactions. It was argued that, should the netting of repo transactions not be allowed, it would result in a less liquid repo market given the likely reduction in willingness to engage in repos. As a result, there was a strong reaction from market participants that netting of repo transactions should be permissible in order to ensure a deep repo market. Taking these comments into account, the BCBS amended the exposure measure to allow for netting of repo transactions, albeit subject to certain criteria⁸. These amendments may mitigate the effect of the LR on the repo market, however the netting criteria are relatively strict and it remains to be seen if it does in fact alleviate the potential pressures on the repo market as intended.

A further potential issue with the LR is its interaction with other measures, such as the

LCR. The LCR requires banks to hold HQLA but the LR disincentives banks from holding lower-yielding HQLA as these carry the same capital charge as higher-yielding assets under the LR. Therefore, there is a potential conflict between the two new ratios. It is intended, however, that adherence to the LCR criteria should be the primary motivation for banks in this instance and that the LR only offers incentives to hold higher yielding assets once banks are in excess of their LCR ratios.

Banks will not have to be fully compliant with the LR until 1 January 2018 (although earlier disclosure will be required) and thus the LR may undergo further calibrations prior to implementation.

3 Basel III Framework and the Implications for Monetary Policy Implementation

The regulatory measures involved in Basel III, while necessary, have the potential to alter the money markets and participant behaviour in ways which are likely to have direct, as well as indirect, impacts on monetary policy. A study published by Fitch⁹ suggests that the upcoming regulatory measures are already affecting the way banks operate. The study finds that Europe's largest banks have significantly increased their holdings of sovereign securities while at the same time paring back corporate lending.

3.1 Liquidity Coverage Ratio

An important aspect arising from the LCR, particularly as defined prior to the January 2014 amendment, is its interaction with and implications for central bank market

⁷ www.bis.org/publ/bcbs251.htm

⁸ www.bis.org/publ/bcbs270.htm Under the January 2014 definition of the LR, cash payables and cash receivables in SFTs with the same counterparty may be measured net if all the following criteria are met:

- (a) Transactions have the same explicit final settlement date;
- (b) The right to set off the amount owed to the counterparty with the amount owed by the counterparty is legally enforceable both currently in the normal course of business and in the event of: (i) default; (ii) insolvency; and (iii) bankruptcy; and
- (c) The counterparties intend to settle net, settle simultaneously, or the transactions are subject to a settlement mechanism that results in the functional equivalent of net settlement, that is, the cash flows of the transactions are equivalent, in effect, to a single net amount on the settlement date. To achieve such equivalence, both transactions are settled through the same settlement system and the settlement arrangements are supported by cash and/or intraday credit facilities intended to ensure that settlement of both transactions will occur by the end of the business day and the linkages to collateral flows do not result in the unwinding of net cash settlement.

⁹ Report by Fitch Ratings, "Basel III: Shifting the Credit Landscape", 4th November 2013.

Table 1: LCR Roll-over rates for central bank and interbank funding

Type of Funding	Central bank funding (HQLA or non-HQLA)	Interbank funding backed by Level 1 assets	Interbank funding backed by Level 2A assets	Interbank funding backed by Level 2B assets (RMBS)	Interbank funding backed by other Level 2B assets	Unsecured interbank funding or backed by non-HQLA
Roll-over rate	100%	100%	85%	75%	50%	0

operations. Eurosystem monetary policy instruments impact both the numerator and the denominator of the LCR equation identified above. This may lead banks to adjust their funding mix and duration, and potentially influence the bidding behaviour in Eurosystem monetary policy operations and the use of collateral.

Impact on ECB borrowing

Amendments to the LCR in early 2013 reduced the run-off rate on secured repo funding with central banks to 0% from 25% - meaning that it is assumed they can be rolled over and they do not now affect the denominator to the LCR.

The 100% roll-over rate makes central bank-sourced short-term liquidity more attractive relative to interbank funding when not backed by Level 1 assets, which may lead to more competitive bidding for central bank funding. Ultimately, it may not be until the return of variable rate tenders for Eurosystem monetary policy operations that the full impact of the LCR criteria are observed on open market operations bidding.

Little impact is expected to be observed on the deposit facilities of the Eurosystem, largely due to the treatment of overnight deposit facilities and fine tuning operations as HQLA, in a similar fashion to interbank deposits.

Impact on ECB counterparties and collateral usage

It is also expected that LCR convergence may have an impact on counterparties' bidding in

Eurosystem market operations. Incentives are greater for LCR-constrained counterparties to bid more aggressively for central bank funding. In addition, given that the range of ECB-eligible collateral is greater than the list of LCR HQLA, a bank will also improve its asset composition by retaining its HQLA assets and by borrowing from a central bank using non-HQLA as collateral. This may lead to a relatively higher level of counterparty and liquidity risk on the Eurosystem's balance sheet, notwithstanding that haircuts and pricing are applied to mitigate the collateral risks.

However, after a return to variable rate tenders, the implications of a larger number of bidders for Eurosystem funding, potentially with more acute demand for funding in order to achieve LCR compliance, may raise bidding rates which would impact borrowers across the Eurosystem by raising the average rate on the monetary policy market operations. This could impact the intended monetary policy stance and bidding upwards of central bank borrowing rates through market operation tenders may filter through to exert upward pressure onto overnight money market rates. However, this effect on money market rates could be mitigated by expected lower demand for unsecured overnight funding.

In recognition of the above concerns, the Basel Committee introduced an amendment which allows for the inclusion within Level 2B HQLA of a committed liquidity facility (CLF) provided by a central bank¹⁰. In the amendment, the Basel Committee agreed to modify the definition of HQLA within the LCR to provide greater use of CLFs provided by central banks. The use of CLFs within the

10 <http://www.bis.org/publ/bcbs274.htm>

LCR had up to then been limited to those jurisdictions with insufficient HQLA to meet the needs of the banking system. The Committee announced that, subject to certain conditions and limitations, a restricted version of a CLF (an RCLF) may be used by all jurisdictions.

Whether jurisdictions choose to make use of RCLFs is a matter for national discretion. Indeed, the January 2014 announcement clarifies that central banks are under no obligation to offer them. Furthermore, the restrictions agreed by the Committee are intended to limit the use of RCLFs in normal times, and therefore maintain the principle that banks should self-insure against liquidity shocks, and that central banks should remain the lenders of last resort. The introduction of CLFs in the definition of HQLA should mitigate some of the incentives that banks will have to increase borrowing from central banks. However, the CLF is subject to limitations under the amount of Level 2B assets allowed and central banks must still decide whether to offer such a committed liquidity facility and must define what collateral they are willing to accept under such a facility. Therefore, the overall implications of the revised LCR for central bank monetary policy operations are not yet clear.

3.2 Net Stable Funding Ratio

Refinancing Operations

The objective of the NSFR is to improve banks' funding out to a one year horizon. Therefore, where central bank funding is available through longer term operations, such as the Eurosystem's current 3-year Long-Term Repurchase Operation, borrowing through these will increase the level of ASF on the bank's balance sheet. The level to which the NSFR ratio improves overall will, however, also be a function of the level of the RSF factor of the specific collateral that the bank pledges to the central bank. Similar to the effect of the LCR, therefore, banks will be incentivised to borrow from the Eurosystem using non-

HQLA assets in order to improve their NSFR (where the maturity of the operation is greater than one year). It may well be the case that the NSFR will result in central banks having to consider to lengthen the duration of monetary policy operations and liquidity support.

The January 2014 amendments to the NSFR also apply a higher RSF for HQLAs encumbered for a period of between six months and one year. HQLA encumbered for this period were previously treated as unencumbered in the 2010 NSFR but have now been assigned a 50% RSF factor. This may increase the benefit in having non-HQLA encumbered for a maturity of between six months and one year, as opposed to having HQLA encumbered for that period, and should not alter the overall incentives to post non-HQLA as collateral to monetary policy operations of greater than one year maturity.

3.3 Leverage Ratio

The rules around the calibration of the LR exposure measure may also have the potential to impact the effectiveness of monetary policy implementation. The LR is not risk-based, hence cash balances and low-yielding assets are given the same weight as higher risk assets. Therefore, the LR may reduce participation in liquidity absorbing operations as these low-yielding, short-term assets (i.e. 'lending' to the ECB) would count towards increasing the exposure measure and decrease the LR.

An additional potential implication of the LR proposed by BSCB in June 2013 related to off-balance sheet commitments like trade finance. Under the 2013 LR proposal, these items were to be included in the exposure measure at full notional value¹¹. This type of finance is underpinned by the movement of goods and the provision of services and is of particular importance to small and medium size enterprises. Hence to recognise these commitments at full notional value in the exposure measure may result in an increase

¹¹ In the instance where the commitment was unconditionally cancellable at any time without prior notice, then 10 per cent of its notional value was recognised.

in the cost of, or decrease in the supply of, such products at a time when policy makers are trying to encourage growth in these sectors through accommodative monetary policy. In response to the concerns raised during the consultation period in 2013, the BCBS amended the requirements whereby, depending on the type of transaction, anything from 10 per cent to 100 per cent of the value should be recognised in the exposure measure. For example, in the January 2014 LR proposal, for short-term self-liquidating trade letters of credit arising from the movement of goods, 20 per cent of the notional value is included in the exposure measure as opposed to 100 per cent under the 2013 proposal.

4 Other Regulatory Measures and their Money Market Implications

4.1 EMIR

In September 2009 the G20 made a commitment to regulate the over-the-counter (OTC) derivatives market with the aims of reducing risk and increasing transparency of this market. The EU's regulatory measures to address this commitment are the European Market Infrastructure Regulation¹², which came into force on 16th August 2012, and the revised Markets in Financial Instruments Directive II.

Under EMIR, a huge swathe of derivatives previously traded on an OTC basis with little need for collateral or involvement of margin calls, will now need to be traded on an exchange and cleared by a central counterparty (CCP). This is expected to dramatically increase the need for high quality collateral to secure those trades and enable the traders of derivatives to post margin should the value of the positions decline.

To cover its initial and on-going exposure to its clearing members with regard to derivative trades, the CCPs will accept highly liquid collateral with minimal credit and market risk, according to the standards set by EMIR. High quality collateral as outlined in the EMIR framework includes cash, financial instruments, bank guarantees and gold¹³. This, along with other competing demands for HQLA, may further serve to reduce supply of high quality assets for repo markets – which may reduce repo market liquidity and affect money market rates.¹⁴

5 Conclusions

The financial crisis showed that new regulatory measures are needed to ensure that banks and banking systems are more resilient in the future and can respond to liquidity stress. While this motivation for the Basel III regulatory measures is well-grounded, they are likely to have consequences for money markets and monetary policy operations. In view of these consequences, the Basel Committee made a number of amendments to the Basel III ratios in January 2014.

Regarding the potential impact on money markets, the LCR looks set to increase demand for high-quality assets, reduce the supply of these assets for repo markets and potentially reduce the level of repo market activity for lower-quality assets. The LCR will also discourage short-term unsecured borrowing, which may possibly reduce short-term money market rates. The NSFR, meanwhile, is anticipated to impact on repo and money markets by increasing demand for high quality assets and longer-term funding, raising levels of balance sheet encumbrance and potentially reducing activity on short-term money markets. Amendments announced in January 2014 reduce the cliff effects from funding falling below one year in maturity

¹² The US will address this commitment through the Dodd-Frank Act as well as other regulations.

¹³ <http://www.ecb.europa.eu/pub/pdf/other/collateralframeworksen.pdf?a9ca332bcb4e23aa71aaa8f4742833eb>

¹⁴ Both Basel III and EMIR mandate the use of central clearing for counterparties in the financial markets. This is set to further increase the demand for High Quality Liquid Assets (HQLA) to provide good collateral for trading and margin that market participants can transfer to CCPs (Central Counterparties). This has led to the new business of "collateral transformation" which allows banks to pledge their illiquid assets in exchange for more liquid collateral which can then be used to back derivative and other trades.

and may mitigate some of these effects. However, the amendments further incentivise so-called stable funding and may further reduce activity on interbank funding markets. The leverage ratio was also expected to have direct implications for money markets with the possibility of reduced repo activity as banks seek to reduce their exposure measure. The January 2014 amendments allow for netting of repo transactions, albeit subject to certain criteria. This should reduce the implications of the LR for repo markets, although it will depend on the exact implementation of the rules.

The LCR creates incentives for banks to borrow from the ECB using low-quality collateral in order to retain cash. This potentially higher demand could lead to higher bidding rates by counterparties in variable rate tender operations. The introduction of committed liquidity facilities by central banks in the definition of Level 2B HQLA in the January 2014 amendment may reduce these incentives somewhat, depending on whether respective central banks will offer such facilities, and at what terms. The NSFR, on the other hand, is expected to impact less on monetary policy operations, except where additional monetary policy operations of greater than 1-year duration are introduced.

Other regulatory measures such as EMIR are likely to further increase demand for HQLAs by mandating central clearing counterparties and by incentivising banks to post non-HQLA as Eurosystem collateral. This may lead to banks that are not already prone to using own-use collateral with the ECB, to begin to do so in order to maintain as high a stock of HQLA for margining and clearance purposes.

Overall, the Basel III regulations add uncertainty to the outlook for financial markets in the medium term. The amendments announced by the Basel Committee in January 2014 mitigate some of these concerns but unintended consequences may still arise. Further amendment of the NSFR¹⁵ and the leverage ratio are still possible before final implementation and further studies may be necessary to assess the impact of the Basel III rules on money markets and central bank monetary policy operations.

¹⁵ The Basel Committee Consultative Document on Basel III: The Net Stable Funding Ratio, January 2014, has been issued for comment by 11 April 2014.

Statistical Appendix

Statistical Appendix

Data previously published in the Statistical Appendix of the Quarterly Bulletin will be available only on the Central Bank's website from this quarter on.

Statistical data published by the Central Bank of Ireland are accessible on the Statistics page of the website, www.centralbank.ie/polstats/stats/Pages/default.aspx. The statistics previously published in the Quarterly Bulletin are available via this link. Some tables have been expanded to provide more comprehensive data, while additional statistical tables, which were not published in earlier Bulletins, are also included.

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/quarterly/Pages/Data.aspx>

- Financial Accounts for Ireland Quarter 1, 2002 – 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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