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Q4

Central Bank Quarterly Bulletin

Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

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Notes

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

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

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

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

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

6. The following symbols are used:

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

7. As far as possible, data available at mid-September 2010 are included in the Statistical Appendix (Section 3).

8. Updates of selected Tables from the Statistical Appendix, concerning monetary and financial-market developments, are provided in *Monthly Statistics*. 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

	2008	2009	2010(e)	2011(f)
Real Economic Activity				
(Percentage Change)				
Personal Consumer Expenditure	–1.5	–7.0	–1.1	0.4
Public Consumption	2.2	–4.4	–2.0	–3.0
Gross Fixed Capital Formation	–14.3	–31.0	–20.9	–3.3
of which: Building and Construction	–13.2	–34.9	–28.0	–10.6
Machinery and Equipment	–15.3	–19.3	–6.5	7.0
Exports of Goods and Services	–0.8	–4.1	5.4	5.1
Imports of Goods and Services	–2.9	–9.7	2.6	3.4
Gross Domestic Product (GDP)	–3.5	–7.6	0.2	2.4
Gross National Product (GNP)	–3.5	–10.7	–1.7	1.7
External Trade and Payments				
Balance of Payments Current Account (€m)	–10,169	–4,853	–1,983	286
Current Account (% of GNP)	–6.6	–3.7	–1.6	0.2
Prices, Costs and Competitiveness				
(Percentage Change)				
Harmonised Index of Consumer Prices (HICP)	3.1	–1.7	–1.4	1.1
of which: Goods	2.9	–4.1	–2.4	0.5
Services	3.4	1.2	–0.3	1.6
HICP Excluding Energy	2.6	–1.0	–2.5	0.7
Consumer Price Index (CPI)	4.1	–4.5	–0.9	1.4
Nominal Harmonised Competitiveness Indicator (Nominal HCI)	4.5	1.0	–2.9[a]	n.a.
Compensation per Non-Agricultural Employee	4.0	–0.2	–3.0	0.8
Labour Market				
(% Change Year-on-Year)				
Total Employment	–1.1	–8.1	–4.0	–0.4
Labour Force	0.8	–2.4	–2.1	–0.5
Unemployment Rate (ILO)	6.3	11.8	13.5	13.3
Technical Assumptions[b]				
(Annual Average)				
EUR/USD Exchange Rate	1.47	1.39	1.30	1.28
EUR/GBP Exchange Rate	0.80	0.89	0.85	0.83
Oil Price ($ per barrel)	97.7	61.9	77.2	81.5
Interbank Market — Euribor[c] (3 month fixed)	4.6	1.23	0.79	1.11

a Based upon the annual change in the average nominal HCI for the first seven months of 2010.

b The technical assumption made is that exchange rates remain unchanged at their average levels in early-September. 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

At this time of heightened financial market tensions, the country faces challenging decisions on a range of issues. By far the most pressing are those relating to tackling the underlying fiscal situation, normalising the banking sector and regaining lost competitiveness. Further progress on all these aspects are critical to ensuring that the economy returns to a healthy growth path of output and employment following a recession of almost unprecedented depth and duration.

Economic growth has slowed globally in the second half of the year, following a relatively strong start to the year in many major economies. This has naturally increased concerns about the outlook. However, the central scenario of all the major international agencies, at this stage, is that this slowing does not signal anything more than a loss of momentum in the recovery. It reflects the fact that this recovery, like most others following serious financial crises, is more likely to be gradual and uneven than consistently robust. The conclusion seems to be that, for Ireland, in the short-term, the external environment is likely to be positive but not very dynamic.

Taking account of the most recent data, the latest projection is for an average annual increase in the volume of GDP of 0.2 per cent this year, while GNP is forecast to fall by 1.7 per cent. The divergence between the two measures reflects the relative strength of exports. Encouragingly, the latest trade data indicate that the export recovery has become somewhat more broadly based and now encompasses some more 'traditional' segments of the manufacturing sector. While domestic demand remains weak, there is evidence that consumer spending, although fluctuating somewhat, is starting to stabilise. The continuing weakness of investment, however, remains a considerable drag on growth. Reflecting both the relative weakness of domestic demand and the general pattern that employment lags output developments, employment has continued to fall, although at a diminishing rate.

Looking ahead to 2011, the outlook will be influenced by the extent to which the positive impulse from the external side of the economy begins to be felt throughout the economy. As already noted, economic growth in the advanced economies has moderated and forecasts for the international economy for 2011 have been revised slightly downwards in recent months. Reflecting this, the outlook for the Irish economy (on current budgetary projections) is for growth in 2011 to be about 2.4 per cent in GDP terms and 1.7 per cent in GNP terms, slightly lower than foreseen at the time of the last Quarterly Bulletin. The risks to this outlook are tilted to the downside.

As regards the main policy issues, further progress has been made in relation to the banking sector with the recent announcement of the Government's plan to re-structure Anglo Irish Bank. The associated capital requirements have been announced and have brought increased clarity, within the limits of any exercise of this kind, as to the likely fiscal costs of government intervention in the sector. Notwithstanding these developments, trading conditions facing Irish banks in the market for wholesale funding remain difficult. This reflects concerns about both the banking sector itself and the broader fiscal situation in Ireland. Borrowing costs for the State and the banking sector are now very closely aligned, reflecting the increased links between the two sectors, as well as the underlying tensions in the markets. The raised level of these costs reflects the fact that lending to Ireland, through either channel, attracts a risk premium that was absent in earlier years. Further progress is, therefore, needed in establishing the banking system on a sound footing so that it can assist in the recovery of the economy. This will entail the additional strengthening of the capital position of banks up to the levels prescribed by the Financial Regulator, either from private sources, in so far as possible, but also from the state where required.

An even more pressing policy issue at the moment is the underlying fiscal position. Even without the costs of supporting the banking sector, the State's expenditures are running well in excess of its income. This gap amounted to 14.6 per cent of GDP in 2009 and is likely to be about 11.6 per cent of GDP in

2010. In order to address this clearly unsustainable situation, the Government has agreed an adjustment path for the deficit with the EU Commission, which is designed to bring it down to less than 3 per cent by 2014. This path seeks to strike a balance between the need to bring the public finances onto a sustainable footing and limiting the risk that a very rapid adjustment would affect the economy's prospects for recovery.

Against the background of sharply increased concerns about fiscal sustainability, the main priority in the short-term is to ensure that the 2011 budget credibly demonstrates the first step of a reprogrammed tighter fiscal plan aimed at getting back on to a convergent path. This will necessarily mean a larger adjustment than the €3 billion foreseen until recently. Indeed, a review of the adjustment path should be completed as a matter of urgency, in order to ensure that it takes account of the many developments that have occurred since it was originally agreed. These include a generally lower level of prices in the economy, higher debt servicing costs including those related to intervention in the banking sector, and the prospect of somewhat lower than projected real growth next year. Equally important is to provide more details on how the adjustment will be achieved, as this will add to the credibility of fiscal reform. Putting together a detailed programme of the changes required to get to a fully sustainable position is needed in the current climate of concern about sovereign borrowing and against a background of further fiscal reforms in other countries. These actions would help to confirm the view that Ireland's debt burden will stabilise, although at a high level relative to its income, and will then start to reduce over time. This, in turn, should help to ultimately lower the overall burden of the adjustment on taxpayers and borrowers, by promoting a reduction in borrowing costs for the State, as well as limiting the upward pressure on interest rates generally in the economy. This would particularly be the case if a consensus, or at a minimum acceptance, were to emerge around the details of a credible reprogramming of the adjustment.

The final key determinant of the economy's growth prospects is the evolution of competitiveness. During the boom years, prices and wages moved to unsustainably high levels relative to the country's trading partners. There has been a noticeable improvement in conventional measures of competitiveness, such as relative unit labour costs, in the last two years. Some of this has been due to sectoral changes in the economy, however, such as the contraction of the labour intensive construction sector, so that the underlying improvement has not been as great, suggesting the need for further wage restraint relative to Ireland's main trading partners. The underlying strengths that were built up in the earlier years of strong growth in the 1990s largely remain in place and these can contribute positively to growth once wage and price competitiveness is more fully restored. There are areas that still require further reforms to increase competition such as those identified in the reports of the Competition Authority, such as some professional services, health services provision and other areas. There is a need to press ahead with further reforms in the relevant areas in order to support medium term growth prospects. A combination of these reforms, further improvements in the country's competitive position, along with capital strengthening in the banking sector and comprehensive measures to address the underlying fiscal position, would enhance considerably the country's ability to cope with the current situation.

The Domestic Economy

Forecast Highlights

- Quarterly National Accounts data point to a decrease in GDP, in seasonally adjusted terms, of 1.2 per cent during the second quarter of this year, following an increase of 2.2 per cent in the first quarter. For 2010 as a whole, GDP is forecast to increase in real terms by 0.2 per cent. GNP, however, is expected to decline by about 1.7 per cent. The prospects are for growth in GDP terms of about 2.4 per cent next year with GNP increasing by about 1.7 per cent.

- The divergence between GNP and GDP growth reflects the uneven peformance across different sectors, with growth only really evident in the export sector. The strength of exports, together with increased interest payments on foreign debt, has contributed to significantly higher net factor income outflows and these mainly account for the difference between the respective levels of GDP and GNP.

- The improved trade performance should contribute to a significant improvement in the Balance of Payments with the prospect of a return to a broadly balanced position by next year.

- Labour market conditions have remained weak this year reflecting both the continued contraction in domestic demand and the typical lag between employment and output developments. For 2010 as a whole, total employment is projected to decline by about 4 per cent. At this stage a modest average decline in employment of about 0.4 per cent is forecast for next year.

- A decline in labour force participation and the resumption of net outward migration has mitigated the impact of employment losses on the rate of unemployment, limiting the likely increase in the unemployment rate to an average of 13.5 per cent this year with the prospect of a modest reduction in the unemployment rate to about 13.3 per cent next year.

- The consumer price level is projected to record a further decline this year. The Harmonised Index of Consumer Prices (HICP) inflation rate is forecast to average about –1.4 per cent in 2010. Consumer Price Index (CPI) inflation is forecast to average –0.9 per cent this year, an upward revision on the projection in the previous Bulletin due mainly to recent mortgage interest rate increases.

- Annual HICP inflation is set to turn positive during the final quarter of this year but core inflationary pressures are likely to remain subdued into next year. HICP inflation is forecast to average about 1.1 per cent in 2011 while CPI inflation is forecast to average about 1.4 per cent.

Domestic Economic Overview

Activity in the Irish economy is projected to stabilise during the course of this year following a severe and protracted contraction during the previous two years. In GDP terms a volume increase of about 0.2 per cent seems likely at this stage. However GNP is expected to decline by about 1.7 per cent. The divergence between GNP and GDP growth reflects the unbalanced nature of the recovery which has been mainly driven by exports with domestic demand continuing to decline. The strength of exports, together with increased interest payments on foreign debt, has contributed to significantly higher net factor income outflows and these account for the difference between GDP and GNP in the National Accounts. Recently released Quarterly National Accounts data point to a decrease in GDP, in seasonally adjusted terms, of 1.2 per cent during the second quarter of this year. This follows an increase of 2.2 per cent in the first quarter of the year. GNP declined marginally in the second quarter, by 0.3 per cent following a decline of 1.2 per cent in the first quarter.

Although downside risks to the external environment have become somewhat more elevated of late, the prospects for world demand still remain reasonably favourable. On this basis, exports should continue to sustain overall GDP growth in the second half of this year and in 2011. In addition, the negative contribution from domestic demand should begin to moderate significantly over the next year as the contraction in investment expenditure bottoms out and consumer expenditure picks up modestly in line with disposable incomes and some slight fall in the savings rate. The projection for real GDP growth next year has been revised downwards to 2.4 per cent since the last Bulletin, with GNP forecast to increase at a rate of about 1.7 per cent. This revision reflects, in the main, the less favourable outlook for external demand.

The recovery in world demand which began during the course of last year strengthened in the first half of 2010 but some moderation is emerging in the second half of the year, reflecting the waning impact of policy stimuli that supported the recovery in its initial stages. While recent indicators point to a somewhat greater than expected moderation in demand in some industrialised countries in recent months, the outlook for demand in advanced economies still remains positive. Nevertheless, downside risks remain, associated with ongoing financial turbulence and increased uncertainty regarding fiscal sustainability in some advanced economies. On the basis of the most recent projections by international agencies such as the OECD, IMF and EU Commission, real GDP in Ireland's main trading partners, weighted by their shares in Irish exports is projected to recover from a contraction of 3.8 per cent in 2009 to positive growth averaging 1.6 per cent in 2010 and 1.9 per cent in 2011.

Export volumes have benefited from the strength of external demand this year and from the significant improvement in Irish cost competitiveness both in absolute and relative terms. The recovery in exports was initially focussed on the broad chemical sector with traded services also performing strongly. However, recent indicators point to a broadening out to include, most notably, indigenous sectors such as food and beverages. In the first half of the year, exports increased by 7.6 per cent in seasonally adjusted terms compared with the second half of last year. Some moderation in the rate of expansion is expected in the second half of the year in line with the outlook for external demand, yielding a volume increase of about 5.4 per cent for the year as a whole. The outlook for next year is for a further increase in export volumes of about 5.1 per cent. Overall, imports are likely to record an increase of about 2.6 per cent this year. However, in line with positive outlook for export growth and the prospect of a stabilisation in domestic demand, a pick-up in import volume growth is likely next year, perhaps in the region of 3.4 per cent. The improved trade performance should contribute to a significant improvement in the balance of payments with the prospect of a return to a balanced position by next year.

Domestic demand continues to decline this year, albeit at a moderating rate compared to the severe contraction last year. Investment expenditure remains the weakest component of aggregate demand, declining by 19.9 per cent year-on-year in the second quarter following a decline of 31.5 per cent, year-on-year in the first quarter. In the housing market, leading indicators, such as new house registrations, point to about 13,000 completions this year with the prospect next year of a further decline to about 10,000 units. Reflecting the overhang of unsold stock and the weakness of demand conditions generally, commercial construction is also likely to decline significantly this year, with a further more modest decline in prospect for 2011. A further factor contributing to the negative outlook for non-residential construction is the planned consolidation of the public capital programme which will be reflected in a significant reduction in the volume of infrastructural investment, albeit offset to some extent by tender price reductions in the current more competitive environment.

The trend in consumer spending, although still quite volatile, has shown signs of moving towards stabilisation this year. Headline retail sales have been boosted by a partial recovery in car sales on foot of incentives introduced in Budget 2010. However, the underlying trend, excluding the motor trade, has been more muted. The weakness in consumer demand reflects the weak trend in disposable incomes. Consumer sentiment remains quite fragile although there appears to be a partial reversal in the rise in precautionary savings last year. For the year as a whole, consumer spending is projected to decline by 1.1 per cent. Next year, the prospect of some increase in disposable incomes, the gradual bottoming out of the labour market and a modest decline in the savings rate, which nevertheless remains quite elevated, should support an increase in consumer expenditure of about 0.4 per cent.

Labour market conditions have remained weak this year reflecting both the continued weakness in domestic demand and the typical lag between employment and output developments. Employment losses have been widespread with the greatest declines occurring in those sectors most dependent on conditions in the domestic economy such as construction and domestically orientated services. For 2010 as a whole, total employment is projected to decline by about 4 per cent. On the basis of a pick-up in overall output growth next year and a gradual stabilisation in domestic demand, the decline in employment should moderate significantly during the course of the year with the prospect of some modest growth in employment by the end of the year. At this stage a modest average decline in employment of about 0.4 per cent is forecast for next year. A decline in labour force participation and the resumption of net outward migration has led to a fall in the size of the labour force and this has mitigated the impact of employment losses on the rate of unemployment. This trend is expected to persist for the remainder of this year and in 2011 thereby limiting the increase in the unemployment rate to an average of 13.5 per cent this year with the prospect of a modest reduction in the unemployment rate to about 13.3 per cent next year.

The pass-through of higher commodity prices and the stronger sterling *vis-à-vis* the euro has applied upward pressure on the price level this year. However, these international factors have been offset by the weak labour market and constrained pricing power in the domestic economy. As a result, as measured by the HICP, the price level in August was close to its level at the end of last year. Inflationary pressures are likely to remain subdued for the remainder of the year but a negative carryover from last year means that the annual average HICP inflation rate is likely to be about –1.4 per cent. The annual CPI inflation rate rose sharply during the year due to base effects and also recent increases in mortgage interest rates. The latter effect largely explains the upward revision of the projected annual average CPI inflation rate to –0.9 per cent for this year. Annual HICP and CPI inflation are then likely to average about 1.1 per cent and 1.4 per cent, respectively, next year. The risks for this outlook appear to be broadly balanced

Table 1: Expenditure on Gross National Product 2009, 2010[f] and 2011[f]

	2009	% change in		2010[f]	% change in		2011[f]
	€ million	Volume	Price	€ million	Volume	Price	€ million
Personal consumption	84,331	–1.1	–1.5	82,188	0.4	1.1	83,425
Public consumption	27,718	–2.0	–6.3	25,441	–3.0	–0.2	24,641
Gross domestic fixed capital formation	24,731	–20.9	–5.7	18,444	–3.3	–1.3	17,604
of which:							
• Building and construction	16,586	–28.0	–9.4	10,821	–10.6	–2.6	9,423
• Machinery and Equipment	8,145	–6.5	0.1	7,623	7.0	0.3	8,181
Value of physical changes in stocks	–2,284			–100			1,000
Statistical discrepancy	748			748			748
Gross domestic expenditure	**135,244**	**–3.3**	**–3.1**	**126,721**	**0.0**	**0.5**	**127,418**
Exports of goods & services	144,782	5.4	1.3	154,602	5.1	1.2	164,463
Final demand	**280,026**	**1.2**	**–0.8**	**281,323**	**2.8**	**0.9**	**291,881**
Imports of goods & services	–120,380	2.6	0.6	–124,305	3.4	1.0	–129,841
Gross domestic product	**159,646**	**0.2**	**–1.8**	**157,018**	**2.4**	**0.8**	**162,040**
Net factor income from rest of the world	–28,405			–31,290			–33,240
Gross national product	**131,241**	**–1.7**	**–2.6**	**125,728**	**1.7**	**0.7**	**128,800**

and relate to the projected recovery both domestically and internationally and the future path of mortgage interest rates.

The economy continues to undergo a substantial recovery in price and cost competitiveness. Relative price trends are boosting competitiveness, with the Irish annual HICP inflation rate averaging about 3 percentage points lower than the euro area annual HICP inflation rate in the three months to August. In addition, recent exchange rate movements have been quite favourable. Sterling appreciated significantly against the euro during the second quarter of this year and this has provided some support to indigenous firms, which often tend to compete directly with UK-based suppliers and particularly in the supply of food produce. A recovery in cost competitiveness continued as unit labour cost growth in Ireland was significantly lower relative to those in the main trading partners over the past year and further significant falls in commercial property prices and rents were also recorded during the same period. A sustained reduction in the costs of doing business should help to bolster exports and support a recovery in employment growth in the medium term.

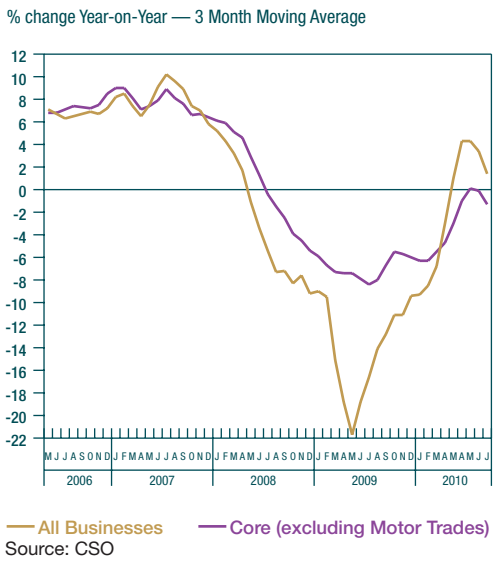
Demand

Consumer Spending

Consumer expenditure fell sharply in the first quarter of 2009 since when the pace of contraction has eased considerably, edging closer towards finally stabilising. It is worth noting that the motor trade component heavily influenced the profile of headline consumer expenditure in recent quarters. The car scrappage scheme and some further recovery in consumer sentiment boosted motor sales during the first quarter of the year, although, by historical standards, motor sales were still quite low. Indeed, with motor trades stripped out, core retail sales increased modestly during each quarter of the first half of this year. In contrast, services consumption declined significantly in the second quarter, following positive growth in the first quarter of this year. The further decline in consumption in the second quarter reflects the continuing falls in disposable incomes and weakness in the labour market.

The second half of this year is likely to see some further softening in consumer demand, reflecting income constraints and a recent deterioration in consumer sentiment in an environment of heightened uncertainty. Also, as the announcement of Budget 2011 comes more into view, consumers may choose to hold off on some discretionary expenditure, particularly for big-ticket items, until a more discernible picture emerges of likely disposable income developments for next year. Overall, personal consumption is forecast to decline by 1.1 per cent, in year-on-year terms, this year. Turning to 2011, personal consumption growth will be supported to some extent by an improvement

Chart 1: Index of Volume of Retail Sales



Source: CSO

in disposable incomes, but also by a modest decline in the savings rate which, nevertheless, remains quite elevated. To the extent that car scrappage schemes tend to prompt some consumers to bring forward purchases, there is likely to be some easing in the contribution of car sales for next year. A modest improvement in consumer sentiment is assumed but consumers' spending behaviour on the whole is set to remain reasonably cautious and households are likely to look to pay down debt in the face of higher interest rates. Accordingly, some moderate growth in personal consumption of 0.4 per cent is projected for 2011.

Investment

Prospects for recovery in domestic demand remain overshadowed by persistent weakness in investment. Recently released Quarterly National Accounts data relating to the second quarter of 2010 confirm that the building and construction sector has now shrunk by 73.8 per cent in real terms, from its peak reached in the opening quarter of 2007.

There has been little by way of respite on the investment front since the publication of the last Bulletin, with investment volumes continuing to contract into the second quarter, building costs beginning to creep back up, and non-residential tender prices showing little sign of reversal in their rapid downward adjustment. The Ulster Bank Construction PMI however does suggest that the decline in commercial activity levels appears to have bottomed out, with the latter having shown tentative signs of recovery over the past two months. Contrary to conventional assumptions, the CSO house building cost index appears to suggest a slight upward movement in building costs over the first half of 2010. The headline source of weakness in investment however continues to come from the residential building sector, although the pace of decline fell back slightly to 32.9 per cent in annual terms during the second quarter of 2010.

At just under 8,400 units for the year to July, housing completions are down 50 per cent in annual terms, with this pace of decline having remained fairly stable over the past number of months. As the closing quarter of the year tends typically to exhibit a proportionately greater number of completions, it is anticipated that full year completions may now reach 13,000 units, up marginally from previous estimates. On the basis of second quarter data from the *ptsb ESRI house price index*, prices have now fallen 35 per cent, with the July figures indicating that the pace of contraction has begun to decelerate somewhat. However, it should be noted that these data come with some important caveats, in particular, the unusually low number of transactions of late and the fact that the index lags what is clearly a declining market by several months. With further price falls in prospect, together with a challenging credit environment for consumers, residential investment is expected to record a significant real decline this year. At this stage, a volume decline of about 35 per cent is forecast. With new build completions expected to dwindle back to some 10,000 units in 2011, but allowing for some stabilisation in activity on the improvements side, residential investment is anticipated to contract by 6.5 per cent in 2011.

Having fallen by 32 per cent in annual terms in the opening quarter of 2010, non-residential

investment sustained a further decline of 29 per cent year-on-year in the second quarter. However, evidence from the Ulster Bank PMI suggests that this sub-sector has begun to show tentative signs of stabilisation suggesting it may pick up somewhat over the remainder of this year. On the basis of anticipated government investment levels this year, followed by the now confirmed lower levels in 2011 (as stipulated in the public capital programme), the non-residential component of construction is forecast to contract by about 22 per cent this year, followed by a further decline of about 15 per cent in 2011. This figure however will be contingent on the final contents of Budget 2011.

Stock Changes

Following a significant decline in inventory levels last year, stock changes are expected to make a positive contribution to output growth this year. A modest recovery in inventory levels is projected for next year in line with improving prospects for output growth.

Government Consumption

On the basis of expenditure plans as set out in the 2010 Revised Estimates Volume, government consumption is projected to decline in real terms by about 2 per cent this year. A contraction in real government consumption of about 3 per cent is expected in 2011.

External Demand and the Balance of Payments

Merchandise Trade

Following a return to growth in the first quarter of 2010, merchandise exports accelerated in the second quarter. According to the Quarterly National Accounts, the volume of merchandise exports increased by 4.9 per cent in the second quarter of 2010; this compares with an increase of 3.5 per cent in the previous quarter. The CSO's External Trade Statistics provide some insight into the sectoral profile of merchandise export activity. The recovery in merchandise exports appears to have broadened out somewhat during the year. Most notable in this respect were the signs of growth amongst indigenous exporters — the food and beverages sector recorded a year-on-year increase of 6.9 per cent in value terms during the first half of 2010. The performance of medical and pharmaceutical products, which accounts for around 25 per cent of overall merchandise exports, remained buoyant with a year-on-year increase of 12.9 per cent in value terms during the first half of 2010.

The upward momentum in merchandise export activity during the second quarter of 2010 contrasts somewhat with developments in global trade flows. Based on the latest estimates (Dutch Central Planning Bureau), world trade seems to have continued to expand in the second quarter of 2010, albeit at a reduced rate to that of the previous quarter — it is estimated that the volume of world trade in goods expanded by 3.6 per cent in the second quarter of 2010, following an increase of 5.7 per cent in the first quarter. While the recovery in external demand is projected to continue during the second half of 2010, its pace seems set to moderate somewhat reflecting the ending of some temporary effects such as policy stimuli and the inventory cycle, which supported the recovery in its initial stages. Evidence from the new export orders index of the Manufacturing Purchasing Managers Index (PMI) for July and August is consistent with such an outlook; the index suggests some softening of merchandise exports is in prospect during the third quarter. Furthermore, there is some uncertainty regarding the sustainability of the buoyant performance of the pharmaceuticals sector, since, as highlighted in previous Quarterly Bulletins, output from the pharmaceutical sector tends to be inherently volatile due to such factors as patents and product cycles. Accordingly, some loss of momentum in merchandise exports is envisaged during the second half of 2010, yielding an average annual increase in volume terms of 3.8 per cent. As regards 2011, merchandise exports are expected to increase further, albeit at a slightly reduced rate compared to 2010, with growth in the region of 3.5 per cent.

Reflecting the acceleration in export induced demand for imported inputs, merchandise import volumes increased by 3.2 per cent annually in the second quarter of 2010. This

Table 2: Merchandise Trade (Adjusted) 2009, 2010[f] and 2011[f]

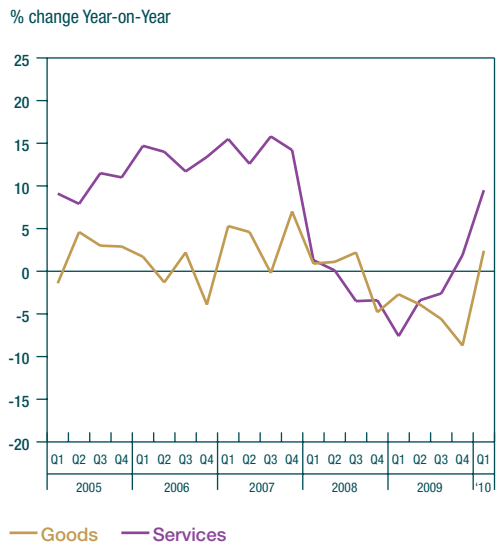
	2009	% change in		2010[f]	% change in		2011[f]
	€ million	Volume	Price	€ million	Volume	Price	€ million
Merchandise exports	77,026	3.8	1.7	81,319	3.5	1.3	85,308
Merchandise imports	–44,659	2.3	0.9	–46,103	2.8	0.9	–47,804
Merchandise trade balance (adjusted)	32,367			35,216			37,504
(% of GNP)	24.7			28.0			29.1

represents the first such increase since the final quarter of 2007. The bulk of the pick-up in merchandise import activity during this period related to pharmaceuticals and petroleum. As regards the outturn for 2010 as a whole, an average annual increase in the volume of merchandise imports in the region of 2.3 per cent is currently envisaged. Looking ahead to 2011, merchandise imports seem set to be supported by a recovery, albeit gradual, in domestic demand together with some further export-induced demand. Accordingly, an increase in merchandise import volumes of around 2.8 per cent is currently projected.

Services, Factor Incomes and International Transfers

Similar to merchandise exports, growth in the volume of services exports accelerated in the second quarter of 2010. According to the Quarterly National Accounts, services export volumes increased by 10.7 per cent in the second quarter of this year, following the pronounced year-on-year increase of 9.5 per cent in the first quarter. The increase in services exports was broadly based at a sectoral level, with annual increases in seven of the nine sectors in the second quarter. There was, however, considerable variation in terms of the magnitude of the increases recorded. Amid improving sentiment, computer services were exceptionally buoyant in the second quarter of 2010, with a year-on-year increase in value terms of 17.9 per cent. In contrast, the second quarter outturn for travel and tourism services was somewhat dampened by the disruption arising from the volcanic ash cloud, with an annual decline of 17.1 per cent in value terms.

Chart 2: Value of Exports



Source: CSO Quarterly National Accounts

Short-term indicators suggest that the pace of services export growth, has moderated somewhat during the third quarter of 2010 — in August, the new export orders index of the Services PMI stood at 53.8 compared with 58.6 in June. Based on the Services PMI it would appear that some loss of momentum in services exports will take hold during the second half of 2010 largely owing to projected developments in world trade. Looking ahead to 2011, growth in services exports is expected to remain reasonably healthy, sustained by continued growth in external demand.

Services imports increased by 8 per cent in volume terms in the second quarter of 2010. The bulk of this jump related to royalties and licences, with an annual increase in value

Table 3: Balance of Payments 2009, 2010[f] and 2011[f]

€ million	2009	2010[f]	2011[f]
Current account			
• Merchandise trade balance (adjusted)	32,367	35,216	37,504
• Services	–8,415	–5,439	–3,458
• Net factor income from rest of the world	–27,901	–30,790	–32,740
• Current international transfers	–901	–970	–1,020
Balance on current account	**–4,850**	**–1,983**	**286**
(% of GNP)	–3.7	–1.6	0.2

terms of 22.4 per cent. Services imports are expected to increase further during the second half of 2010. As regards the outlook for 2011, it is envisaged that services imports will remain buoyant, underpinned by further growth from the multi-national sector.

Net factor income outflows rose by 7.9 per cent annually in the second quarter of 2010. Net factor income outflows are projected to increase for 2010 as a whole largely reflecting buoyant export activity amongst multi-national firms. A further, albeit less pronounced, increase in net factor outflows is expected in 2011. International transfers were negative in the year to the second quarter of 2010 and are expected to remain negative during the second half of 2010 and further into 2011. Reflecting the projected trends of the various current account components, a deficit of around 1.6 per cent of GNP is anticipated in 2010. The current account is expected to move into modest surplus in 2011, with a surplus in the region of 0.2 per cent of GNP currently projected.

Supply

Industry and Services Output

Provisional data relating to the first seven months of the year indicate that manufacturing output continues to recover after a sharp contraction in 2009. Having grown by 4.6 per cent over the year to July, the data signal a continued rise in the annual growth trajectory as the year has progressed.

The modern sector continues to grow solidly, having expanded by 6.7 per cent over the year to July, with the performance of chemicals rebounding significantly after their poor performance throughout 2009. The pace of expansion in pharmaceuticals has begun to slow somewhat relative to the strong growth reached last year. Nonetheless, having grown by 16.9 per cent over the year to July, they continue to prop up the headline output figures of the sector overall, both in value added and volume expansion terms.

Perhaps the most noteworthy advance since the last Bulletin relates to the signs of a reversal in fortunes of the traditional sector. Having experienced double digit declines throughout 2009, output in the sector has shown strong signs of recovery in 2010. However, stripping out the impact of the chemicals and pharmaceuticals on manufacturing performance reveals a more realistic picture of the underlying performance of the sector overall, with the latter having contracted by 7 per cent in July in annual terms — its lowest rate of contraction since 2008. This improvement reflects the halt in decline of the traditional sector, as distinct from emergent strength in the other non-pharmaceutical components of the modern sector.

Evidence drawn from the NCB Purchasing Managers Index (PMI) indicates that the manufacturing sector has expanded in each of the past six months, in contrast to the former persistent contraction entrenched since December 2007. Following a particularly strong second quarter, the rate of expansion has slowed over the past three months. Export orders, however, continue to outpace expansion in output overall, suggesting that these recent improvements have been facilitated by external demand. That both new orders and export orders continue to expand

Table 4: Industry and Manufacturing Output, Annual Percentage Change

	Industrial Output			
	Modern	Other	Manufacturing	Total Industry
1999	21.3	9.2	15.0	14.8
2000	19.1	9.7	14.6	14.3
2001	16.3	5.5	11.4	11.0
2002	13.0	2.6	8.5	8.2
2003	7.0	4.0	5.6	5.7
2004	0.3	2.5	1.1	1.2
2005	5.2	2.3	4.1	4.0
2006	4.1	1.6	3.3	3.1
2007	6.9	3.0	5.6	5.2
2008	–0.8	–4.1	–2.9	–2.5
2009	2.2	–14.1	–4.1	–3.8
2010[f]	5.3	0.1	2.6	2.5
2011[f]	3.1	0.0	1.5	1.7
Average 1999-2011	7.9	1.7	5.1	5.0

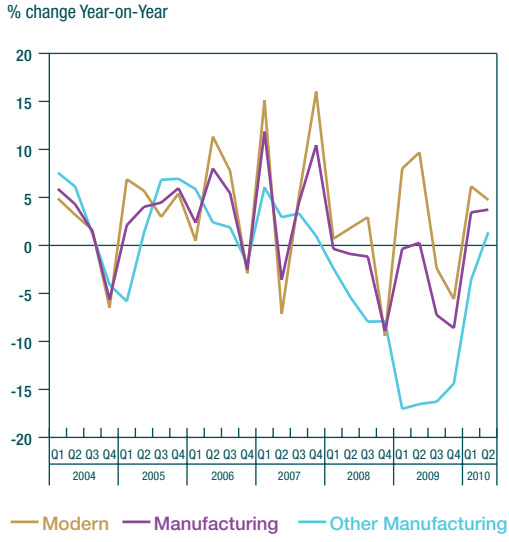
Note: Industrial production indices report output volumes excluding the effect of price changes, using Wholesale Price Indices as deflators. WPIs were revised by the CSO in June 2010 in line with NACE rev2 classification. Accordingly, the unadjusted industrial production series has also been revised back to 2006. The most significant effects on the series arising from the price changes occur in the Modern sector and are most evident in Q1 and Q3 of 2009. Overall, these effects serve to dampen output growth somewhat relative to previous Bulletin publications.

alongside almost stationary output levels suggests tentative evidence of destocking, with this trend further corroborated by the continued sharp contraction in the finished goods stock sub-series. Output prices have remained stable since April, having previously contracted aggressively since November 2008, pointing to evidence of price recovery in the sector over the past number of months.

Relative to projections published at the time of the last Bulletin, growth prospects for the modern sector have been revised upwards to 5.3 per cent in full year terms for 2010, to reflect the ongoing recovery in chemicals and continued strong performance of pharmaceuticals. The outlook for overall industrial output now appears brighter, given the turnaround of the traditional sector, which previously had dampened the recovery prospects for the manufacturing sector overall. In light of the still positive outlook for global demand, together with the export-oriented growth prospects for the Irish economy, volume output for the manufacturing sector overall is now projected to be somewhat stronger in 2011.

Recently released Quarterly National Accounts data for the second quarter of 2010 confirm the trend in evidence since the beginning of the

Chart 3: Volume of Industrial Production



Source: CSO

year, with the gap between the performance of the services and manufacturing sectors widening. On a National Accounts basis, output in Other Services contracted in the second quarter by 2 per cent in annual terms, although the August Services PMI continues to paint a brighter, more forward looking picture for the sector, driven in particular by more buoyant confidence and new business activity levels.

Agricultural Output

Agricultural output has undergone a marked improvement in the first half of 2010 when compared to 2009. Exchange rate developments have improved the competitiveness of Irish exports in global markets, and stronger demand has, in turn, led to higher commodity prices. This is reflected in price data from the CSO, which shows that for the first 6 months of 2010, agricultural output prices increased 2 per cent year-on-year. The data, however, do not yet reflect any of the cereal price increases experienced this year, which will not filter through until August data are released. In contrast, input prices fell 6 per cent over the same period resulting in an improvement in the terms of trade for farmers, reversing the trend of last year.

The most recent Quarterly National Accounts show that output in the Agriculture, Forestry and Fishing sector (not directly comparable to Table 5) declined by 0.4 per cent in the second quarter of 2010 when compared to the previous quarter, and followed a 1.4 per cent increase in the first quarter of the year.

According to the recently published 'Annual Review and Outlook for Agriculture, Fisheries and Food, 2009/2010' from the Department of Agriculture, Fisheries and Food, the medium term global outlook is for commodity markets to gradually recover, amid support from structural factors such as growth in global food demand, the development of the bio fuel sector and the long term decline in food crop productivity growth.

The outlook for the sector for the year remains largely positive. Cereal prices are expected to be considerably higher than last year amid favourable Irish harvest conditions along with lower than expected global production and, despite potentially lower than anticipated yields as a result of earlier bad weather, gross margins are expected to increase. Similarly, dairy sector prices have recovered strongly and global demand has strengthened. Overall, prices are projected to increase over the medium-term, and combined with depressed input costs, farm incomes are expected to rise by around 14 per cent this year. Risks to the downside, however, remain, as ongoing energy price increases and commodity price volatility may exert downward pressure on the anticipated rise in farm income.

The Labour Market

According to the Quarterly National Household Survey, labour market conditions continued to deteriorate during the second quarter of 2010. Employment declined by 0.4 per cent, quarter-on-quarter, in the second quarter of 2010, when adjusted for seasonal factors and, as a result, employment levels have now returned to mid-2004 levels. Nevertheless, the second quarter outturn is a noticeable improvement relative to that of recent quarters as it represents the smallest quarterly decline in both absolute and relative terms since the first quarter of 2008. At the sectoral level, the weakness of employment was broadly based, with ten of the fourteen economic sectors declining annually in the second quarter of

Table 5: Summary of Agricultural Output and Income 2009[e], 2010[f] and 2011[f]

	2009[b]	% change in			2010[f]	% change in			2011[f]
	€ million	Value	Volume	Price	€ million	Value	Volume	Price	€ million
Goods output at producer prices[a]	4,768	6.2	0.5	5.7	5,063	3.6	1.1	2.5	5,245
Intermediate consumption	4,068	1.6	–0.6	2.2	4,133	2.9	0.9	2.0	4,253
Net subsidies plus services output less expenses	1,835	–1.8			1,802	–0.9			1,786
Operating surplus	1,612	14.5			1,845	3.8			1,915

[a]Including the value of stock changes.
[b]CSO final estimates.

2010. There was, however, substantial variation in terms of the magnitude of these declines. The construction sector continued to account for the bulk of employment losses in the second quarter, with a year-on-year decline of 19.4 per cent. Employment losses in three economic sectors, namely, construction, industry and wholesale and retail, although amounting to less than 50 per cent of total output, accounted for almost 72 per cent of the overall employment decline in the second quarter of 2010. Such a high sectoral concentration of job losses suggests that the rate of structural unemployment has increased.

More timely labour market indicators are consistent with further labour demand weakness in the third quarter of 2010. The average monthly increase in the number of persons on the Live Register in July and August 2010 was 5,500 persons, when seasonally adjusted. Such an outturn is consistent with a contraction in labour demand during the third quarter and, as a result, labour demand weakness is expected to persist during the second half of 2010 to yield an average annual decline in employment of 4 per cent for the year as a whole. Employment levels are expected to be broadly unchanged in 2011, with a decline in the region of 0.4 per cent. The outlook for employment reflects, in turn, the projected export-led nature of the recovery in activity, which is expected to be less labour-intensive. As regards developments at a sectoral level, employment in the construction sector is expected to continue to decline throughout the projection period. Further employment losses are also expected in the financial, insurance and real estate sector arising from the ongoing restructuring of the banking system. The general moratorium on recruitment is expected to weigh upon public sector employment levels in 2010 and 2011.

The labour force continued to trend downwards in the second quarter of 2010, with a year-on-year decline of 2.3 per cent. Such a decline reflects a further falloff in the contribution from both participation and demographic factors, albeit to varying degrees. Over two-thirds of the decline in the labour force in the year to the second quarter of this year was attributable to a fall in the participation rate, which declined by 1.2 percentage points to 61.3 per cent in this period. The negative contribution arising from demographic factors, namely, migratory flows and natural increase, in the second quarter of 2010 was broadly in line with that of the first quarter, with a decline of around 16,000 persons. The dampening effect of demographic developments during the year to the second quarter of 2010 was underpinned by net outward migration. The other component of demographic change, natural increase, was the sole source of labour force growth in the second quarter of 2010. The falloff in the labour force continued to dilute the impact of contracting labour demand on the unemployment rate in the second quarter — the seasonally adjusted unemployment rate reached 13.2 per cent in the second quarter of 2010, up from 12.9 per cent in the first quarter of 2010.

Some further decline in the labour force is envisaged during the second half of 2010, producing an overall annual decline of 2.1 per cent. As regards the composition of the decline in the labour force, the negative contribution arising from participation is expected to persist in view of weak labour demand. The projected falloff in the labour force is, however, also expected to depend upon the migratory response, with net outward migration projected in 2010 and 2011. The projected decline in the labour force during 2010 is expected to dilute the impact of the contraction in employment on the unemployment rate, albeit not sufficiently to avoid an increase, with the unemployment rate expected to average around 13.5 per cent this year. Taking account of the outlook for employment and the labour force in 2011, a modest reduction in the unemployment rate is projected, with an average of around 13.3 per cent. It is important to note that the projected falloff in the unemployment rate during 2011 is expected to solely arise from a further decline in the labour force.

Table 6: Annual Average Employment and Unemployment 2009, 2010[f] and 2011[f]

(annual average '000)	2009	2010[f]	2011[f]
Agriculture	96	84	85
Industry (including construction)	411	366	365
Services	1,422	1,403	1,396
Total employment	1,929	1,853	1,846
Unemployment	259	289	284
Labour force	2,187	2,142	2,130
Unemployment rate (%)	11.8	13.5	13.3

Note: Figures may not sum due to rounding.

Pay

The downward adjustment in wages accelerated in the first quarter of 2010. According to the CSO's quarterly earnings release, whole-economy average weekly earnings declined by 3.8 per cent, year-on-year, in the first quarter of 2010. A substantial decoupling of hourly earnings and hours worked had been observed prior to the first quarter of 2010, with the downward adjustment in wages largely taking place via reductions in weekly hours worked. A change in the composition of the decline in average weekly earnings was, however, evident during the first quarter of 2010 as both average hourly earnings and weekly hours worked declined — whole economy average hourly earnings fell by 1.5 per cent annually in the first quarter of 2010 while average weekly hours worked decreased by 2.2 per cent over the same period.

The decline in whole economy average weekly earnings during the first quarter of 2010 conceals contrasting developments in the scale of adjustment across the public and private sectors. The year-on-year decline in public sector average weekly earnings of 5.5 per cent in the first quarter of 2010 considerably outpaced the 2.8 per cent private sector fall over the same period. The difference between public sector and private sector wage developments in the first quarter of 2010 relates to the imposition of the public sector pay cut announced in Budget 2010. As regards developments at a sectoral level, eleven of the thirteen economic sectors recorded a year-on-year decline in average weekly earnings during the year to the first quarter of 2010, thereby, illustrating the broad-based nature of the downward adjustment in wages. Amongst the private sector, the transportation and storage sector together with the accommodation and food storage sector experienced the most pronounced falls in average weekly earnings during the year to the first quarter, with declines of 7.3 per cent and 4.8 per cent, respectively. Despite the dramatic fall in construction sector employment, a comparatively modest fall-off in average weekly earnings of 3.5 per cent was recorded. This may reflect strong compositional effects that are masking the underlying fall in wages in the sector.

Amid weak domestic economic activity and, in particular, the considerable spare capacity in the labour market, some further downward adjustment in private sector wages is expected during the remainder of 2010. In line with the reduction in public sector pay rates, a considerable downward adjustment is also expected in public sector wages during 2010. Reflecting such a combination of developments, it is estimated that compensation per employee will fall by around 3 per cent in 2010. Looking ahead to 2011, wages seem set to improve somewhat in line with strengthening economic activity; compensation per non-agricultural employee is expected to grow by 0.8 per cent in 2011. It is, however, important to note that particular uncertainty surrounds wage developments in 2011. When combined with the outlook for non-agricultural employees, it suggests that the non-agricultural pay bill will decline by 6.8 per cent in 2010 followed by a modest rise of 0.4 per cent in 2011.

Inflation

Consumer Prices

The annual CPI inflation rate at 0.2 per cent in August was positive for the first time since

Table 7: Inflation Measures — Annual Averages, Per Cent

Measure	HICP	HICP excluding Energy	Services[a]	Goods[a]	CPI
2007	2.8	2.7	4.4	1.5	4.9
2008	3.1	2.6	3.4	2.9	4.1
2009	–1.7	–1.0	1.2	–4.1	–4.5
2010[f]	–1.4	–2.5	–0.3	–2.4	–0.9
2011[f]	1.1	0.7	1.6	0.5	1.4

[a]Goods and services inflation refer to the HICP goods and services components.

December 2008. The rise in the annual CPI inflation rate can be largely explained by positive base effects related to mortgage interest rate decreases (up to mid-2009) and also by recent mortgage rate increases. In contrast, the annual HICP inflation rate, which does not allow for the costs of owner-occupied housing, remained negative at -1.2 per cent in August. However, inflationary pressures appear to have stabilised more recently, with the HICP price level recording a fall of just 0.1 per cent since the beginning of this year. While some international commodity prices have shifted upwards lately, a pick-up in domestic inflationary pressures is unlikely as persistent weakness in the labour market and heightened uncertainty will continue to weigh on consumer demand. Relative price trends are boosting competitiveness, with the Irish annual HICP inflation rate averaging about 3 percentage points lower than the euro area annual HICP inflation rate in the three months to August.

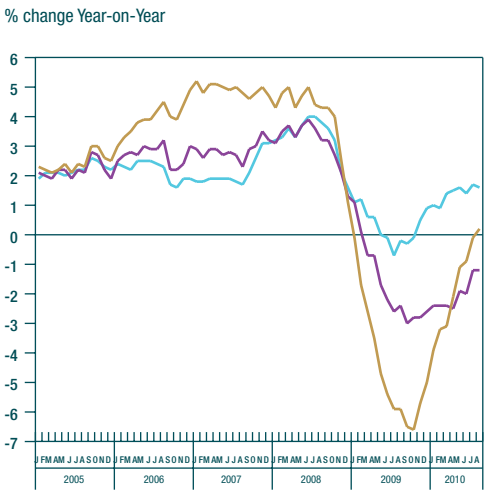
Goods prices have fallen by only 0.1 per cent since the beginning of the year reflecting some stabilisation in price pressures. However, there were significant divergences in price trends across the components of goods. The strong discounting behaviour evident in the food retail sector last year continued into the first quarter of this year but, subsequently, prices recovered to their end-2009 levels. The residual effects of the appreciation of sterling against the euro may have provided some support to food retail prices in recent months via higher UK import prices. Also, international food commodity prices began rising during the latter half of last year and may also explain the recovery in retail prices.

Recent stronger shocks to food commodities, particularly for grains, will likely add further upward momentum to food retail prices later this year and into next year. Meanwhile, energy prices increased by 7.9 per cent between the end of last year and August of this year as higher international oil price filtered through. The latter effect has waned in recent months and, barring the 5 per cent hike in electricity prices due in October, energy prices are assumed to rise only modestly in the coming quarters. Continued falls in prices for non-energy industrial goods, particularly for clothing and footwear, offset the rise in energy prices, so that goods prices overall have remained broadly flat during the year to August.

HICP services prices rose a cumulative 1 per cent in the four months to August this year and are now at levels comparable to the end of last year. Core services inflation remains quite subdued overall, with prices rising by just 0.2 per cent this year, but this masks divergent item-level price trends. Prices for discretionary items continue to fall but there have been price increases for a range of insurance services, which can be partly explained by market specific developments, and other items also of a less discretionary nature. As a result, core services prices have been more resilient in recent months than may have been anticipated in view of the domestic economic climate.

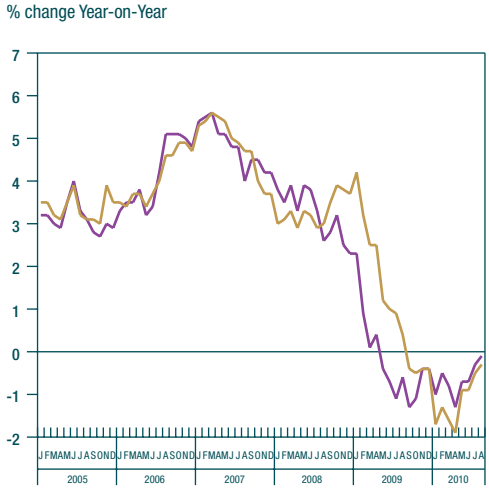
Meanwhile, alcohol-related services prices have fallen significantly this year, due partly to the carryover of excise duty decreases announced in Budget 2010. However, services prices overall have been stable as falls in the prices of alcohol-related services and other discretionary purchases have been largely offset by increases in administered services and telecommunication services prices of 2.2 per cent and 3.1 per cent, respectively.

Chart 4: Consumer Prices



Source: CSO

Chart 5: Services Sector Inflation



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

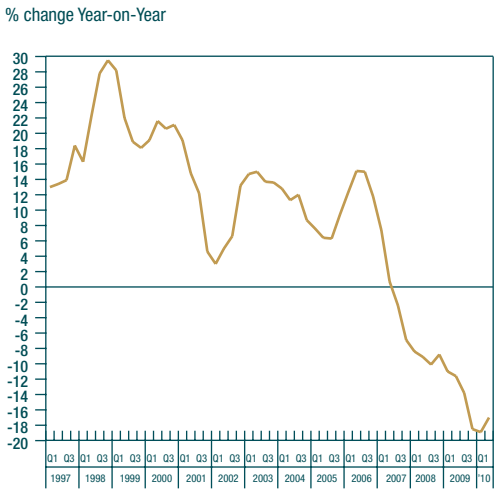
Source: CSO

The sharp pick-up in international food commodity prices is expected to exert some upward pressure on food retail prices later this year and into next year. Also, the euro depreciation against sterling may not be fully passed through just yet. However, these international factors are likely to be mitigated by weak domestic demand and by persistent spare capacity across many sectors of the economy. On balance, inflationary pressures are likely to remain muted during the remainder of 2010. Accordingly, the annual HICP inflation rate is projected to record inflation of about –1.4 per cent this year, mainly reflecting a negative carryover from last year, and the annual CPI inflation rate is projected to be about –0.9 per cent. The upward revision in the annual CPI inflation projection since the last Bulletin reflects the impact of recent increases in retail banks' mortgage rates. The annual HICP inflation rate is likely to turn positive in the final quarter of this year, before averaging about 1.1 per cent in 2011. Challenging labour market conditions will persist and declines in disposable incomes will continue to constrain demand. The annual CPI inflation rate is projected to average 1.4 per cent next year, with market expectations of an ECB base rate increase pushed back to the final quarter of 2011. The risks for the inflation outlook this year and next appear to be broadly balanced.

Property Prices

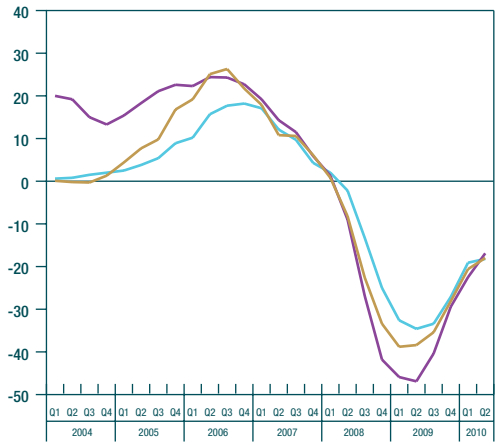
The ESRI/permanent TSB house price index indicates a cumulative nominal fall in house prices of 35.2 per cent between the peak of early 2007 and the second quarter of this year. The decline in house prices has moderated somewhat in recent quarters, as a quarterly fall in the first quarter of this year of 4.8 per cent was followed by a fall of 1.7 per cent in the second quarter. As indicated in previous Bulletins, the index may understate to a significant extent the actual fall in house prices. Indeed, the ESRI/permanent TSB index indicates that house prices in Dublin have fallen by 43.3 per cent from peak and alternative private sector indices such as the Sherry Fitzgerald house price index, suggest that the cumulative fall in prices from peak may be over 40 per cent at present. Despite continued house price falls, affordability has only improved marginally due to the offsetting impact of both higher average mortgage rates and lower disposable incomes. Meanwhile, private sector rents fell by 0.5 per cent in the three months to August, which compares to a quarterly rise of about 1 per cent in May and a quarterly fall of 0.7 per cent in February. Rents have likely stabilised as a range of factors hold back rent increases, including the challenging

Chart 6: Permanent tsb / ESRI House Price Index



Source: Permanent tsb/ESRI

Chart 7: SCS / IPD Irish Commercial Property Index



Source: SCS/IPD

labour market for younger cohorts, further declines in disposable incomes and net outward migration.

Commercial property values continued to decline in the second quarter of this year. According to data from the Society of Chartered Surveyors/ Investment Property Databank, capital values in the retail, office and industrial sectors recorded quarterly falls of between 3 and 4 per cent during the second quarter of this year. With transaction activity remaining quite subdued, tracking price trends accurately in the commercial sectors can be challenging. By the second quarter of this year, capital values recorded a cumulative nominal fall of almost 57 per cent since their peak of late 2007, which is largely corroborated by the corresponding Jones Lang LaSalle index. The decline in rents picked up sharply recently; according to Jones Lang LaSalle, rents in retail and industrial sectors recorded quarter-on-quarter falls of 11.3 per cent and 21.5 per cent, respectively, in the second quarter of this year. Meanwhile, rents in the office sector continued to fall sharply with rents recording a quarterly fall of 9.8 per cent during the same period. It is worth keeping in mind that the indices are based on portfolios containing relatively small numbers of properties and that the rental indices can be substantially impacted by new lettings.

Competitiveness

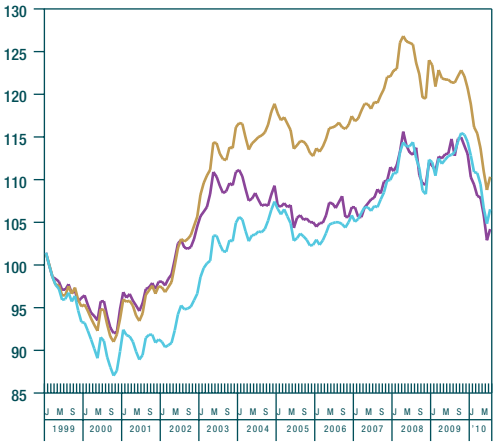
The latest indicators on costs, prices and productivity point to a fairly sustained improvement in Irish price and cost competitiveness in 2010. In particular, the fall in the euro exchange rate against both the dollar and sterling, coupled with lower inflation in Ireland will facilitate stronger export growth. Similarly, the rebalancing in the economy away from low to high productivity sectors is helping to foster a robust recovery in productivity growth.

Exchange Rate Developments

In the first eight months of the year, the euro exchange rate depreciated by approximately 12 per cent against the dollar and by 8½ per cent against sterling. In the three-month period to end-August, the euro declined in value by just over 4 per cent quarter-on-quarter against the dollar and by 5½ per cent against sterling. These developments are providing a price competitiveness boost for Irish exporters, as 22 per cent of Irish merchandise exports go to the US, with 16 per cent sent to the UK. A more comprehensive measure of exchange rate movements is provided by the nominal Harmonised Competitiveness Indicator (HCI), which can be interpreted as a trade weighted

Chart 8: Harmonised Competitiveness Indicators

Base: Quarter 1, 1999 = 100



Consumer Price Deflated HCI
Producer Price Deflated HCI
Nominal HCI

Sources: Central Bank of Ireland and ECB

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

% change Year-on-Year

Ireland
Major Trading Partners
Relative Hourly Earnings

Source: Central Bank of Ireland calculations

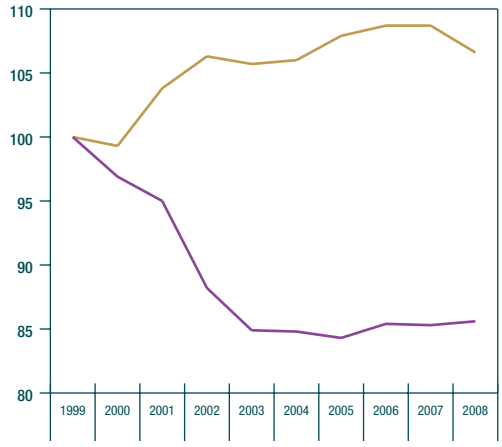
or an effective exchange rate index. The nominal HCI for Ireland depreciated by 4 per cent quarter-on-quarter in the three month period to end-July, with a larger decline of 4½ per cent in the consumer price deflated (or real) HCI, indicative of lower inflation in Ireland relative to our main trading partners. The real HCI has been on a fairly sustained downward trajectory since peaking in April 2008, falling by a cumulative 13 per cent with exchange rate movements accounting for approximately half of the decline, thus providing a timely boost to competitiveness.

Productivity and Cost Competitiveness

Quarterly National Accounts data for the first half of 2010 show that the recovery in productivity, which began in mid-2009 has become more firmly embedded. Data for the first half of 2010, shows annual productivity growth of 5 per cent on a GDP basis. In light of this and given the overall economic outlook discussed above, overall productivity growth of 4.3 per cent is projected for 2010. This would be the fastest rate of increase recorded since 2002 and reflects the changing composition of growth away from lower productivity sectors such as building and construction, to sectors where productivity is typically higher, such as the modern manufacturing sector and internationally traded services. For 2011, these developments are expected to continue, with productivity growth of 2.7 per cent expected. This productivity outlook, when combined with the projections for wage growth, as discussed above, should result in a further improvement in Irish unit labour costs. For 2010 and 2011, unit labour costs are expected to decline by 7 and 1.9 per cent respectively (Table 8). This outlook compares favourably

Chart 10: Unit Wage Costs in Manufacturing

Base: 1999 =100



Wage share weighted
Output share weighted

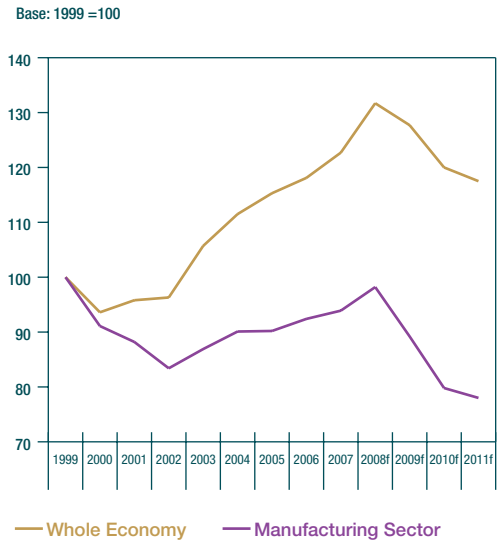
Source: Central Bank of Ireland calculations

Table 8: Selected Competitiveness Indicators for Ireland, % annual change

	2008	2009	2010[f]	2011[f]
Effective Exchange Rates				
Nominal HCI	4.5	1.0	–2.9	n.a.
Real HCI (consumer prices)	3.8	–1.5	–7.0	n.a.
Productivity				
GDP per person employed	–2.5	0.6	4.3	2.7
GDP per hour worked	–1.5	2.9	4.4	1.9
Labour Costs				
Compensation per non-ag employee	4.0	–0.2	–3.0	0.8
Unit Labour Costs	6.0	–0.9	–7.0	–1.9

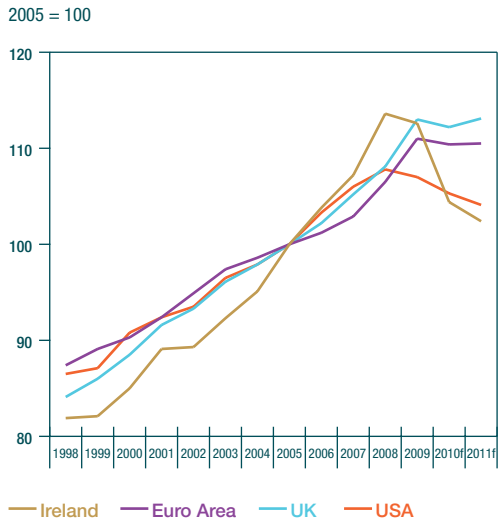
Source: Central Bank calculations, HCI data in 2010 are year-to-date (Jan-July).

Chart 11: Irish Unit Wage Costs Relative to Main Trading Partners (in Common Currency)



Source: Central Bank of Ireland, ECB and AMECO

Chart 12: Unit Labour Cost Indices



Source: Central Bank of Ireland calculations

with projected trends in Ireland's main trading partners with unit labour costs in the euro area projected to decline by 0.2 per cent on average over the same period given latest European Commission estimates.

While there have been wide ranging improvements in Irish cost competitiveness over the past year or so, a number of areas have shown little to no improvement, typically in the non-traded sectors of the economy. In particular, and as outlined in a recent National Competitiveness Council Report[1], legal fees in Ireland have remained stubbornly high, with only marginal declines in prices recorded since the onset of the recession. Similarly, transport costs in Ireland remain high, with taxi fees in Dublin, for example, the 6th most expensive in a survey of 16 major cities, according to the NCC. Similarly, for urban public transport journeys, Dublin ranked as the 5th most expensive city from 16 benchmarked locations. Public and administered services were also highlighted in the report for continuing to negatively impact on overall cost competitiveness, with health and neducation fees, continuing to increase rapidly despite large scale price and wage declines in the overall economy.

[1] 'Costs of Doing Business in Ireland 2010, Volume 1', National Competitiveness Council, July 2010.

The Public Finances

Exchequer Returns to end-August

The latest Exchequer returns numbers for the first eight months of the year were broadly in line with expectations, with an overall Exchequer deficit of €12.1 billion (Table 9). This figure was down significantly from the deficit of €18.7 billion encountered over the same period in 2009 but this largely reflects payments of €3 billion each made to both the National Pension Reserve Fund and Anglo Irish Bank in 2009, which have dropped out of the accounts in 2010.

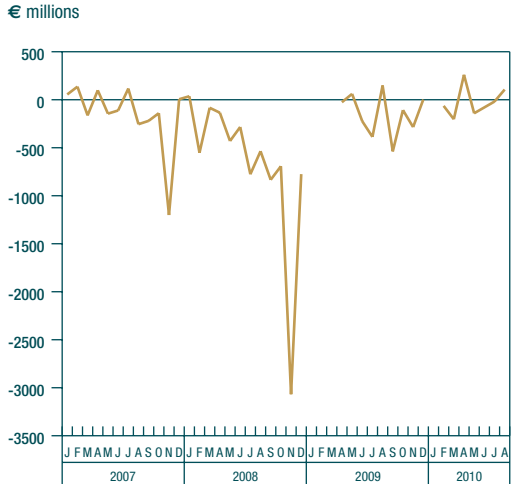
Revenue

In terms of revenues, tax receipts amounted to €18.9 billion in the year to end-August, down 9 per cent in annual terms. This outturn however, was only 0.7 per cent behind target. The two largest tax heads, income tax and VAT, were down annually by 8.2 and 6.4 per cent respectively. Furthermore, income taxes were 3.9 per cent behind their expected profile, a shortfall of €270 million in the first eight months of 2010 (Chart 13). Roughly half of this shortfall however, was offset by better than expected VAT, corporation tax and indirect taxation receipts. The annualised taxation receipts, as depicted in Chart 14 shows that taxes are now stabilising following precipitous declines over the past year.

Expenditure

Total voted current spending in the first eight months of 2010 amounted to €26.4 billion, a decline of 1.6 per cent in annual terms. This decline was achieved in spite of a sharp increase in welfare related spending this year and reflects the series of consolidation measures announced since mid-2008. On the capital side, in the year to end-August, voted expenditure was down by €1.3 billion in year-on-year terms, a fall of a third compared to 2009, although these figures may partly reflect timing factors and could well recover somewhat in the final months of the year. As regards non-voted spending, national debt interest and related charges increased to €2.9 billion in the first eight months of the year, an increase of 11.6 per cent over the same period in 2009, as a result of escalating borrowing costs.

Chart 13: Monthly Tax Shortfalls

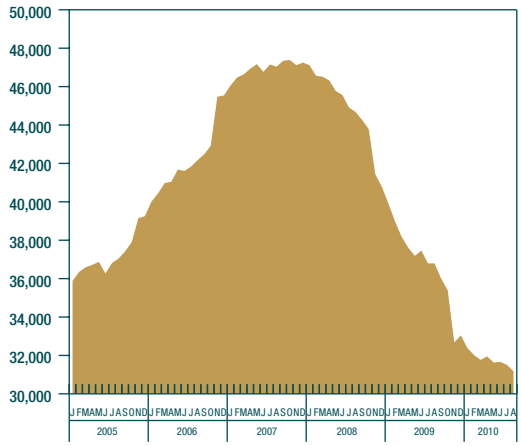


Note: Discontinuity in series due to a lack of data
Source: Central Bank of Ireland calculations

Exchequer Financing

The Exchequer Returns show borrowing of €14.2 billion in the year to end-August, down significantly from the €28.3 billion borrowed over the same period in 2009 (Table 9). The exceptionally large borrowing in 2009 reflected in part the aforementioned payments to Anglo Irish Bank and the frontloading of the National Pension Reserve Fund.

Chart 14: Annualised Tax Receipts



Source: Central Bank of Ireland calculations

Table 9: Exchequer Returns to end-August

	2009 Outturn €m	2009 End-August €m	2010 End-August €m	2010 % Annual Change
Current Expenditure				
— Voted[a]	40,256	26,852	36,411	–1.6
— Non Voted[b]	4,992	3,870	3,990	3.1
Total	**45,248**	**30,722**	**30,401**	**–1.0**
Current Revenue				
— Tax revenue	33,043	20,792	18,926	–9.0
— Non-tax revenue[c]	836	574	977	70.2
Total	**33,879**	**21,366**	**19,903**	**–6.9**
Current Budget Balance	**–11,369**	**–9,356**	**–10,498**	
Capital Budget Balance	**–13,272**	**–9,377**	**–1,587**	
Exchequer Balance	**–24,641**	**–18,733**	**–12,085**	
General Government Balance (% of GDP)[d]	**–14.6**			
Source and Application of Funds				
Total Borrowing/Repayments	–24,397	–28,325	–14,195	
Total Increase in Exchequer Deposits	–244	9,592	2,110	
Exchequer Balance	**–24,641**	**–18,733**	**–12,085**	

[a]Government current expenditure voted on by the Dáil in the areas of Social Welfare, Health, etc.
[b]Debt servicing, judicial salaries and pensions and EU Budget contribution.
[c]Central Bank surplus income, National Lottery surplus, interest and dividends.
[d]Estimate from the March 2010 Maastricht Returns, adjusted for the latest NIE figures for GDP.

Outlook for 2010

In terms of the fiscal outlook for 2010, while the underlying General Government Deficit is likely to be similar to the targeted deficit of 11.6 per cent of GDP set out in Budget 2010, the headline deficit is being raised significantly with the promissory notes issued to various banks, now being included or likely to be included, in the headline General Government Balance (GGB) measure. In particular, the €8.3 billion payment to Anglo Irish Bank in March and the further €2 billion payment in May, have been reclassified as capital transfers and will add to the General Government Deficit in 2010. In a similar manner, subsequent payments to financial institutions could also be added to the General Government Balance. Depending on the precise statistical treatment of each of these payments, capital transfers to banks in total could add about 20 percentage points to the deficit ratio this year. Reflecting General Government accounting rules, while the bulk of these payments, principally in the form of promissory note issues, may be recorded in full in the current year's deficit, the gradual nature of their planned drawdown means that the actual financing cost will be spread out over time.

An Timpeallacht Gheilleagrach

Agus brúnna móra airgeadais sna margaí faoi láthair, tá cinntí dúshlánacha le glacadh ag an tír maidir le saincheisteanna éagsúla. Is iad na cinn is tábhachtaí na cinn sin a bhaineann le dul i ngleic leis an staid fhioscach bhunúsach, leis an earnáil baincéireachta a normalú agus leis an iomaíochas maolaithe a athspreagadh. Tá dul chun cinn breise i dtaca leis na saincheisteanna seo go léir ríthabhachtach chun a áirithiú go bhfillfidh an geilleagar ar chonair fhónta fáis maidir le haschuir agus le fostaíocht i ndiaidh lagtrá eacnamaíochta a bhí gan fasach nach mór ó thaobh doimhneachta agus faid.

Tá moilliú tagtha ar an bhfás geilleagrach sa dara leath den bhliain cé gur chuir go leor mórgheilleagar tús measartha láidir leis an mbliain. Ar ndóigh, is údar imní é an méid seo ó thaobh an ionchais. Ar a shon sin, de réir chreatlach lárnach na mórghnólachtaí idirnáisiúnta, ní léiríonn sé, ag an bpointe seo, ach go bhfuil laghdú tagtha ar fhuinneamh an téarnaimh. Léiríonn sé gurb é is dóichí gur téarnamh céimseach míchothrom agus nach téarnamh láidir leanúnach a bheidh ann, rud a bhíonn i gceist go minic i ndiaidh géarchéimeanna tromchúiseacha airgeadais. Is dealraitheach uaidh seo go mbeidh an timpeallacht eachtrach dearfach ach nach mbeidh sí fuinniúil.

Agus na sonraí is deireanaí á gcur san áireamh, meastar de réir an mheastacháin is deireanaí gurb é 0.2 faoin gcéad an meánmhéadú bliantúil a bheidh ar an OTI i mbliana, fad a mheastar go dtitfidh an OTN faoi réir 1.7 faoin gcéad. Leis an difríocht idir an dá thomhas seo léirítear neart coibhneasta onnmhairí. Leis na sonraí trádála is déanaí, léirítear go bhfuil bonn níos leithne anois leis an téarnamh ar onnmhairí agus go gcuimsíonn sé gnéithe 'traidisiúnta' den earnáil déantúsaíochta. Cé go bhfuil an t-éileamh intíre fós lag, tá fianaise ann go bhfuil cobhsú ag teacht ar chaiteachas tomhaltóirí, d'ainneoin na luaineachta a bhaineann leis fós. Ar a shon sin, tá an laigeacht leanúnach ar infheistíocht ina sracadh suntasach maidir le forás. Lean an fhostaíocht de bheith ag titim, cé go bhfuil ráta na titime sin moillithe, rud a léiríonn go bhfuil an t-éileamh intíre cuíosach lag agus go bhfuil an fhostaíocht chun deiridh le forbairtí san aschur.

Maidir leis an mbliain 2011, beidh an t-ionchas faoi thionchar ag a mhéid a bhraitear an spreagadh dearfach ón taobh eachtrach den gheilleagar. Mar a luadh cheana, tá an fás eacnamaíoch ar na geilleagair shárfhorbartha maolaithe agus rinneadh athbhreithniú anuas ar na réamhaisnéisí don gheilleagar idirnáisiúnta don bhliain 2011 le míonna beaga anuas. Léirítear é seo leis an ionchas do gheilleagar na hÉireann, atá bunaithe ar réamh-mheastacháin bhúiséacha reatha sa mhéid go bhfuil fás 2.4 faoin gcéad tuartha i dtéarmaí OTI do 2011 agus fás 1.7 faoin gcéad i dtéarmaí OTN; fás beagáinín níos ísle ná mar a tuaradh tráth an Fheasacháin Ráithiúil deiridh.

Maidir leis na príomh-shaincheisteanna beartais, rinneadh tuilleadh dul chun cinn maidir leis an earnáil baincéireachta sa mhéid gur fhógair an Rialtas plean chun Anglo Irish Bank a athstruchtúrú. Fógraíodh na ceanglais ghaolmhara chaipitil lena soláthraítear tuilleadh soiléireachta, laistigh de theorainneacha aon bhirt den sórt seo, maidir le costais fhioscacha idirghabháil an rialtais san earnáil. D'ainneoin na bhforbairtí seo, tá na himthosca trádála atá ann do na bainc Éireannacha fós ag cruthú deacrachtaí. Léiríonn sé seo an imní atá ann maidir leis an earnáil baincéireachta féin agus maidir leis an staid fhioscach in Éirinn. Tá na costais iasachta don stát agus don earnáil baincéireachta ailínithe go dlúth anois, rud a léiríonn na naisc mhéadaithe idir an dá hearnáil, mar aon leis na brúnna bunúsacha sna margaí. Le leibhéal ardaithe na gcostas sin, léirítear go ngabhann biseach riosca le hiasachtú d'Éirinn ar cheachtar bealach, riosca nach raibh i gceist sna blianta roimhe seo. Ní foláir dul chun cinn breise a dhéanamh, mar sin, d'fhonn an córas baincéireachta a chur ar

bhonn cobhsaí chun go mbeidh sé in ann cuidiú leis an téarnamh geilleagrach. Leis seo, ní foláir staid chaipitil na mbanc a neartú go dtí na leibhéil a fhorordaíonn an Rialtóir Airgeadais, cibé acu ó acmhainní príobháideacha, a mhéid is féidir, agus ón stát i gcás inar gá sin.

Saincheist bheartais atá níos práinní faoi láthair is ea an staid fhioscach bhunúsach. Fiú mura gcuirtear san áireamh na costais a bhaineann le tacaíocht a thabhairt don earnáil baincéireachta, is mó go mór caiteachais an Stáit ná ioncam an Stáit. B'ionann an t-easnamh seo agus 14.6 faoin gcéad den OTI in 2009, meastar gurb ionann é agus 11.6 faoin gcéad den OTI in 2010 agus meastar gurb ionann é agus 10 faoin gcéad den OTI in 2011. Chun dul i ngleic leis an staid neamh-inmharthana seo, tá an Rialtas tar éis conair choigeartaithe maidir leis an easnamh a chomhaontú leis an gCoimisiún Eorpach, ar conair í atá ceaptha an t-easnamh a laghdú go dtí figiúr is lú ná 3 faoin gcéad faoi 2014. Leis an gconair seo, féachtar le cothromaíocht a bhaint amach idir an gá atá leis an airgeadas poiblí a chur ar bhonn fónta agus an riosca go ndéanfadh coigeartú gasta difear d'ionchais téarnaimh an gheilleagair.

I bhfianaise na himní atá méadaithe go mór maidir le hinmharthanacht fhioscach, is í an phríomhthosaíocht sa ghearrthéarma a áirithiú go léireofar go hinchreidte le buiséad 2011, an chéad chéim de phlean fioscach, athcháraithe, docht, a dhíreoidh ar chonair chóineasaithe a thabhairt i réim arís. Ciallóidh sé seo, de riachtanas, go mbeidh coigeartú níos mó i gceist ná an coigeartú €3 billiún a rabhthas ag súil leis go dtí seo. Go deimhin, ba cheart go ndéanfar athbhreithniú go práinneach ar an gconair choigeartaithe, chun a áirithiú go gcuirfear san áireamh forbairtí éagsúla atá tar éis titim amach ó comhaontaíodh í. Ar na forbairtí seo, áirítear leibhéal níos ísle praghsanna sa gheilleagar, costais níos airde a bhaineann le fiachas a sheirbhísiú lena n-áirítear na costais sin a bhaineann le hidirghabháil san earnáil baincéireachta agus an t-ionchas go mbeidh an fíorfhás réamh-mheasta níos lú don bhliain seo chugainn. Tá soláthar sonraí maidir leis an gcaoi ina mbainfear an coigeartú amach chomh tábhachtach céanna, mar cuirfidh sé seo le hinchreidteacht an athchóirithe fhioscaigh sna himthosca reatha ina bhfuil imní faoi iasacht cheannasach agus i gcomhthéacs athchóirithe fioscacha i dtíortha eile, is gá clár mionsonraithe a chur le chéile de na hathruithe is gá chun staid inmharthana a bhaint amach. Leis na gníomhaíochtaí seo, thacófaí leis an dearcadh go gcobhsóidh ualach fiachais na hÉireann, cé gur ar leibhéal ard a bheidh sé i gcomparáid lena hioncam, agus go laghdóidh sé le himeacht aimsire. Ba cheart go gcuideodh sé seo ar deireadh le hualach iomlán an choigeartaithe ar cháiníocóirí agus ar iasachtaithe a ísliú trí laghdú ar chostais iasachta don stát a chur chun cinn agus tríd an mbrú aníos ar rátaí úis go ginearálta sa gheilleagar a theorannú. Bheadh sé seo i gceist, go háirithe, dá mbeadh comhaontú athnuaite ann maidir leis na sonraí d'athchlárú inchreidte ar an gcoigeartú, nó ar a laghad dá nglacfaí leis na sonraí sin.

Is í an phríomhghné deiridh d'ionchais fáis an gheilleagair an forás ar iomaíochas. Le linn am an bhorrtha, d'ardaigh praghsanna agus tuarastail go dtí leibhéil neamh-inmharthana i gcomparáid le comhpháirtithe trádála na tire. Tá feabhas suntasach tagtha le dhá bhliain anuas ar thomhais thraidisiúnta iomaíochais, amhail costais choibhneasta aonad saothair. Ar a shon sin, d'eascair cuid den fheabhas sin as athruithe earnálacha sa gheilleagar, amhail cúngú na hearnála tógála dlúthshaothair, dá bhrí sin, ní raibh an feabhas bunúsach chomh maith sin, rud a thugann le tuiscint go bhfuil gá i gcónaí le srian a choinneáil ar thuarastail i gcomhréir le príomh-chomhpháirtithe trádála na hÉireann. Tá na buanna bunúsacha ar tógadh orthu sna blianta tosaigh fáis sna 1990idí fós ann agus féadfaidh siad seo rannchuidiú go deimhneach le fás a luaithe a athbhunófar iomaíochas tuarastail agus praghsanna. Tá réimsí eile ann ina bhfuil gá le hathchóirithe breise chun iomaíochas a mhéadú amhail na cinn sin a aithníodh i dtuarascálacha an

Údaráis Iomaíochta, amhail seirbhísí proifisiúnta, soláthar seirbhísí sláinte agus réimsí eile. Is gá leanúint le hathchóirithe breise i réimsí ábhartha d'fhonn tacú le hionchais fáis sa mheántéarma. Leis na hathchóirithe seo, le feabhsuithe breise ar staid iomaíochais na tíre, mar aon le neartú caipitil san earnáil baincéireachta agus le bearta cuimsitheacha lena dtabharfar aghaidh ar an staid fhioscach bhunúsach, cuirfear go mór le cumas na tíre chun déileáil leis an staid reatha.

Monetary and Financial Market Developments

Overview

In recent months financial markets generally have remained volatile. Tensions in the euro area sovereign debt markets eased somewhat in mid-summer 2010 following a number of policy interventions. These included the establishment of the European Financial Stability Facility (EFSF) and the publication of the EU-wide bank stress tests in late July. Market tensions increased again, however, in early August, as more general concerns over the robustness of the global recovery in the near-term re-emerged and influenced developments in the main debt, equity and money markets.

These events have been particularly acute for banks and sovereigns in the euro area. Market uncertainty has led to significant safe haven flows in sovereign debt markets, with yields on Bunds dipping to historic lows, and spreads for Irish and some other euro area Member States' debt over equivalent German debt rising. In the Irish case, uncertainty over the ultimate cost of the State's support to the domestic financial system has contributed to the most recent rise in yields. At the time of writing, the Government had announced plans for the restructuring of Anglo Irish Bank, the cost of which should be known in October 2010, following analysis of the capital requirements by the Central Bank. The Government has also announced an extension of the Eligible Liabilities Guarantee Scheme, subject to the agreement of the European Commission. The domestic banking system as a whole is continuing its phase of balance sheet adjustment, with planned asset disposals, continued transfers of land and development loans to the National Asset Management Agency (NAMA), and other measures to meet the capital requirements set by the Central Bank by end-2010. Irish resident credit institutions, particularly domestic market credit institutions[1], were able to issue a significant amount of debt securities in Q1 2010 both under and outside the Government guarantee schemes. However the pace of this activity has slowed in recent months due to the turbulence in markets generally.

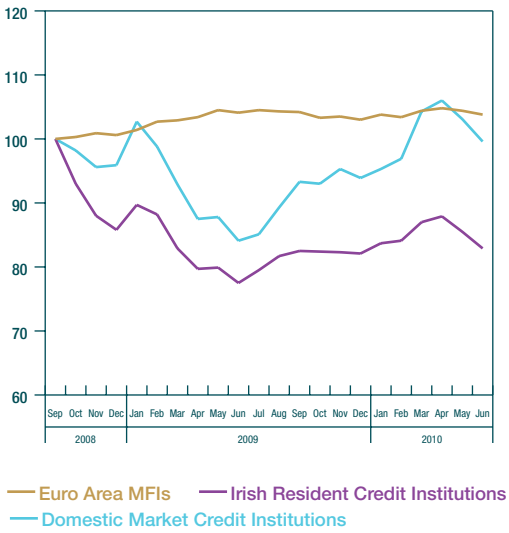
[1] Domestic market credit institutions are those who have a significant level of retail business with Irish households and NFCs, and would exclude the more internationally focussed banks in the IFSC. A full list of these institutions is available in the Credit, Money and Banking section of the Statistics portal of the Central Bank website.

Retail interest rates offered by Irish resident credit institutions for lending to households, and to a lesser extent to non-financial corporations, have risen marginally in recent months whereas deposit rates have declined. Margins over deposit rates have increased slightly as a result. Tensions in the inter-bank money market in recent months have, however, meant that the cost of borrowing in this market has also begun to rise, hence limiting the possibility for banks to increase their margins generally.

The contraction in the balance sheet of Irish resident credit institutions, including domestic market credit institutions, reflects a significant decline in the net foreign liability position of these institutions (see Box A below). This comes at a time when demand for new lending domestically has remained muted, while supply constraints have persisted, but to a lesser degree than before, according to the findings of the latest Irish results from the euro area Bank Lending Survey. These factors combined have led to a decline in the flow of credit to the domestic economy in 2010. Lending to domestic non-financial corporations (NFCs) by Irish resident credit institutions declined by 3 per cent in the year ending July 2010, whereas lending to households was 4.7 per cent lower over the same period. Equivalent data for the euro area show NFC lending down 1 per cent and household lending 2.6 per cent higher over the same period, suggesting that the Irish credit cycle is still on a downward trajectory, while that of the euro area has passed its trough.

Chart 1: Notional Index of Outstanding Amounts of Debt Securities Issued

(Sep 2008 = 100)



Source: ECB and Central Bank of Ireland.

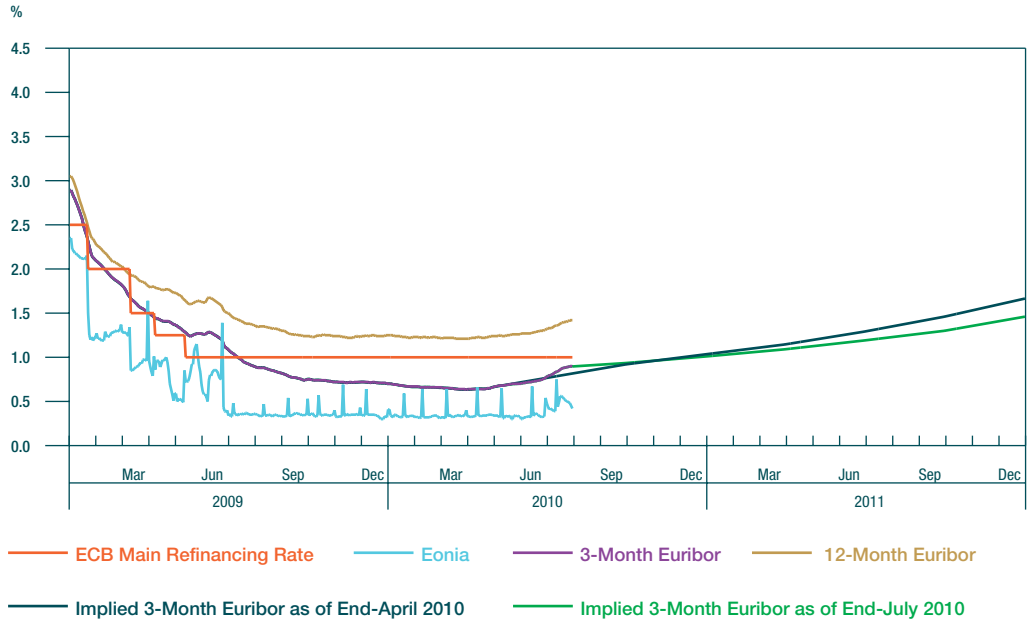
A: Financial Markets

Bank Funding and Money Market Developments

Banks' financing conditions in the euro area were significantly impacted by the tensions in euro area sovereign debt markets during Q2 2010. Higher yields on sovereign debt passed through to bank bond yields and counterparty risk was heightened due to uncertainty surrounding banks' sovereign debt exposure. Tensions eased somewhat through July following the publication of the EU bank stress tests and this was reflected in, among other things, a fall in the CDS spreads on euro area banks' five-year senior debt. The turbulence in debt markets during Q2 2010 restricted banks' recourse to debt issuance, with the net issuance of debt securities by euro area monetary financial institutions (MFIs) being negative over the quarter following positive flows in Q1 2010. There was a similar profile for net issuance of debt securities for Irish resident credit institutions, including domestic market credit institutions, some of whom had taken advantage of the more positive market conditions during Q1 2010 to raise funding (Chart 1). Another factor in the more muted activity in securities issuance is the general balance sheet restructuring Irish and other euro area banks are undergoing, as well as the reduced need for funding new lending due to low demand relative to that evident during the pre-crisis period. The domestic market credit institutions' balance sheet has, for example, contracted by approximately 7.5 per cent in the year ending July 2010, largely due to a reduction in the foreign liabilities of these institutions. The net foreign liabilities of the domestic market credit institutions have fallen by approximately 14.5 per cent over the same period. The gross external assets and liabilities of domestic market credit institutions continued to decline on a quarterly basis in early 2010. In contrast, the gross external assets and liabilities of IFSC credit institutions and money market funds, which constitute the remainder of the Irish resident MFI sector, rose in early 2010. This issue is explored further in Box A.

Money market interest rates have generally increased and become more volatile in recent months across all maturities, as have the spreads between secured and unsecured rates. This is mostly due to uncertainty regarding developments in the euro area sovereign debt market. The volatility in the shorter-term unsecured rates became evident after the maturity of the 12-month ECB longer-term refinancing operation in early July. Alongside this there was a decline in the excess liquidity in the euro area, although there was still significant recourse to the Eurosystem deposit facility. The Governing Council has announced that for the remainder of 2010 the Eurosystem will continue to offer refinancing operations at a fixed rate tender with full allotment. Given the continuing tensions in unsecured money markets, the money market yield curve, as represented by the spread between the 12-month and 1-month Euribor, has become steeper in recent months. Despite this, however, market participant expectations for the future path of unsecured rates as derived from 3-month Euribor futures show that at end-July 2010 they did not expect rates to rise to the same extent over the coming year as they had done at end-April 2010.

Chart 2: Main ECB and Money Market Interest Rates



Source: Central Bank of Ireland and Thomson Reuters Datastream.

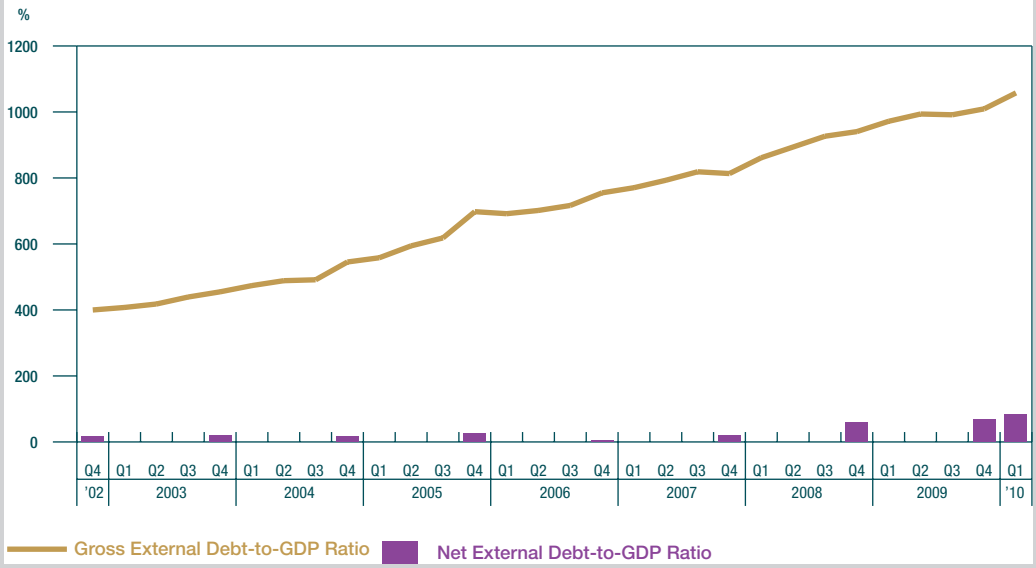
Box A: The External Position of the Irish Economy

*by Mary Everett**

Gross external debt statistics outline the size and composition of a country's non-resident liabilities, which in Ireland's case are significant due to the presence of a large international financial services industry. They do not, however, show offsetting external assets. The most recent statistics show Ireland's gross external debt-to-GDP ratio as 1,057 per cent at end-March 2010 (see Chart A). Most of this debt can, however, be attributed to non-bank financial companies (for example, companies involved in international financial service activities) and is, in fact, more than offset by external assets in the case of these entities. This box looks at developments in external debt, with particular focus on the monetary financial institution (MFI) and Government sectors. While the MFI and other non-government sectors have been decreasing their external positions, the opposite is true for the government sector. The box also shows that when external assets are taken into consideration, the net external debt of Ireland amounts to just over 80 per cent of GDP at end-March 2010, as shown in Chart A.

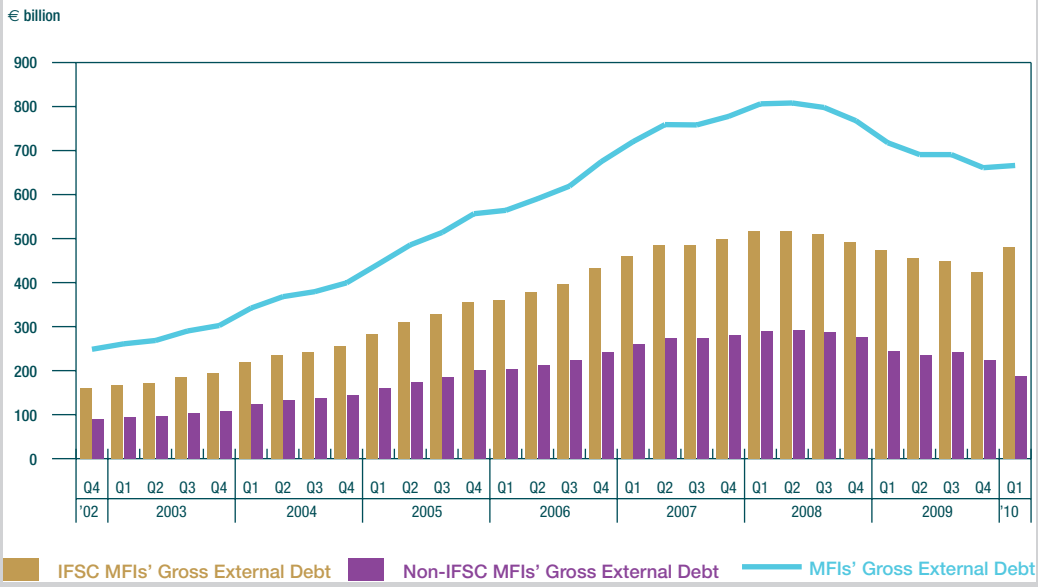
*The author is an Economist in the Bank's Statistics Department. The views expressed in the box are the personal responsibility of the author.

Chart A: External Net and Gross Debt-to-GDP Ratios



Source: Data are sourced from the CSO and are based on author's own calculations.

Chart B: Gross External Debt of MFIs



Source: Data are sourced from the CSO and are based on author's own calculations.

MFI Sector

MFIs, which include both IFSC and non-IFSC (mainly domestic retail MFIs) credit institutions and money market funds, accounted for 40 per cent, or €666 billion, of total gross external debt at end-March 2010 (see Chart B). Gross liabilities grew marginally in Q1 2010, following six consecutive quarters of decline from a peak of €808 billion in Q2 2008. MFIs' external liabilities with an original short-term[2] maturity, specifically loans and deposits, comprise the majority of gross external debt for the credit institution and money market fund sector. Since end-September 2008, gross external long-term[3] liabilities of MFIs, which are predominantly bonds and notes, saw an overall decline of 29 per cent and stood at €173 billion at end-March 2010. The small increase in gross external liabilities of MFIs in Q1 2010, is due to increased liabilities of IFSC banks, which are largely offset by continuing declines for non-IFSC banks.

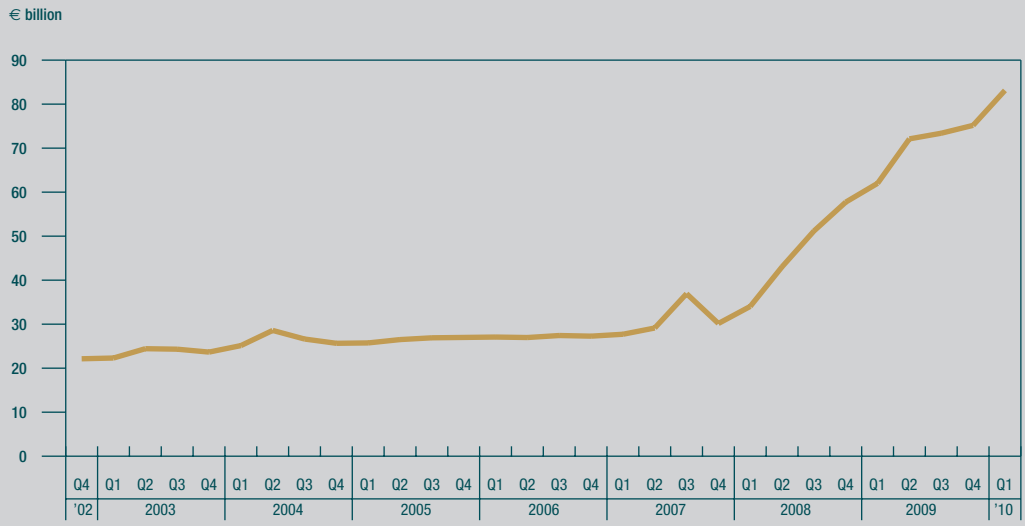
The gross external debt of the Central Bank of Ireland was €38.1 billion at end-March 2010, and relates to liabilities to the European System of Central Banks (ESCB), arising from monetary policy operations in addition to balances in the ESCB's settlement system, TARGET.

Government Sector

Foreign investors' holdings of Irish Government gross external liabilities, namely short- and long-term bonds and notes have increased significantly since end-2007 (see Chart C). While foreign holdings of short-term Government notes and treasury bills increased over the last two years owing to the introduction of a Treasury Bill Programme by the National Treasury Management Agency, foreign investment in long-term Government bonds has also grown from €29.3 billion at end-2007 to €69.5 billion at end-March 2010.

[2] Maturity of less than one year.
[3] Maturity of more than one year.

Chart C: Gross External Government Debt



Source: CSO.

Table A: Net External Position of the Irish Economy at end-March 2010

€ million	IFSC	Non-IFSC	Total
General Government	0	–71,943	–71,943
Monetary Authority	0	–21,738	–21,738
Monetary Financial Institutions	5,508	–57,076	–51,568
Remaining Sectors	15,320	166	15,486
Of which: Other Financial Intermediaries	*15,320*	*46,997*	*62,317*
Non-Financial Companies	*0*	*–46,831*	*–46,831*
Total Economy	20,828	–150,591	–129,763

Notes: (i) Data are sourced from the CSO. (ii) A positive (negative) position denotes a net asset (liability).

Other Sectors[4] *and Direct Investment*

The remaining sectors of the Irish economy had a gross external liability to foreign investors of €882.6 billion — a gross external debt-to-GDP ratio of 559 per cent — at end-March 2010. The activities of these non-bank financial companies are primarily international and significant, consequently contributing to the majority of gross external debt in this category. A significant portion, €242.3 billion, of non-financial companies' gross external liabilities, however, relates to direct investment into foreign-owned multinational companies located in Ireland.

Net External Position

A more comprehensive measure of Irish external liabilities is the International Investment Position[5]. While this measure increases Irish external liabilities to €2.5 trillion, this external indebtedness is, however, largely offset by Irish holdings of foreign assets. At end-March 2010, Irish foreign assets were worth €2.4 trillion, indicating that the more accurate measure of the Irish external position was a **net** liability of €129.8 billion. Table A presents the sectoral detail of the Irish net external investment position, subcategorized into IFSC and non-IFSC entities at end-March 2010.

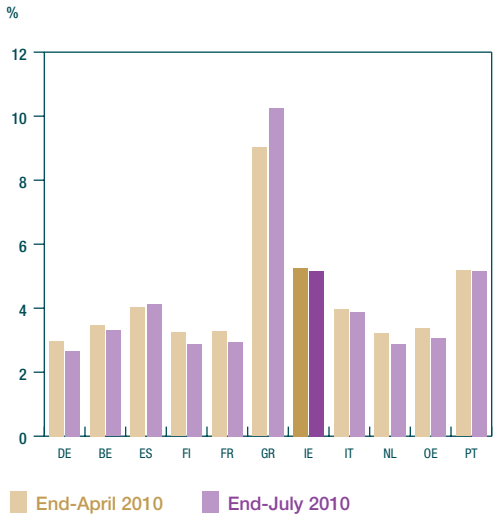
Conclusions

Ireland's gross external liabilities are very large in relation to GDP, but these are largely offset by external assets. While the external assets and liabilities of MFIs have declined over the past year for both IFSC and domestic credit institutions, the net external liability position of this sector continues to be significant, representing nearly 40 per cent of total net external debt at end-March. Non-Government sectors, including MFIs, have increased domestic savings in recent quarters, thereby reducing their net external position as evidenced through visible improvements in the current account deficit. In contrast, the Government sector has been accumulating external liabilities and is now the largest contributor to the aggregate net external position, responsible for 55 per cent of the total Irish economy's net external liabilities at end-March 2010.

[4] Other sectors include non-bank financial companies — for example, securitisation vehicles, leasing companies, treasury operations, insurance companies and pension funds — and non-financial service and manufacturing companies, as well as an insignificant portion of households.

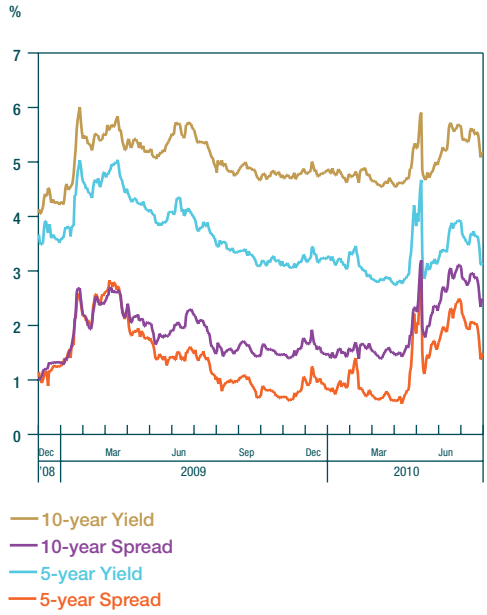
[5] Gross external debt is compiled in accordance with the International Monetary Fund's External Debt Manual. These accounts do not take equity or derivative contracts into consideration, nor is direct investment treated on a directional basis. The International Investment Position accounts, however, incorporate these instruments and record direct investment according to the directional principle.

Chart 3: Euro Area Ten-Year Government Bond Yields



Source: Thomson Reuters Datastream.

Chart 4: Irish Government Bond Yields and Spreads over German Equivalents



Source: Thomson Reuters Datastream.

Sovereign Debt Market

The first half of 2010 saw the more positive macroeconomic conditions overshadowed by the fallout of the Greek fiscal crisis with clear impacts on the sovereign debt markets for a number of euro area sovereigns, including Ireland, as market participants' attention turned to the weak fiscal situation facing euro area Member States. Following a number of interventions by the European Commission, IMF and the Eurosystem, market tensions eased somewhat in July. Among these interventions was the establishment of the €440 billion European Financial Stability Facility (EFSF). The period since early May brought a refocusing of investors' attentions away from European sovereigns' funding problems to a more benign global growth outlook at the time, and coupled with the publication of the stress test results of EU banks, improved global risk appetite. More recently however, weaker economic data towards the end of summer 2010 has caused a re-emergence of safe haven flows and heightened tensions in the euro area sovereign debt markets yet again.

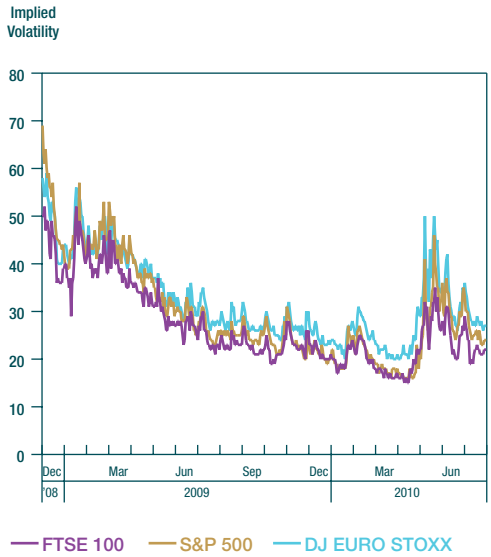
Over the two months ending July 2010, the Irish sovereign ten-year bond yield rose by 21 basis points, ending the period at 5.2 per cent. The five-year yield had a similar trajectory for the same period. The Irish ten-year yield increased to 5.7 per cent mid-June as the downgrading of Greek debt by Moody's to non-investment grade led to difficult market conditions; similar increases were seen in the five-year yield.

There was further widening in ten year spreads over German debt for Ireland and other Member States through August 2010. The increasing spread for the majority of euro area Member States highlights that investors' demand for Bunds remained high, given the heightened uncertainty of the global economic outlook. German sovereign debt yields reached historic lows in August 2010, highlighting the impact of these safe haven flows on the spreads between German and other sovereigns' debt, including Ireland. Despite a further downgrade of Irish sovereign debt, and continued concern over the ultimate cost to the State of its support to the domestic financial system there was still a significant appetite for Irish sovereign debt. The NTMA raised over €4.8 billion in their monthly bond auctions from end-May to end-August 2010, with a bid-to-cover ratio averaging 3.4, albeit at higher yield

Chart 5: Irish and International Share Price Indices (end-December 2008=100)

Source: Thomson Reuters Datastream.

Chart 6: Implied Equity Market Volatility



Source: Thomson Reuters Datastream.
Note: S&P 500 is the implied volatility of S&P 500 options taken from the VIX index. FTSE 100 is the implied volatility of FTSE 100 options taken from the FTSE 100 Volatility index. DJ EURO STOXX is the implied volatility of DJ EURO STOXX 50 options taken from the VSTOXX index.

levels. Irish Treasury Bill auctions were also generally well received by the market.

Equity Markets

Having experienced losses since early May 2010, equity markets began to recover somewhat in the subsequent months. By the end of July 2010 the ISEQ Index of Irish Shares, DJ EURO STOXX, the FTSE All Share and the S&P 500 had increased by 5 per cent, 10.3 per cent, 6.6 per cent and 3.2 per cent respectively, from their lowest levels in May. On an annual basis, the major international indices had also increased. The euro area stock prices (DJ EURO STOXX) rose by 7.3 per cent; the markets in the United States saw an increase of 11.6 per cent (S&P 500) in the 12 months ending July 2010, while the ISEQ Index of Irish Shares had risen by 4.5 per cent over the same period.

Following a period of market uncertainty from early May through to mid-July due to the intensification of the Greek fiscal crisis, and concerns about the exposures of certain banks to sovereign debts, there appeared to be a recovery in the course of July. The recorded increases in stock prices stem from the easing of these sovereign debt concerns and the publication of the results of the stress tests of EU banks. Financial sector stocks in the euro area benefitted strongly, with an increase of 17.3 per cent over the period end-May to end-July 2010, as investors were reassured as a result of the publication. Revised proposals for financial regulation put forward by the Basel Committee on Banking Supervision added to the positive influences on stock prices. The rise in US stock prices in particular can be further attributed to greater risk appetite, yet the gains were limited due to expectations of subdued economic growth.

Foreign Exchange Developments

In the first seven months of 2010 the euro depreciated against other major international currencies, declining by 9.6 per cent, 6 per cent and 15.4 per cent against the US dollar, sterling and the Japanese yen, respectively. Following a significant weakening of the euro against the dollar in May, there was strengthening and by end-July 2010 the euro was trading at 5.9 per cent above what it was at end-May, yet this was 6.6 per cent below the 2009 average. The strengthening of the euro for the period between May and July was largely due to more positive than expected

macroeconomic news for the euro area. At the end of July 2010 the euro was trading at 13.6 per cent below its 2009 average against the yen. Following the marked decline of the euro against sterling in May 2010, the underlying trend of euro depreciation continued with the euro trading at 6.3 per cent below its 2009 average against sterling at end-July. As concerns over the euro area sovereign debt market eased somewhat since the publication of the results of the stress tests of EU banks, the depreciation of the euro against major international currencies has become less pronounced. However these tensions have re-emerged more recently, contributing to a further decline in the euro against other major currencies, the largest of which was a 4.9 per cent fall against the yen during August. By end-August 2010, the euro was trading at 12 per cent, 19.6 per cent and 7.1 per cent below its end-2009 level against the US dollar, Japanese yen and sterling, respectively.

B: Money and Credit

Monetary Aggregates

The euro area broad money supply (M3) increased by 0.2 per cent on an annual basis in July 2010, and the three-month moving average annual growth in M3 stood at 0.1 per cent. The first seven months of 2010 saw a steady increase in the annualised six-month growth rate standing at 1.9 per cent at the end of the period. This reflects a period of significant stability, following a consistent steady decline in the rates of M3 growth from late 2007. The trend of weak monetary growth, however, continues to be influenced by an incentive to allocate new funds outside of M3 due to the relatively high remuneration of non-monetary interest bearing assets. This effect is becoming increasingly less significant. The Irish contribution to euro area M3 decreased by 3 per cent on an annual basis in July 2010, with the annual decline in growth averaging 2.3 per cent in the three months ending July 2010.

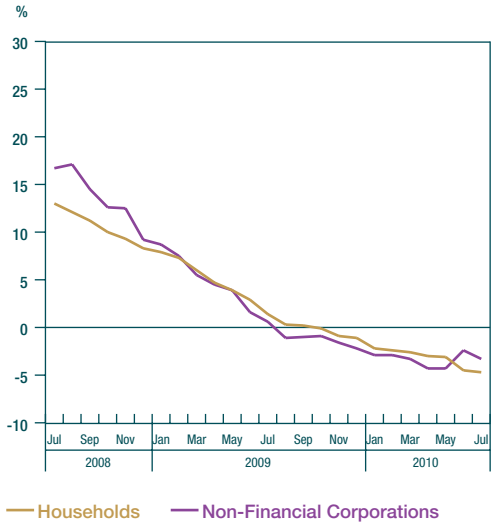
A significant expansion in M1 in Ireland led to an average annual growth rate of 3.2 per cent for the last three months of 2009 in the Irish contribution to euro area M3. This rate of M1 growth declined from a high of 13.7 per cent in November 2009 to 1.4 per cent in July 2010 and contributed to the decrease in the Irish contribution to euro area M3. The pace of growth of currency in circulation dropped considerably from 2009 levels due to base effects arising from the response to the collapse of Lehman Brothers in 2008, but has remained stable throughout 2010, averaging 7.5 per cent in the three months ending July 2010. The opening months of 2010 saw large growth rates in overnight deposits yet these have proceeded to decline in more recent months with a relatively low annual growth rate of 0.6 per cent in July 2010.

The positive growth rates of M1 have eased slightly in recent months both domestically and at a euro area level, as interest rate developments have altered the opportunity cost of holding more liquid forms of monetary assets such as overnight deposits relative to longer-term deposits. As a result, the annual growth of M2-M1 components, e.g. deposits with agreed maturity up to 2 years, has also become less negative in recent months, reversing a trend evident for over a year. In general, the Irish contribution to euro area M2-M1 has declined by 2.2 per cent in the twelve months ending July 2010, following annual declines of 7.5 per cent in June and 6.6 per cent in May. Euro area M2-M1 has declined by 7.1 per cent over the year ending June 2010.

Developments in Private-Sector Credit Advanced by Irish Resident Credit Institutions

Credit advanced to the Irish private sector by the domestic banking system remains subdued, reflecting weak demand and to some extent, remaining supply constraints. The annual rate of change in credit to households and non-financial corporations remained negative in recent months, as has been the case since mid to late 2009. By end-July 2010, NFC credit (which includes loans and securities) had declined by 4.7 per cent from its peak in late 2008, with NFC loans down 4.1 per cent from peak. The annual rate of change in NFC loans averaged minus 3 per cent in the three months ending July 2010, with the equivalent measure for the euro area as a whole being minus 1.5 per cent. NFC loans

Chart 7: Household and Non-Financial Corporations Credit, Annual Change



Source: Central Bank of Ireland.

Note: Rates of change presented here exclude the effect of revaluations, reclassifications and exchange-rate movements and most accurately reflect credit developments based on actual transactions over the period. The impact of securitisation or other means of loan disposal, including transfers to NAMA, are also excluded. See Box A 'Measuring Credit Growth — A New Approach', in Monetary and Financial Market Developments, Central Bank of Ireland Quarterly Bulletin No.1 2010. Back-data of these series to 2004 are available at http://www.centralbank.ie/sta_late_data.asp.

in the euro area have begun to contract at a much slower pace in recent months, with positive net monthly flows of NFC loans evident since April 2010. Meanwhile, the monthly flow of NFC lending in Ireland turned negative again in July 2010, after being positive in May and June. The monthly net flow of NFC loans in Ireland averaged minus €400 million in the first seven months of 2010, compared with approximately minus €190 million in the same period in 2009.

Underlying the aggregate developments in NFC lending in Ireland, shorter term loans with up to one year maturity, which would include the use of overdraft facilities, are actually increasing on an annual basis, growing by 5.7 per cent in the year ending July 2010. Longer term NFC loans, with an original maturity of over five years have contributed most to the aggregate decline in NFC lending, falling by 11.6 per cent in the year ending July 2010.

These trends suggest that the contraction in NFC lending is particularly relevant for capital investment purposes, and less so for short-term working capital purposes.

The annual rate of change in loans advanced to Irish households was minus 4.7 per cent in July 2010, and averaged minus 3.2 per cent in the first seven months of 2010. In the euro area as a whole, household loans increased by 2.6 per cent on an annual basis in July 2010. It is now evident that the lending cycle for Irish households remains on a downward trajectory, whereas that of the euro area as a whole has passed its trough. The net flow of household loans in Ireland was negative for ten out of the twelve months ending July 2010, as repayments were higher than draw-downs of loans during these months. The monthly net flow of household loans has averaged minus €794 million in the first seven months of 2010, compared with minus €69 million over the same period in 2009.

Underlying these aggregate developments have been declines across all categories of household loans. The monthly net flow of loans for consumption purposes has been negative for all but one month since January 2009, with the annual rate of change being minus 14.7 per cent in July 2010 and averaging minus 11.4 per cent in the first seven months of 2010. Meanwhile lending for house purchase also continues to decline on an annual basis as it has done since March 2010. The annual rate of change in lending for house purchase was minus 1.6 per cent in July 2010, following annual declines of minus 1.3 per cent and minus 1.5 per cent in May and June 2010, respectively.

The latest data on the breakdown of residential mortgages up to Q2 2010, show that on an annual basis the decline in residential mortgage lending has mostly been concentrated in buy-to-let (BTL) mortgages and lending for the purchase of holiday homes (HHs). Lending for principal dwelling house (PDH) mortgages has, however, also begun to

Table 1: Developments in Private-Sector Credit by Sector of Economic Activity[a]

	Outstanding Amount at end-June 2010		Change in Credit[a]					
			Outstanding Amount Q-on-Q		Estimated Underlying Q-on-Q		Outstanding Amount Y-on-Y	
	€ million	% share	€ million	% change	€ million	% change	€ million	% change
Primary industries[b]	5,540	1.6	289	5.5	275	4.9	–622	–10.1
Manufacturing	6,443	1.9	–124	–1.9	–98	–1.4	–1,378	–17.6
Electricity, gas and water supply	806	0.2	39	5.0	49	6.3	–209	–20.6
Wholesale/retail trade and repairs	11,747	3.4	–145	–1.2	–101	–0.8	–1,489	–11.3
Hotels and restaurants	9,970	2.9	–608	–5.7	–2,422	–17.4	–1,325	–11.7
Transport, storage and communications	2,842	0.8	135	5.0	154	5.3	–441	–13.4
Financial intermediation	93,238	26.9	9,381	11.2	9,287	11.0	7,057	8.2
of which:								
— Lending to IFSC Companies	25,219	7.3	–2,282	–8.3			–5,252	–17.2
Property related sectors (Construction & Real estate)	81,078	23.4	–12,670	–13.5	–2,942	–2.5	–27,325	–25.2
Non-real estate business service activities	5,040	1.5	–841	–14.3	–184	–2.8	–1,121	–18.2
Services to households[b]	5,876	1.7	–61	–1.0	–17	–0.3	–511	–8.0
Personal[c]	160,270	35.7	–4,128	–2.5	–4,511	–2.7	–10,664	–6.2
of which:								
— Residential mortgages	143,995	31.0	–2,478	–1.7	–2,158	–1.5	–4,353	–2.9
— Principal dwelling houses	111,477	22.6	–1,849	–1.6	–2,072	–1.8	–1,736	–1.5
— Buy-to-lets	31,294	8.1	–574	–1.8	–340	–1.1	–2,563	–7.6
— Holiday homes/ second houses	1,224	0.3	–55	–4.3	–56	–4.4	–55	–4.3
— Other housing finance	494	0.1	–32	–6.0	–149	–21.3	–223	–31.1
— Other	15,781	4.6	–1,619	–9.3	–2,203	–11.0	–6,087	–27.8
Total	346,286	100.0	–7,969	–2.2			–40,103	–10.4

a The change in the Outstanding Amount reflects the change as reported on-balance sheet over the period. Changes in outstanding amounts can be influenced by non-transactions related factors, e.g. changes in impairment provisions and transfers to the National Asset Management Agency. The estimated underlying change removes the impact of such factors in order to present a more accurate picture of the flow of credit over the period.

b Primary industries refer to agriculture, forestry, fishing, and mining and quarrying. Services to households include education, health, and other personal services.

c The figures for the Personal sector include securitised mortgages, which are not included in the Total in Table 1. Some of the mortgage-backed securities created with these loans have been purchased by Irish credit institutions and would also be included under Financial Intermediation above. As such securitised mortgages are excluded to avoid double-counting in the Total figure. The share of Personal sector credit in the Total reflects the on-balance sheet (i.e. non-securitised) personal sector loans.

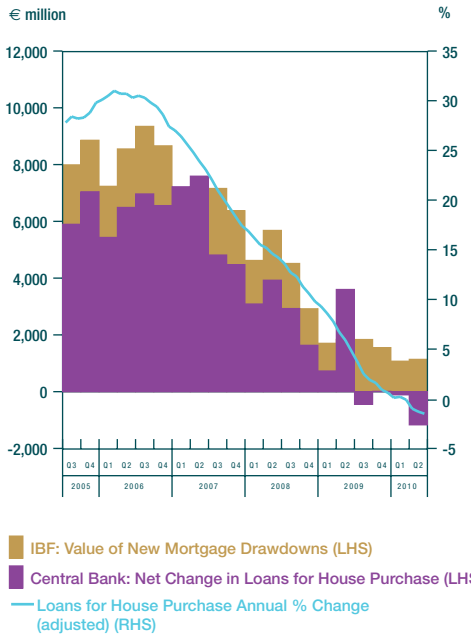
Source: Central Bank of Ireland. Data are based on NACE Rev. 1 industrial codes. For earlier data see Table C8 of the Central Bank Quarterly Bulletins. As of QB No.4 2010, Table C8 has become Table A.14.

decline in recent months. When the impact of rising impairment provisions are excluded, the underlying decrease in PDH mortgages is estimated to have been approximately €2 billion (minus 1.8 per cent) during Q2 2010. The outstanding amount of BTL and HH mortgages were a combined 7.5 per cent lower in Q2 2010 compared with Q2 2009.

Turning to developments in credit by sector of economic activity, the most recent data show that the outstanding amount of credit advanced to the non-property non-financial business sectors[6] fell by €1.3 billion, or minus 2.9 per cent, during Q2 2010. When non-transaction related factors are excluded, however, it is estimated that the underlying decline in credit to these sectors was actually greater at minus 4.7 per cent. Over the first half of 2010, credit advanced to the non-property non-financial business sectors is estimated to have fallen by an underlying 5.6 per cent, with some of the more significant underlying declines in manufacturing (minus 8.1 per cent) and wholesale/retail trade (minus 4.1 per cent). In comparison, the underlying decline in the property related sectors of construction and real estate, which excludes the impact of NAMA transfers, is estimated to have been 2.5 per cent over the first half of 2010. Credit

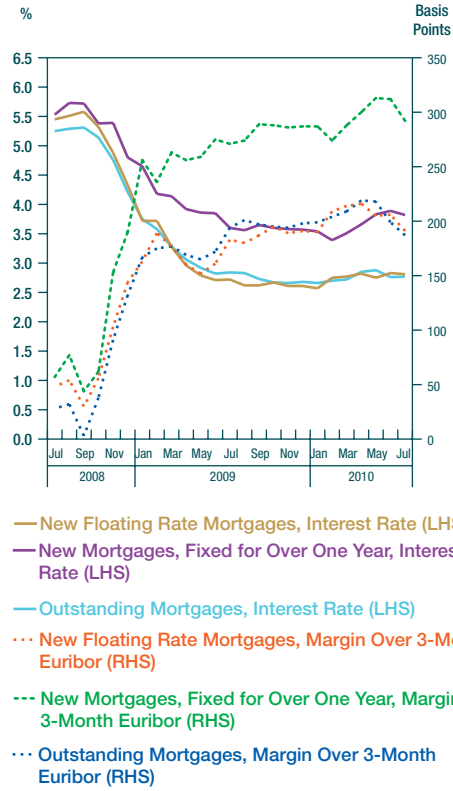
[6] The non-property non-financial business sectors are defined as business sectors excluding construction, real estate activities and the financial intermediation sector. Social and personal sectors are also excluded in this categorisation.

Chart 8: Quarterly Increase in Loans for House Purchase – New Lending and Outstanding Amounts



Source: Central Bank of Ireland and the Irish Banking Federation.

Chart 9: Mortgage Rates to Households



Source: Central Bank of Ireland.

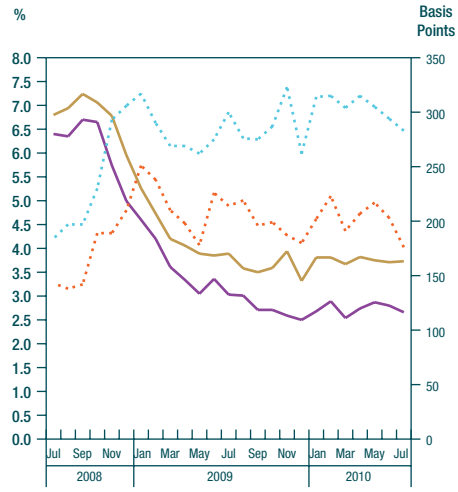
advanced to the financial intermediation sector has increased markedly in the first half of 2010, mostly driven by the holdings of bonds issued by the NAMA SPV to participating credit institutions in purchasing land and development loans over the period.

Domestic Lending and Deposit Rates

Interest rates on loans to household customers have in general been stable in most recent months, following increases over the period from end-January to end-May 2010. Margins have, however, declined since May, particularly as Euribor rates increased over this period due to the uncertainty in euro money markets surrounding euro area banks' exposure to certain sovereigns. New mortgages with floating rates or up to one year fixation had an average rate of 2.8 per cent at end-July 2010, up slightly from 2.6 per cent at end-December 2009. The average rate for new mortgages fixed for periods greater than one year — which constitute an increasing proportion of new mortgage agreements — increased more substantially over the period by approximately 25 basis points to 3.8 per cent. The average rate for existing mortgages has declined marginally in recent months, but at 2.8 per cent in July 2010, is still approximately 10 basis points higher than at the end of 2009. The increase in this rate reflects developments for variable-rate customers over the period, albeit that the impact of changes in rates charged on variable rate mortgages has a smaller impact on the aggregate outstanding rates, given the scale of existing tracker mortgages in the market.

Rates and margins on NFC lending have remained quite variable, with a different outturn for smaller versus larger loans to businesses. Rates on new short-term or variable-rate loans to NFCs have generally remained stable in recent months following increases in the first quarter of 2010. The margin between these lending rates and 3-month Euribor has, however, declined since April 2010. Margins on NFC lending have declined noticeably for large (over €1 million) and small (under €1 million)

Chart 10: New NFC Loans with Floating Rate and up to One Year Initial Fixation



New Loans up to and Including €1 Million, Interest Rate (LHS)

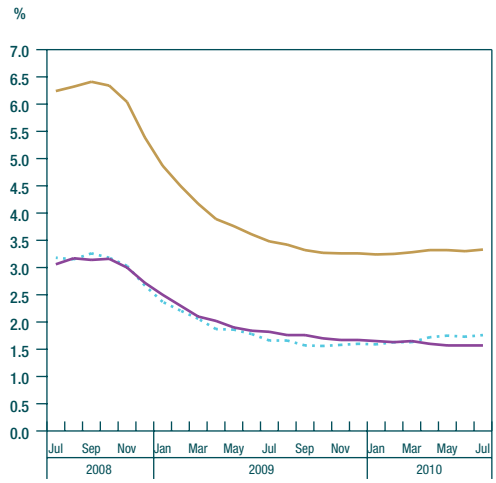
New Loans Over €1 Million, Interest Rate (LHS)

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: Central Bank of Ireland.

Chart 11: Margin between Loans and Deposit Rates for Households and Non-Financial Corporations



Average Interest Rate for Household and NFC Loans

Average Interest Rate on Household and NFC Deposits

Margin between Average Loan and Deposit Rates

Source: Central Bank of Ireland.

loans as inter-bank borrowing rates increased over the period.

Deposit rates for households and NFCs have also fallen. Interest rates on outstanding household deposits with a maturity up to two years fell by 35 basis points between December 2009 and July 2010. The proportion of household deposits which are redeemable at notice, or short-term savings accounts, continued to increase, as the fall in the rates offered for this category has not been as significant as the declines in rates on deposits in term deposit accounts. The rates for overnight NFC deposits continued to decline to record lows, standing at just 0.15 per cent in July 2010. Meanwhile rates offered on NFC deposits with an agreed maturity have remained relatively stable in the up to two years category, but in general have declined for longer-term deposits over two years.

Efforts by credit institutions to widen their margins are reflected in the upward trend in the difference between the average loan rate on outstanding lending and the average rate offered on outstanding deposits to households and NFCs. This follows a tightening in this margin between the beginning of the rate-cutting cycle in October 2008 and late 2009. The increase in the loans to deposits margin has become particularly noticeable in recent months, as margins over Euribor have been constrained due to the developments in the inter-bank funding market.

Developments in the International and Euro Area Economy

Overview

The global economy continued to grow at a strong pace in the second quarter of the year, although developments at a national level highlighted once again the uneven nature of the recovery. GDP growth in emerging economies generally remained robust, with a weaker expansion in advanced economies, where many of the headwinds from the financial crisis still exist. Looking ahead, there is a general expectation that the pace of the expansion will moderate — reflecting amongst other things the waning of factors which have provided a temporary support, such as the inventory cycle and fiscal stimulus — with the level of uncertainty surrounding the growth outlook increasing in recent months. On prices, there is little evidence of underlying price pressures emerging in advanced economies against a backdrop of significant excess capacity, weak labour markets and well anchored inflation expectations.

Following strong growth in the first three months of the year, and despite the intensification of the financial crisis in May, the global economy continued to expand at a robust pace in the second quarter. Manufacturing production remained the key driving force behind the recovery as producers continued to narrow the gap that developed in early 2009 between output — which fell extremely sharply in the early months of the downturn — and final demand, which experienced a less significant decline. Developments at a national level, meanwhile, highlighted once again the uneven nature of the current recovery. GDP growth in emerging economies remained robust, with the Chinese economy continuing to record double digit growth on an annual basis. The recovery in advanced economies, on the other hand, has occurred at a more gradual pace; real GDP expanded by an annual 2.8 per cent in the OECD region in the second quarter. This divergence reflects the fact that many of the headwinds from the financial crisis — such as the necessity to adjust balance sheets — still exist in advanced economies. Focusing on individual economies within the advanced group of nations also highlights the ongoing unevenness of the recovery. Having grown modestly in preceding quarters, the pace of the euro area expansion accelerated significantly in the three months to June when real GDP increased by a surprisingly strong 1 per cent (quarter-on-quarter). This growth rate was primarily driven by a rapid expansion in Germany, with much more modest increases recorded in the region's other large economies. The pace of the US and Japanese expansions moderated, however, with growth in the former falling from an average of 1.0 per cent in the previous two quarters to 0.4 per cent (quarter-on-quarter).

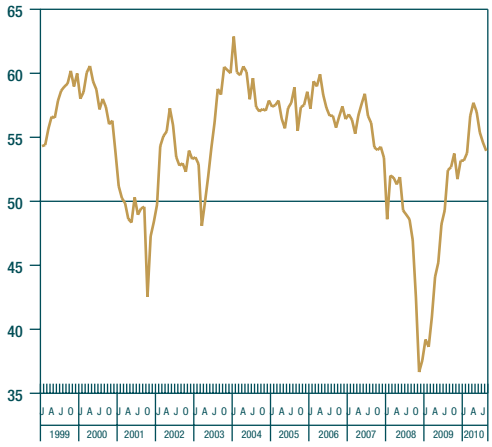
Turning to the growth outlook, there is a general expectation that the pace of the global expansion will moderate somewhat. There were already indications of this during the second quarter (see Chart 1) and forward looking orders data provide further evidence. This moderation is likely to reflect a number of factors including deliberate policy tightening in some emerging economies, a waning of the temporary support provided by fiscal stimulus policies and the inventory cycle (see Box 1), and fiscal consolidation measures in Europe. Table 1 outlines the latest International Monetary Fund (IMF) projections produced in July. Growth in the euro area this year is now likely to be stronger given the region's performance in the second quarter. Against this, however, is the fact that growth in the US may well be weaker than was expected when these projections were prepared.

Table 1: Changes in Real GDP in Selected Economies

	Percentage Change		
	2009[e]	2010[f]	2011[f]
Global	–0.6	4.6	4.3
United States	–2.4	3.3	2.9
Japan	–5.2	2.4	1.8
Euro area	–4.1	1.0	1.3
United Kingdom	–4.9	1.2	2.1
China	9.1	10.5	9.6

e Estimate
f Forecast.
Source: IMF World Economic Outlook Update, July 2010.

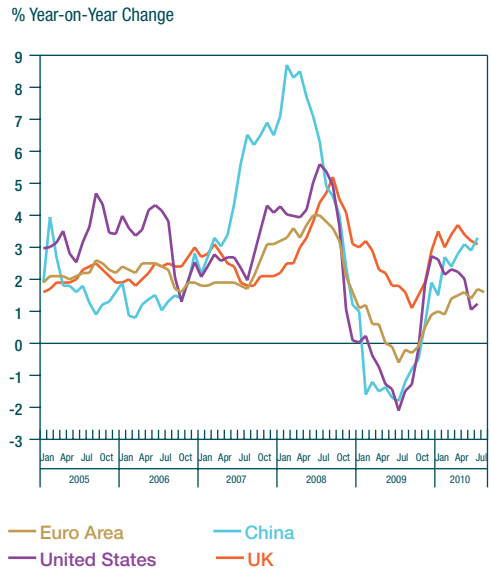
Chart 1: Global PMI Output Index



Source: Markit PMI

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

Chart 2: Inflation in the Major Economies



Source: Reuters EcoWin

Developments in recent months suggest that the level of uncertainty surrounding the global growth outlook has increased, with recent data raising some question marks over the extent of the slowdown that is likely to occur. In the US, for example, data have generally been weaker than expected, particularly in the housing market, and consumer confidence has been declining (see Box 2). It also remains unclear what impact fiscal consolidation measures will have on the pace of recovery in Europe given that, following an initial decline, business and consumer confidence indicators have picked up once again in recent months.

Focusing on inflation developments, headline rates generally remain higher than they were a year ago, reflecting higher energy prices (see Chart 2). In the euro area and the US economies the rate remains relatively low, however, with little evidence of underlying price pressures emerging against a backdrop of significant excess capacity, weak labour markets and well anchored inflation expectations. In some emerging economies there is evidence of stronger inflationary pressures, but policymakers have been quick to respond to these by tightening policy where necessary.

Section 1: Euro area

Economic Growth — Recent Developments

Having recorded a modest increase in the preceding three quarters, the pace of the euro area recovery strengthened considerably in the second quarter of 2010. Real GDP increased by a sharper than expected 1.0 per cent, the region's strongest quarterly expansion for four years. This was primarily driven by rapid

Box 1: Inventory adjustment and the global recovery *By Rónán Hickey*[1]

One of the significant features of the recent global downturn and subsequent economic recovery is the key role that inventory adjustment has played in first dampening, and more recently supporting, global growth. Following several years of very strong growth, inventory levels in the major economies started to decline sharply in the final months of 2008, much more so than had occurred at times of previous economic weakness (see Chart A and B). In the US, inventories declined by over $125 billion between the fourth quarter of 2008 and the third quarter of 2009, compared with a decline of around $90 billion in the preceding three recessions combined. In the euro area, where data are only available back to 1995, stock levels were still falling in the second quarter of this year, resulting in a total decline of €60 billion since the start of 2009. This compares with a net reduction of €7 billion during the slowdown earlier in the decade. Furthermore, falling inventories was not limited to firms in the large developed economies. PMI survey data show that stock levels also declined notably in emerging economies in late 2008 and early 2009 (see Chart C).

The larger inventory adjustment over this period primarily reflected the nature of the shock that hit the global economy in the second half of 2008. Activity levels were only modestly affected in the early months of the subprime crisis, but following the collapse of Lehman Brothers Investment Bank in September 2008 the level of uncertainty surrounding the global economy surged. Sentiment levels across all sectors of the economy declined sharply and consumers, firms and investors became extremely risk-averse, delaying purchases and investments that were considered 'postponeable' until they had a clearer idea of how the financial crisis would play out. Financial and trade channels ensured that this shock was transmitted rapidly from advanced to developing economies, with highly integrated international supply chains amplifying this effect. In such an uncertain environment the rational decision for firms was to meet demand by reducing existing stocks.

[1] The author is an economist in the Bank's Monetary Policy and International Relations Department.

Chart A: Change in US Inventories as from the Preceding Quarter

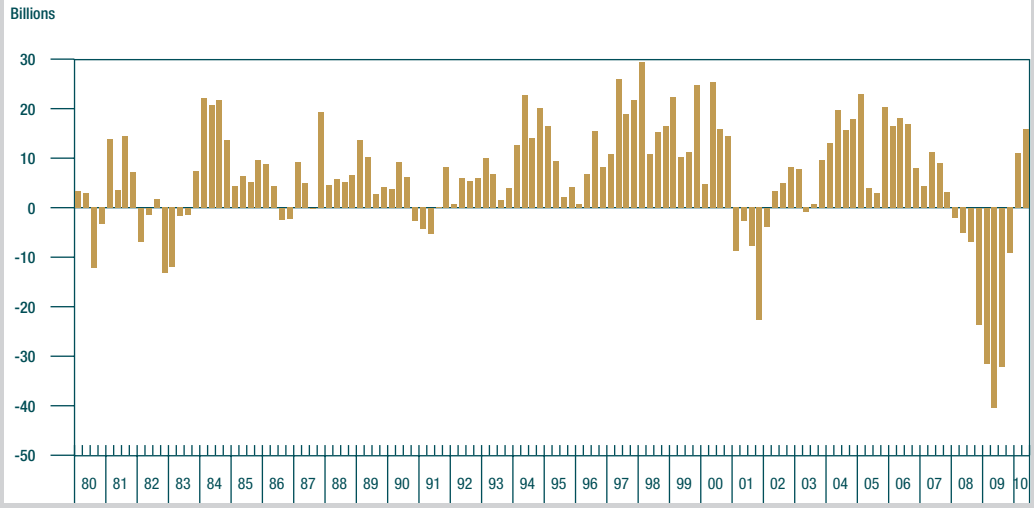


Chart B: Change in Euro Area Inventories as from the Preceding Quarter

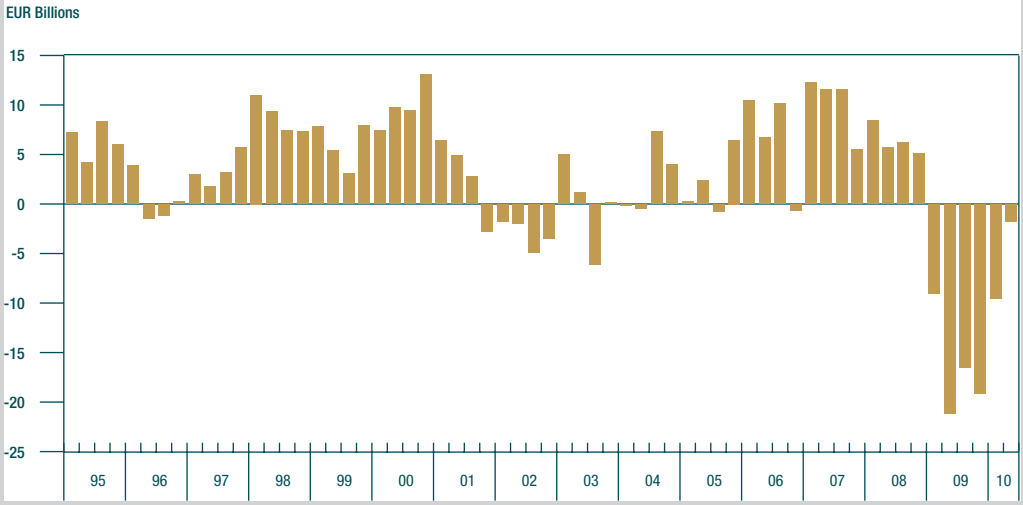


Chart C: Stocks of Finished Goods in Emerging Economies

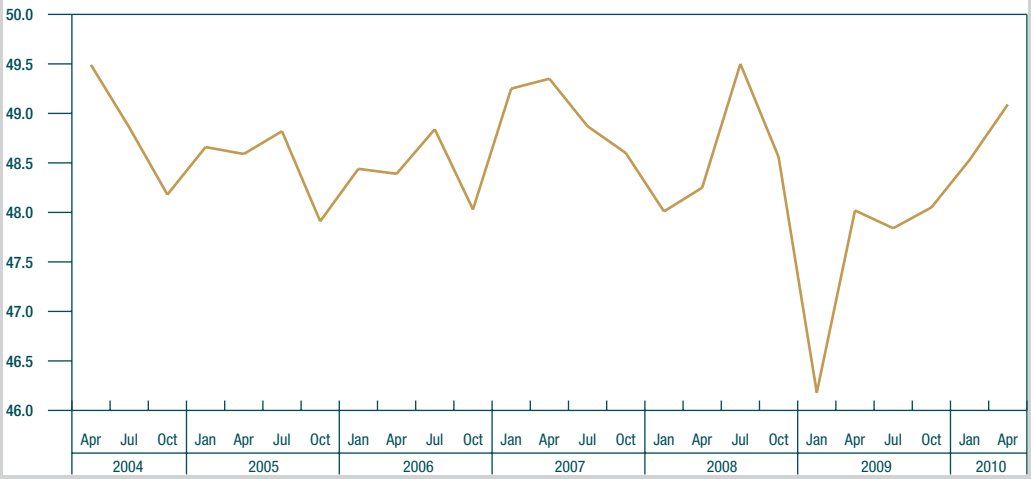
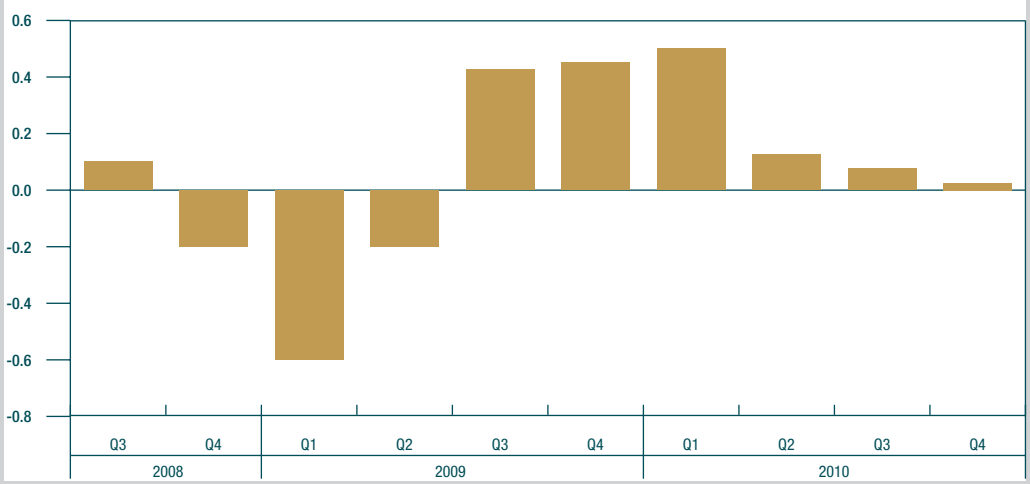


Chart D: Contribution of Inventories to Change in OECD GDP



This downward adjustment in inventory levels reached its peak around the middle of last year and inventory adjustment has been making a positive contribution to global growth ever since. This has reflected two distinct developments. Firstly, as the level of uncertainty surrounding the global economy returned to more normal levels, and as it became evident that the worst feared scenarios would not occur, production levels started to recover and, in many countries, inventories also picked up as firms looked to bring them closer to normal levels. In the US, for example, stocks began to increase once again in the first and second quarters of this year. Furthermore, even in many cases where inventories have continued to decline, they have made a positive contribution to the growth rate as the pace of the decline has slowed significantly. While this might seem counterintuitive, it reflects the fact that when less final demand is covered by inventory drawdown, the economy has to produce more goods to cover the shortfall. This has been the case in the euro area where, despite inventories falling by over €10 billion in the first half of 2010, the component has contributed a full percentage point to the real growth rate. Notably, these positive contributions have been even more significant than the declines that preceded them. This has particularly been the case in the advanced economies (see Table 1 and Chart D); for the OECD region as a whole inventories are estimated to have contributed around 1½ per cent to a total growth rate of 2¾ per cent in the four quarters to Q2 2010.

Table: Contribution of expenditure components to change in real GDP, Q3 2009 to Q2 2010

	United States	Euro Area	UK
Domestic Demand (ex inventories)	2.0	0.5	1.6
Inventories	1.8	1.5	1.3
Net exports	–0.8	0.0	–1.4
GDP	3.0	1.9	1.6

While stock adjustment has provided a significant support to the global recovery, this is not expected to continue. Chart D also reveals that the inventory cycle appears to have peaked at the start of 2010, with the OECD estimating that it will contribute only marginally to real GDP growth in the region in Q3 and Q4. Support for this view comes from the fact that inventory levels in the US and the euro area were broadly in line with their 10-year average in the second quarter. Given that a significant degree of uncertainty still surrounds the economic outlook, firms would be expected to want to keep inventory levels relatively lean. This suggests that stock levels may not pick up much more. The implication of this for the global economy is that overall growth will moderate unless a different growth component strengthens sufficiently to compensate for its decline.

Sources: Chart A — Bureau of Economic Analysis; Chart B — Eurostat; Chart C — Markit PMI data; Chart D — OECD Economic Outlook, May 2010; Table — Reuters Ecowin.

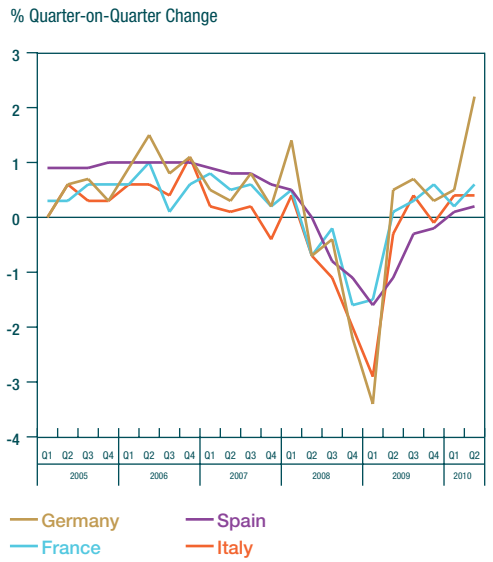
growth in the German economy, with more modest increases recorded in the region's other large economies (see Chart 3). The euro area expansion partly reflected a temporary boost to construction output linked to inclement weather in the first months of the year, but overall the increase was relatively broad based. Exports grew strongly in the second quarter, as foreign demand for euro area goods and services were supported by continued strong global growth and a more competitive euro exchange rate. As Table 2 outlines, imports also grew strongly, however, and as a result the contribution from net exports was only marginally positive. On the domestic side, private consumption spending recorded its strongest increase since 2007, despite continued weakness in the labour market, subdued wage growth and a significant decline in new car sales as the boost provided by car scrappage schemes continued to unwind. The increase in fixed investment did not just reflect the construction rebound, with national data revealing increases in machinery and equipment investment also. Firms in the region continued to run down inventories, although as this occurred at a slower pace than in the preceding quarter the component made a positive contribution to the growth rate (see Box 1). Turning to the third quarter, business confidence indicators have continued to strengthen while, following a temporary decline in May — as governments announced fiscal consolidation measures — consumer confidence has picked up once again and is now above its long run average (see Chart 4). Nevertheless, there is an expectation that the region's growth rate will moderate in the second half of the year against the backdrop of a normalisation of construction spending and weaker growth in the global economy.

Table 2: Contributions of expenditure components to percent change in real euro area GDP

	2009		2010	
	Q3	Q4	Q1	Q2
Personal Consumption	–0.1	0.1	0.1	0.3
Government Consumption	0.1	0.0	0.1	0.1
Fixed Investment	–0.2	–0.2	–0.1	0.3
Inventories	0.5	0.0	0.8	0.2
Exports	1.0	0.8	0.9	1.7
Imports	–0.9	–0.5	–1.4	–1.6
GDP	0.4	0.2	0.3	1.0

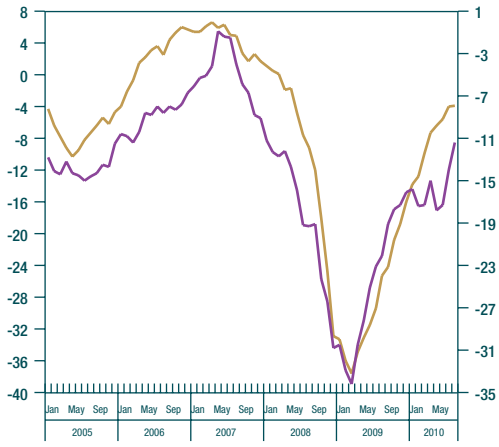
Source: Eurostat.

Chart 3: Euro Area GDP Growth



Source: Reuters EcoWin

Chart 4: Euro Area Confidence Indicators



Source: Reuters EcoWin

Economic Growth — Outlook

Looking ahead, the region's recovery is expected to occur at a stronger pace than was anticipated at the time of the last Quarterly Bulletin; the latest ECB staff projections anticipate that euro area real GDP will grow by between 1.4 and 1.8 per cent in 2010 and by between 0.5 and 2.3 per cent in 2011. This represents upward revisions in the ranges for both years when compared with June's projection exercise, revisions that primarily reflect the stronger than expected outturn in the second quarter of this year. This will directly boost the 2010 annual growth rate and should ensure that growth in 2011 benefits from a stronger positive carry-over effect.

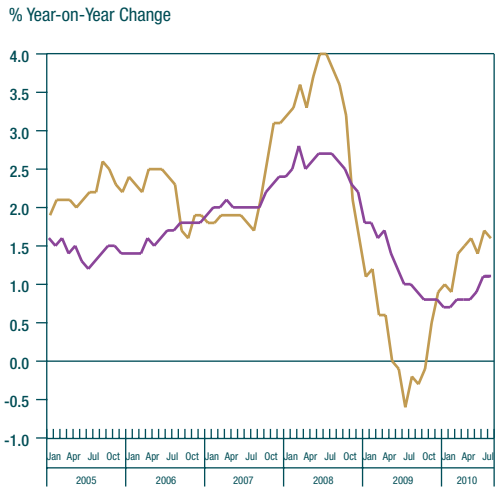
Overall the pace of the recovery will remain moderate and uneven, however. The global economy is expected to remain supportive, although the pace of the global expansion may moderate somewhat as the support provided by temporary factors such as the inventory cycle and fiscal stimulus wanes. A recovery in domestic activity, meanwhile, is likely to occur at a gradual pace given the necessity for continued balance sheet adjustment across sectors, low capacity utilisation, softness in the labour market and the negative short term impact of fiscal consolidation policies. Notably, the level of uncertainty surrounding the growth outlook has increased in recent months. This uncertainty primarily relates to global economic prospects and the potential impact of fiscal adjustment on activity levels in the region. These factors also suggest that the risks surrounding the ECB staff projections are slightly tilted on the downside, especially in 2011.

Inflation — Recent Developments

Headline HICP inflation decreased marginally in the euro area in August, falling from 1.7 per cent in July to 1.6 per cent. The sectoral breakdown shows that energy price inflation remained a main contributor to the year-on-year inflation rate. As oil prices have come down from their peak of early May, however, the contribution of the oil-energy component to the headline growth rate has moderated, while that of the food component has been positive and increasing since June.

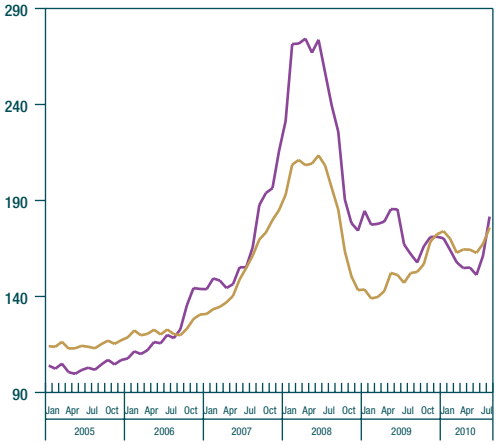
The headline annual inflation rate excluding energy was 1.1 per cent in August, unchanged from the previous month, as underlying inflationary pressures remain subdued. Producer prices are slowly recovering from their lows of 2009, and increased by 4 per cent in the year to July, with this growth rate being primarily driven by developments in intermediate goods and energy components. Labour cost growth has moderated significantly

Chart 5: Euro Area Inflation



Source: Reuters EcoWin

Chart 6: Euro area Food Price Inflation



Source: Eurostat

since the beginning of 2009, with all indicators expanding at a very modest pace. In the second quarter of 2010, annual growth in hourly labour costs decreased further from 1.9 per cent in Q1 to 1.6 per cent, while negotiated wages increased by just 1.9 per cent.

Oil and Other Commodity Prices

Brent crude oil prices have picked up gradually since the start of June, but remain around 10 per cent below their recent peak, reached prior to the intensification of the sovereign debt crisis in early May. Non-energy commodity prices, by comparison, have increased strongly since June reflecting developments in food and metal prices. Food prices recorded average growth of 8 per cent in July and August, as wheat prices surged following the drought and fires in Russia and Ukraine, and subsequent wheat export bans until the end of 2011 (see Chart 6). Adverse weather conditions in other regions have also been a factor. Food prices remain well below the exceptional levels reached in 2008 and 2009, however, and with world inventories of wheat and other food commodities higher than at that time it appears the wheat price increase will remain contained.

Inflation — Outlook

Following average inflation of just 0.3 per cent last year, the latest ECB staff projections anticipate that HICP inflation will increase to between 1.5 and 1.7 per cent in 2010 and between 1.2 and 2.2 per cent in 2011. The range for 2010 has been revised slightly upwards when compared with June's projections, primarily reflecting higher commodity prices. Domestic price pressures remain contained, however, and lower oil prices and the presence of significant slack in the economy suggest that inflation rates should remain relatively moderate. The risks to these projections are slightly on the upside, and reflect the potential for stronger than expected increases in indirect taxes and administered prices, given the need for fiscal consolidation, as well as from the evolution of commodity prices.

Section 2: External Environment

Emerging EU Member States

The economies of the eight emerging non-euro area EU member states have shown continuing signs of stabilisation, with growth returning on a quarterly basis in almost all countries. There are, however, significant cross-country differences in the rate of recovery and a high degree of volatility within countries, with Poland and the Czech Republic faring considerably better than their neighbours. An improvement of the external environment was largely responsible for the more upbeat performance

Table 3: Contributions of expenditure components to percent change in real US GDP

	2009		2010	
	Q3	Q4	Q1	Q2
Personal Consumption	1.4	0.7	1.3	1.4
Government	0.3	–0.3	–0.3	0.9
Fixed Investment	0.1	–0.1	0.4	2.1
Inventories	1.1	2.8	2.6	0.6
Exports	1.3	2.6	1.3	1.1
Imports	–2.7	–0.7	–1.6	–4.5
Real GDP	**1.6**	**5.0**	**3.7**	**1.6**

Source: BEA

in central and eastern Europe in the first half of 2010 and accordingly there are concerns that the slowing global recovery will have some negative impact on the emerging EU member states. Domestic demand also remains relatively weak and will continue to be a drag on growth in the coming quarters; high unemployment rates in particular will limit any recovery of private consumption. Deleveraging is ongoing in the banking sector, which further limits consumption and investment opportunities. Inflation is once again rising in the new member states, although rates remain subdued in most countries due to the still high level of excess capacity, with the exception of Hungary and Romania. The recent pick up in prices has been driven by developments in commodity and energy prices, and planned increases in administered prices may affect inflation going forward. However, a continuing period of moderate inflation is expected until economic recovery becomes more entrenched.

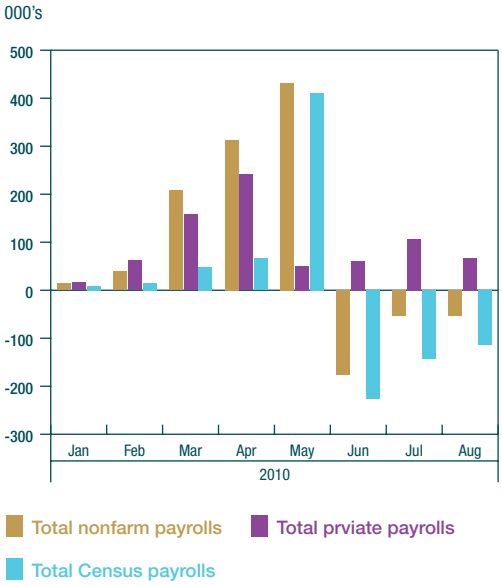
United States

According to the Bureau of Economic Analysis' latest[2] estimate, US real GDP growth slowed significantly during the second quarter of the year to an annualised rate of 1.6 per cent, down from 3.7 per cent in Q1 (see Table 3). This moderation in the growth rate reflected a significant decline in the contribution of inventories coupled with a large negative contribution from net exports as imports to the economy expanded rapidly. In contrast, the growth rate received significant support from fixed investment, the increase in which was predominantly driven by growth in computers and equipment, reflecting the deferral of capital outlays during the downturn and a need to replace ageing equipment. Residential investment also contributed positively to fixed investment growth, most likely reflecting a rush on building to meet the deadline for the housing tax credit. The contribution of Personal Consumption Expenditure (PCE) increased marginally, whilst government expenditure recorded its first positive contribution to real GDP growth since the third quarter of 2009.

Turning to more recent developments — and looking ahead — there is an expectation that the pace of the recovery will moderate as the positive impact from the inventory cycle and fiscal stimulus measures weakens. The level of uncertainty surrounding the growth outlook has picked up significantly in recent months, however. Recent data have generally been weaker than expected, particularly in the housing market where sales fell to historically low levels and available supply increased to the highest level on record (see Box 2). In the labour market, nonfarm payrolls declined consistently from June to August as weak growth in private sector payrolls failed to compensate for significant declines in the number of workers hired for the Decennial Census (see Chart 7). Overall since the beginning of 2010, the US has only recovered around 750,000 of the 7½ million jobs lost during the recession, while the unemployment rate remained elevated at 9.6 per cent in August. These developments have weighed on consumer confidence and are likely to weigh on real PCE growth. Turning to business activity, PMI indicators for the services and manufacturing sectors point to continued — but weaker — output growth in the first months of the third quarter. More significantly, the new orders components of the PMI have also

[2] The BEA's second estimate of growth for the second quarter of 2010, released on 27 August 2010.

Chart 7: Change in US Payrolls



Source: Bureau of Labour Statistics

Chart 8: United States Manufacturing PMI

Source: Markit PMI

weakened in recent months, pointing to further moderation. The decline in the manufacturing orders indicator has been particularly sharp, although it remains consistent with positive growth (see Chart 8).

Reflecting the slowdown in economic activity, the Federal Reserve's Open Market Committee (FOMC) announced at its August meeting that it would hold constant the Federal Reserve's holdings of securities at their current level by reinvesting principal payments from agency debt and agency mortgage-backed securities (MBS) in longer-term Treasury securities. At their August meeting, the Federal Reserve estimated that approximately $400 billion of MBS and agency debt will be repaid by the end of 2011. The FOMC kept interest rates unchanged at their meetings in July and August, maintaining a target range of zero to 0.25 per cent. The annual change in the Federal Reserve's preferred gauge of inflation — the core PCE deflator — declined slightly from 1.5 per cent in May to 1.4 per cent in both June and July.

United Kingdom

The UK economy expanded at a stronger than expected pace in the second quarter of the year, when real GDP increased by 1.2 per cent. This increase primarily reflected positive developments in business services and construction, each of which contributed 0.5 per cent to growth. Construction recorded a particularly strong increase of 8.5 per cent (quarter-on-quarter), following consecutive declines. Government and other services contributed 0.2 per cent to growth, a contribution that is unlikely to be sustained going forward given the fiscal consolidation measures outlined in June's Emergency Budget.

In its August Inflation Report the Bank of England (BoE) revised downward its growth projections to reflect a weakening of business and consumer confidence indicators, the additional fiscal consolidation measures announced in June, and a slower than anticipated improvement in credit conditions. In its report the BoE noted that downside risks have declined following the June Emergency Budget as the planned measures reduce the risk of a sharp increase in interest rates. Latest projections from the National Institute of Economic and Social Research (NIESR) — published in late July and which incorporate the latest consolidation measures — project real growth for 2010 and 2011 at 1.3 per cent and 1.7 per cent respectively. The 2011 figure is somewhat weaker than that forecast by the IMF in early July.

Box 2: Renewed weakness in the US housing market *By Nicola Doyle*[3]

The US housing market exhibited renewed weakness following the expiration of a deadline for a housing tax credit at the end of April 2010. This followed a period of sustained recovery from early 2009. Sales of new and existing homes plummeted to historically low levels, while the supply of houses reached historically high levels. Latest data from the Case-Shiller 20 house price index for June shows a slight decline in the annual rate of increase in house prices, although it remains positive. However, the Case-Shiller house price index is a 3-month moving average, therefore the full impact of the tax credit expiration is not evident in the latest data.

The housing tax credit was available for qualified first-time buyers[4] and qualified repeat home buyers[5]. One of the qualifying criteria was that buyers had to sign a sales contract by 30 April and complete their purchase by 30 June[6]. Under the scheme, qualified first-time buyers were entitled to a tax credit equal to 10 per cent of the purchase price of their principal residence up to a maximum of $8,000. Qualified repeat home buyers were also entitled to a tax credit equal to 10 per cent of the of the purchase price of their principal residence; however, their upper limit was lower at $6,500. Principal residences with a purchase price in excess of $800,000 were not eligible.

The annual growth rate of housing sales increased noticeably in the lead up to the 30 April deadline, see Chart A. Housing starts also increased significantly as builders rushed to meet the 30 June completed purchase deadline. Following the expiration of the deadlines, sales in new and existing homes plummeted to historically low levels. New home sales, which track the signing of sales *contracts* on new homes, recorded a monthly decline of 32 per cent in May. Latest data for July indicate that new home sales are at their lowest level since the series began in 1963. Existing home sales, which track *completed purchases* of existing homes, fell by a record 27 per cent from June to July, hitting their lowest level since the series was launched in 1999. The National Association of Realtor's (NARs) pending home sales index, which tends to lead existing home sales by around two months, rose modestly by 5.2 per cent in July providing tentative evidence that the fall in existing sales might bottom out in August.

The NAR provides a measure of supply which is calculated by dividing inventory by sales to give an estimate of months' supply i.e. how long it would take to sell a home given current sales and inventory. Reflecting the decline in sales, the months' supply of new and existing homes rose significantly following the expiration of the housing tax credit scheme. The supply of existing homes rose from eight months in May to 12 months in July, its highest level since 1983. The supply of new homes increased from six months in April to nine months in July, its highest level since April 2009.

[3] The author is an economist in the Bank's Monetary Policy and International Relations Department.
[4] A tax credit for first time buyers was introduced in July 2008 with a purchase deadline of July 2009. This deadline was subsequently extended to 30 November 2009, 30 June 2010, and, most recently, to 30 September 2010.
[5] The tax credit for repeat purchases was introduced in November 2009.
[6] This deadline was subsequently extended until 30 September 2010.

Chart A: US Housing Market Data

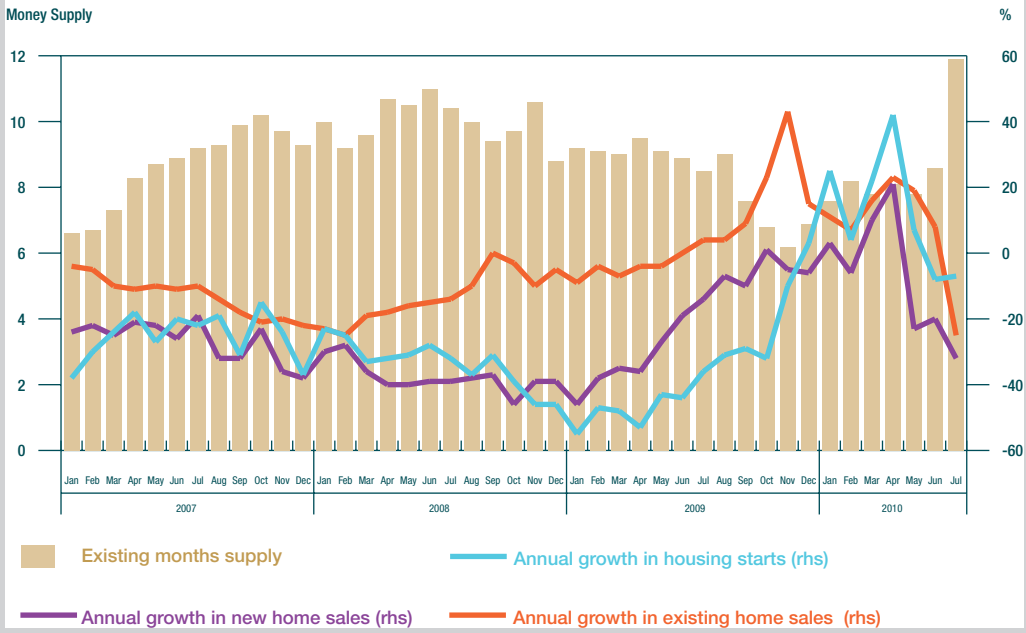
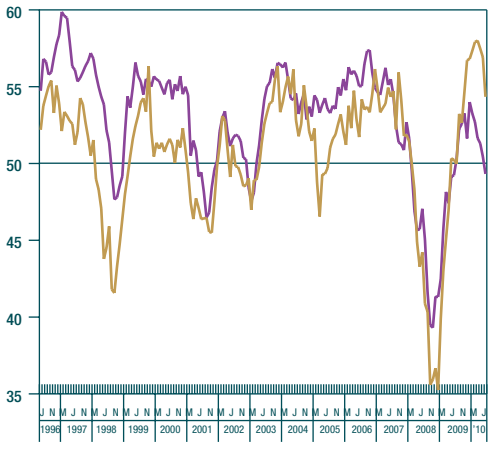


Chart 9: PMI Indicators for the UK



Source: Markit PMI

Turning to the latest data available for the third quarter, PMIs for both the services and manufacturing sectors declined in July and August (see Chart 9). The PMI for manufacturing indicated continued growth, albeit at a slower pace than in the second quarter, while the services PMI fell below 50 in August, indicating a slight contraction in output. Industrial production growth was weak in July, but, on the consumer side, retail sales improved for the third consecutive month at the start of Q3. However, the recent announcement of a further VAT increase in January 2011 makes this data difficult to interpret as it could reflect a rebound in consumption or the bringing forward of purchases in light of the VAT increase. In their latest Inflation Report the BoE outlines a number of downside risks to household consumption arising from the June Budget, including the increase in the VAT rate, the freeze on public sector pay, the prospective cuts in public sector employment, and slower growth in benefits. In addition to these factors, the BoE also notes that tight credit conditions and concerns over debt could also weigh on consumption. The Gfk/NOP consumer confidence indicator improved unexpectedly in August, but this followed significant declines in the preceding two months. As regards the housing market, the outlook turned negative in the third quarter of 2010 as the Nationwide house price index declined by 1.4 per cent from June to August. The declines over July and August represent the first time house prices have fallen for two

consecutive months since February 2009. This is attributed to the unwinding of the supply-demand imbalance that led to price increases over the previous year.

The annual CPI rate eased further to 3.1 per cent in July, from 3.2 per cent in June. At its latest meeting in August, the BoE's Monetary Policy Committee maintained the official bank rate at 0.5 per cent and the size of the asset purchase programme at £200 billion.

Japan

Real GDP growth in Japan decelerated to 0.4 per cent quarter-on-quarter in the second quarter of 2010 according to second estimates by Japan's Cabinet Office, up from the initial estimate of 0.1 per cent and following revised first quarter export-led growth of 1.1 per cent. Net exports continued to be the primary driver of growth in the second quarter while private inventory investment contributed negatively. The third and fourth quarter GDP figures for 2009 have been revised downwards, revealing negative growth in the third quarter. Based on IMF forecasts, growth of 2.4 per cent and 1.8 per cent is expected in 2010 and 2011 respectively.

The latest economic data shows evidence that the pace of economic recovery is losing momentum. The pace of increase in Japanese exports has been gradually declining in recent months as the strong appreciation of the yen weighs on competitiveness. Furthermore, increases in industrial production appear to be levelling off. Consumer spending, on the other hand, has been recovering gradually since mid-2009 due in part to government incentives but continues to face headwinds in the form of anaemic wage growth, unemployment concerns, the protracted decline of Japanese equity and property values and a continued deflationary environment.

With respect to price developments, Japan's core CPI declined by 1.1 per cent year-on-year in July while the headline rate declined by 0.9 per cent. This marked the seventeenth and sixteenth consecutive months of decline for these rates respectively, and inflation is not expected to move back into positive territory for an extended period. The Bank of Japan decided to leave its target for the uncollateralised overnight call rate unchanged at 0.1 per cent at its meeting on 6 September 2010.

Chart 10: Chinese Industrial Production

Emerging Asia

Economic activity remained strong in Emerging Asia in the second quarter of 2010 but generally expanded at a slower pace than in the first quarter. Exports, in particular, have been the principle driver of growth, helped by global and domestic inventory cycles and increased demand from advanced economies. Private domestic demand has also continued its upward momentum in supporting growth. Inflationary pressures in general have levelled off in the second quarter following increases in the first three months of the year.

In China, real GDP growth moderated in the second quarter of 2010 to 10.3 per cent, year-on-year, down from robust first quarter growth of 11.9 percent but greater than the upwardly revised 2009 annual growth rate of 9.1 per cent. Turning to the second half of the year, concerns over possible overheating are dissipating as the latest high frequency indicators have been on a decelerating trend in recent months. However, the data released for August have generally been positive, ending the period of deceleration as industrial production showed a slight improvement (see chart 9) and retail sales remained robust.

Meanwhile, imports, which have also been trending downwards in recent months against the backdrop of decelerating domestic investment, increased sharply in August resulting in a narrower trade surplus, down from recent elevated levels. Inflation increased further above the 3 per cent target in August to 3.5 per cent, its highest level in 22 months, due largely to increases in food prices related to recent flooding. Based on forecasts from the IMF, growth is expected to reach 10.5 per cent in 2010 before moderating to 9.6 per cent in 2011 with the unwinding of the fiscal and monetary stimulus.

Real GDP growth in India accelerated in the second quarter to 8.8 per cent year-on-year, following growth of 8.6 per cent in the first quarter. In response to elevated inflation, the Reserve Bank of India has raised policy rates by 100 basis points since March 2010. India's wholesale price index in July moderated to single digits for the first time since January, primarily due to base effects.

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.

Irish Households: Assessing the Impact of the Economic Crisis

Mary Cussen and Gillian Phelan*

Abstract

The impact of the changing economic environment on Irish households has been significant, with net worth falling 30 per cent since 2006. This article uses Quarterly Financial Accounts data to investigate how they have adjusted to the vastly different economic climate with which they are now faced. It finds that households' portfolio composition has shifted considerably, due largely to falling asset values. Results also suggest that households are now entering a long period of debt reduction. The consequence of deleveraging is a reduction in household consumption; a process that cannot proceed without an increase in the household savings rate. In the wake of the economic slowdown, there is a risk that increased savings could be a drag on consumption and bank lending in the future, with negative implications for the speed of economic recovery.

* The authors are Economists in the Bank's Statistics Department. The views expressed are solely the views of the authors and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks. The authors would like to acknowledge, with thanks, the helpful comments of Joe McNeill.

1. Introduction

In recent years the Irish economic environment has undergone considerable changes. The financial crisis led to considerable uncertainty and stock market volatility, with Ireland entering a recession in Q2 2008, and house prices having fallen by 35 per cent from their peak in Q4 2006[1]. While the impact of these trends on macro-economic developments and financial markets is well documented, much less evidence has been available on how Irish households have been affected. In particular, relatively little is known about how their economic behaviour has been altered, as they re-examine the appropriate balance between saving and spending. Fundamental to this relationship is decision making in relation to their portfolio of investments and level of indebtedness.

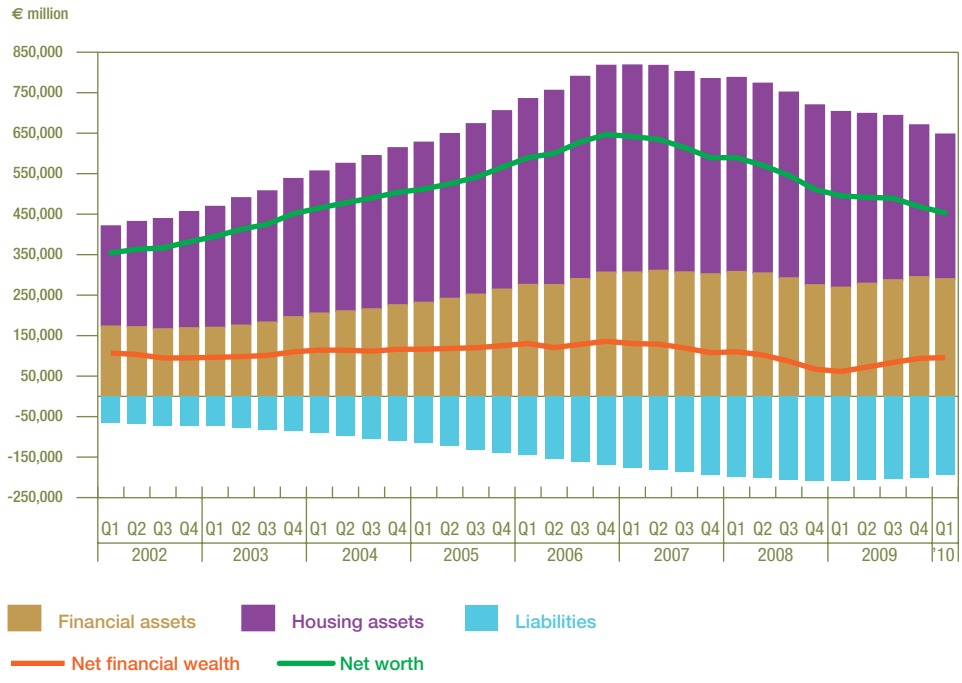
This article therefore, considers the interaction between households' investment and indebtedness, and the overall impact on saving in the context of the economic crisis. The analysis is based on *Quarterly Financial Accounts* for Ireland, published for the first time by the Central Bank in July 2010.[2] These accounts present a complete and consistent set of quarterly data for all sectors in the economy, including the household sector. They show financial balance sheets and transactions broken down by type of financial asset and liability from Q1 2002 to Q1 2010. In addition, with the inclusion of estimates for housing assets[3], a complete balance sheet for the household sector can be compiled, from which household net worth and saving can be derived.[4]

2. Household Net Worth and Portfolio Composition

Household net worth (the difference between total assets and liabilities) is depicted in Chart 1. Results show an increase of 83 per cent in net worth between Q1 2002 and Q4 2006, reaching a value of €647 billion. Cussen, Kelly, Phelan (2008) found that 84 per cent of the increase in net worth between 2001 and 2006 was driven by valuation changes arising from appreciations in house prices and financial asset values over the period. From Q1 2007 onwards the upward trend was reversed as house prices declined. Stock market volatility from Q4 2007 onwards also contributed to a decline in financial asset values which further accelerated the downward trend in net worth. By Q1 2010 net worth had fallen to €453 billion, returning to Q4 2003 levels. This represented a fall in net worth of 30 per cent between Q4 2006 and Q1 2010.

[1] Permanent tsb/ESRI (2010).
[2] Central Bank (2010). Quarterly Financial Accounts for Ireland: Q1 2002-Q1 2010, July.
[3] Internal Central Bank estimates.
[4] For example see Full Household Balance Sheet for Q1 2010 in Annex 1.

Chart 1: Net Worth of Irish Households, Q1 2002 – Q1 2010



In the context of declining net worth, analysing households' asset portfolio composition and behaviour is important for a number of reasons. Firstly, it provides a valuable insight into the extent to which households were exposed to the decline in house prices, the financial crisis, and the economic downturn. In addition, the impact of these developments on households' asset values can also be measured. Furthermore, portfolio composition analysis can provide an understanding of households' attitude towards risk, their liquidity preferences and their preparedness for retirement.

The impact of declining house prices and the recent financial turmoil on households' portfolio composition can be seen in Charts 2(a) and 2(b). Housing assets[5] as a proportion of total assets fell from 63 per cent to 55 per cent between Q4 2006 and Q1 2010, as shown in Chart 2(a). The composition of households' financial assets, depicted in Chart 2(b), reveal a marked shift in the portfolio composition from Q1 2008 onwards. Holdings of 'Currency and deposits' as a proportion of total financial assets increased from 39 per cent in Q1 2008 to 43 per cent in Q1 2010, while holdings of all other financial assets fell over the period. 'Quoted shares' which formed a relatively small proportion of overall financial assets, fell from 7 per cent in Q1 2007, when markets were at their peak, to 3 per cent in Q1 2010 as financial market turbulence adversely impacted equity prices. 'Unquoted shares and other equity' which includes unquoted equity investments and property held abroad were only slightly affected by the adverse economic conditions, falling from 16 per cent in Q3 2008 to 13 per cent in Q1 2010. 'Insurance technical reserves' (ITRs), which include life insurance and pension funds, also fell in the aftermath of the financial crisis from 41 per cent in Q1 2008 to 37 per cent in Q1 2009; however, by Q1 2010 ITR holdings had recovered to form 41 per cent of financial assets.

[5] Housing assets, as the predominant component of non-financial assets, are used as a proxy for all non-financial assets.

Chart 2a: Household Assets as a Proportion of Total Assets, Q1 2002 – Q1 2010

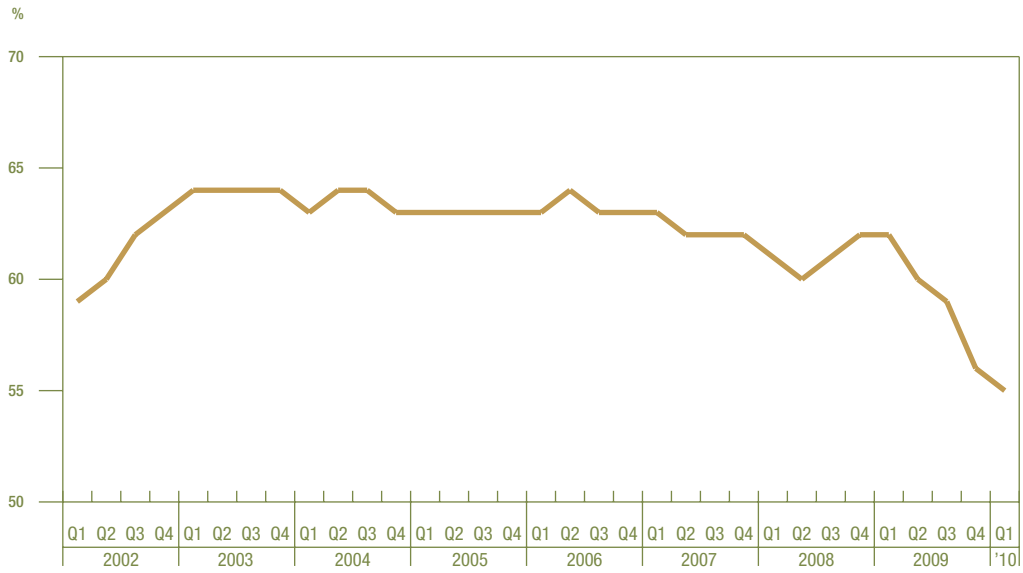
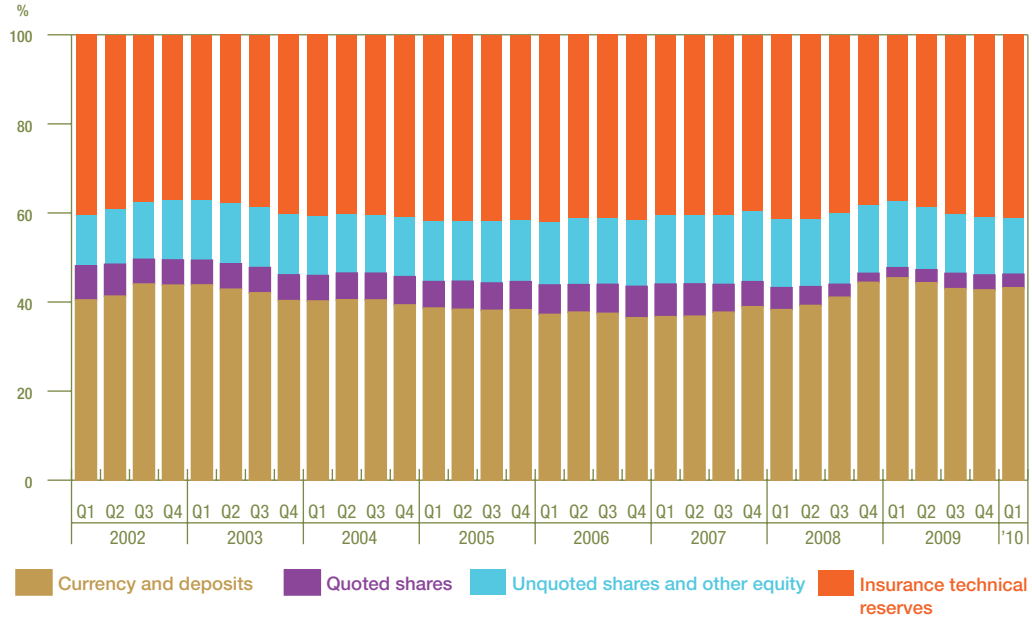


Chart 2b: Portfolio Composition of Household Financial Assets, Q1 2002 – Q1 2010 [6]



A shift in portfolio composition can be influenced directly through the acquisition or disposal of assets or indirectly through asset valuation changes. In an environment of volatile asset values, it is instructive to differentiate between effects driven by valuation changes; and households altering their investment behaviour due to altered risk aversion, or changing liquidity preferences in response to the more uncertain environment.

[6] The household sector also holds small quantities of 'Securities other than shares' and 'Other accounts receivable'.

Investment by households in housing and financial assets is depicted in Charts 3(a) and 3(b). Results show that housing asset investment started to slow from Q1 2007 onwards when house prices began to fall, as illustrated in Chart 3(a). This trend was accelerated from Q1 2008 on as unemployment increased and the economic downturn began to intensify. A downward trend in the level of investment in overall financial assets is also evident from Q3 2007 onwards, as households had less income at their disposal to invest.

Chart 3a: Transactions in Housing Assets and Financial Assets, Q2 2002 – Q1 2010

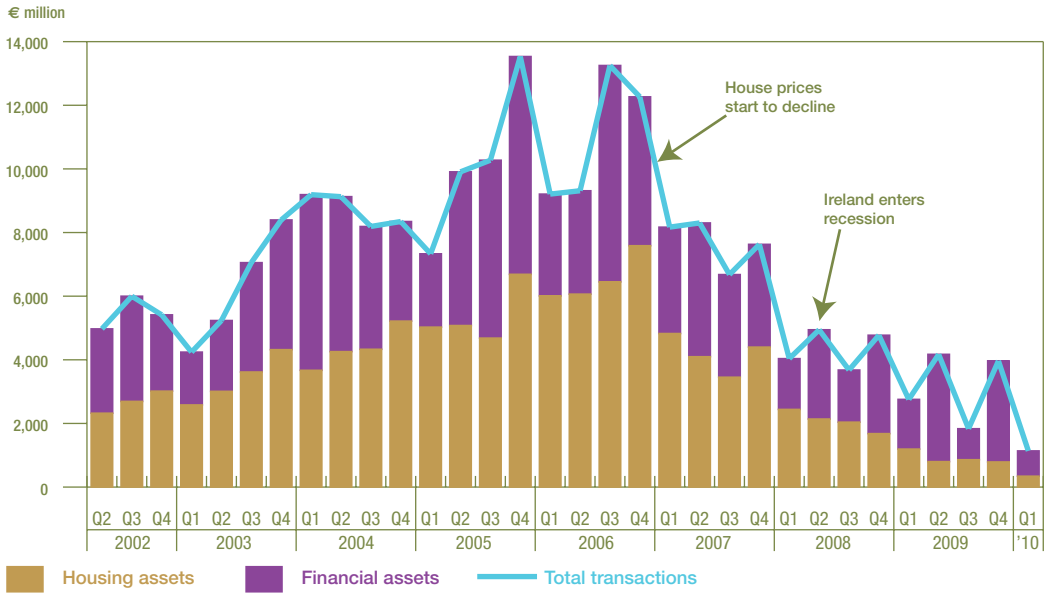
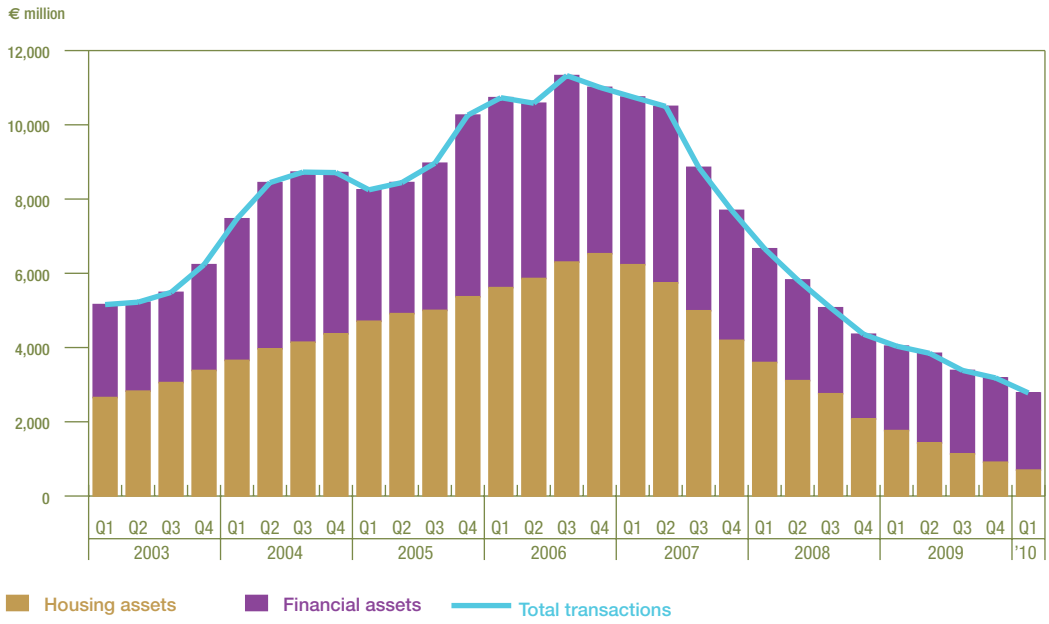


Chart 3b: Transactions in Housing Assets and Financial Assets (4-quarter moving average), Q1 2003 – Q1 2010[7]



A decomposition of households' investment in financial assets is presented in Chart 4. Investment in deposits formed by far the largest component of households' financial asset investments. This is in line with McQuinn and O'Donnell (2010) who found that 74 per cent of Irish households display little appetite for risk. Households' risk aversion is also evident by the small proportion of wealth invested in 'Quoted shares' even during the period of rapid economic growth. Investment in 'ITRs' continued from Q3 2008, albeit at a lower level, despite the significant losses made in the aftermath of the financial crisis, showing that despite the economic downturn, households continued to invest in life insurance and pension funds. This probably reflects a degree of inertia, as households continued payments into existing schemes, even while they were losing value. Households may also have invested more in these instruments to compensate for losses made from Q3 2007 onwards. It should also be noted that 'ITRs' are an extremely illiquid asset, from which households are generally unable to withdraw funds once invested until retirement.

[7] A four-quarter moving average is used to smooth seasonality effects.

Households also continued to invest in 'Unquoted shares and other equity' though at a much lower level from Q3 2008 onwards. This asset category includes investment in property abroad and, therefore, the fall off in investment is likely to be significantly influenced by the decline in non-resident property values. For example, euro area house prices fell by 3.1 per cent on an annual basis in the second half of 2009, following a decline of a similar magnitude in the first half of the year (ECB 2010a). In addition, commercial property markets in the euro area have been on a downward trend since 2007 (ECB 2010b). It should be noted however, that as *Quarterly Financial Accounts* data are not decomposed by age groups or income deciles, we cannot ascertain the extent to which shifts in portfolio composition were driven by specific cohorts.

Valuation changes to households' assets are illustrated in Chart 5. Falling house price values have been by far the biggest component of the decrease in households' portfolio of assets, as house prices declined 35 per cent from their peak in Q4 2006. However, falls in the value of 'ITRs' and to a lesser extent 'Quoted shares' also led to a very significant decrease in the

Chart 4: Net Transactions in Household Assets (4-quarter moving average), Q1 2003 – Q1 2010

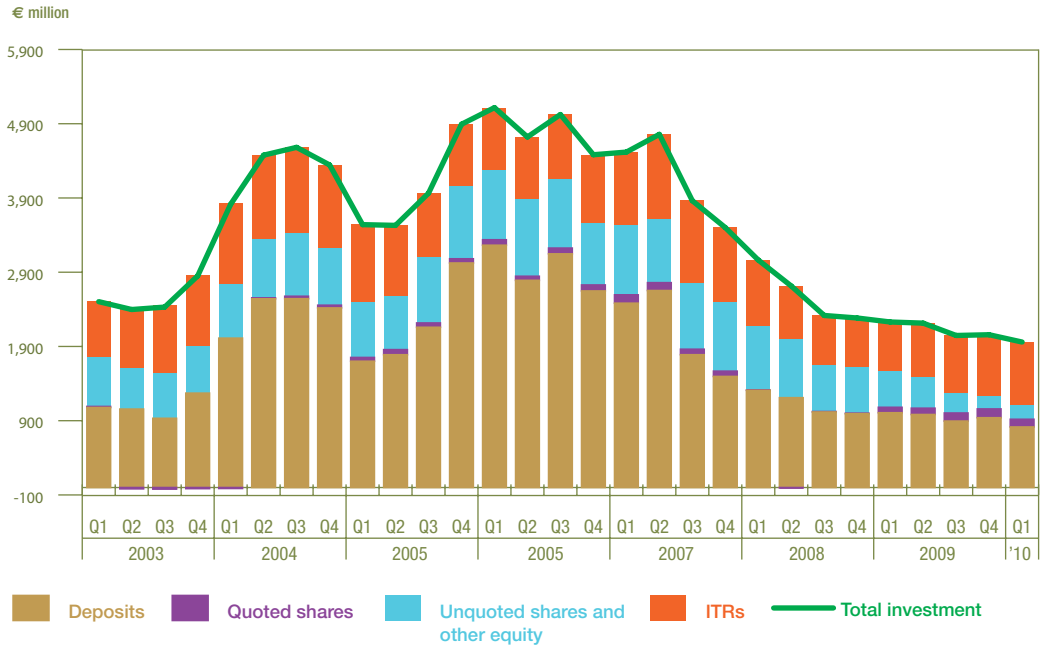
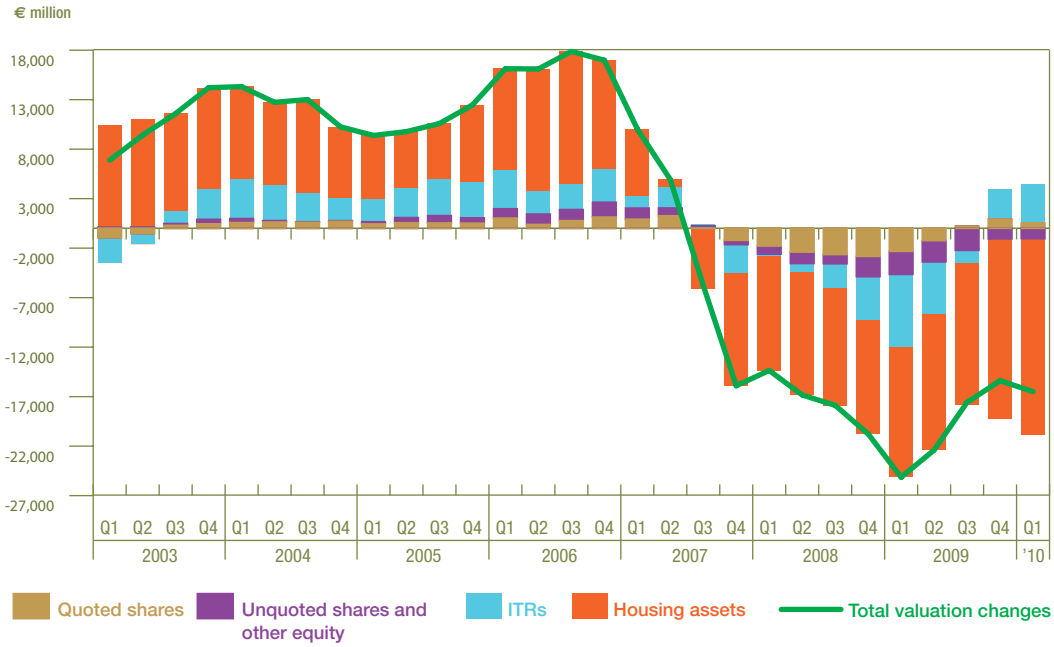


Chart 5: Valuation Changes in Household Assets (4-quarter moving average), Q1 2003 – Q1 2010



value of households' overall assets, as a result of stock market turbulence. The market capitalisation of the ISEQ Index fell 64 per cent between Q4 2007 and Q4 2008 (ISE 2009). In addition, worsening economic conditions and declines in the value of property held abroad led to considerable falls in the value of 'Unquoted shares and other equity' from Q4 2007 onwards.

The contribution of transactions in assets and valuation effects to changes in households' total assets is summarised in Chart 6. Results show that by far the biggest contributor to the shift in households' portfolio composition from Q3 2007 onwards, was not a reallocation of assets in response to the changing economic environment, but rather a substantial decline in asset values.

Chart 6: Contribution of Transactions in Assets and Valuation Changes to Changes in Total Assets (4-quarter moving average), Q1 2003 – Q1 2010

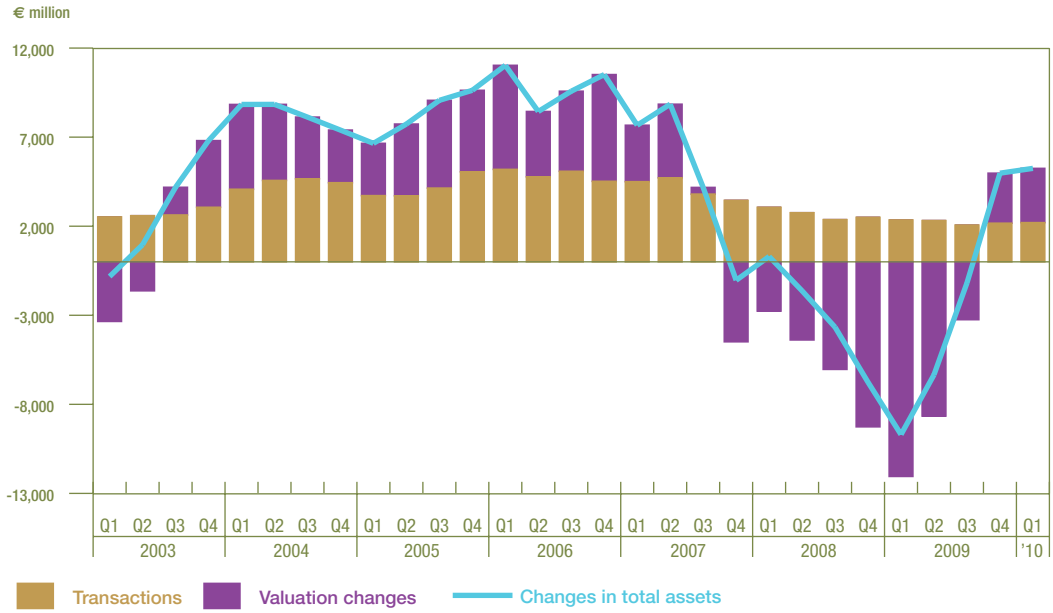
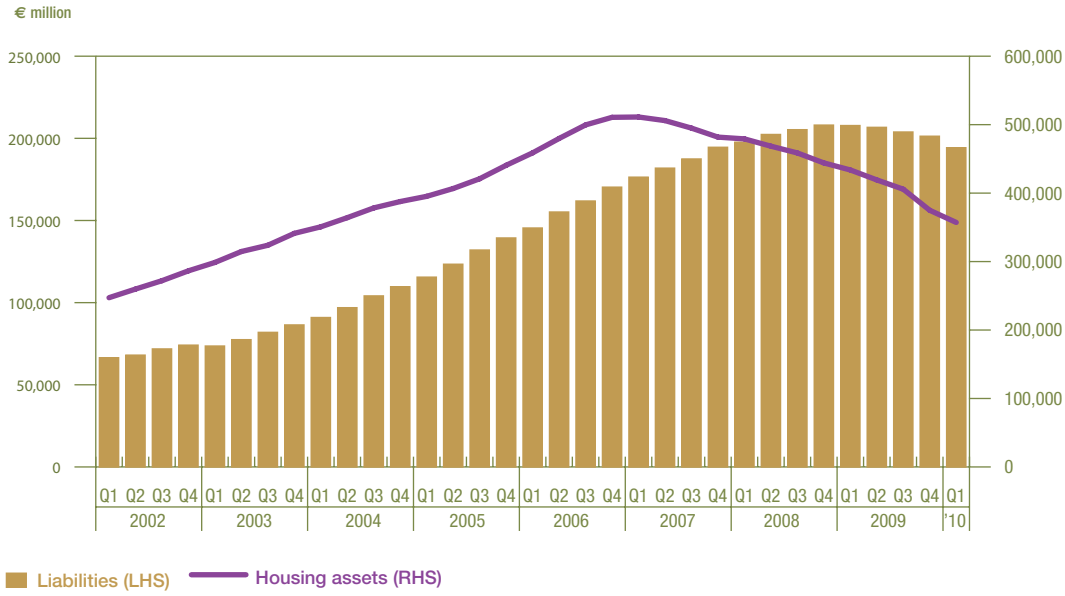


Chart 7: Trends in Total Household Liabilities, Q1 2002 – Q1 2010

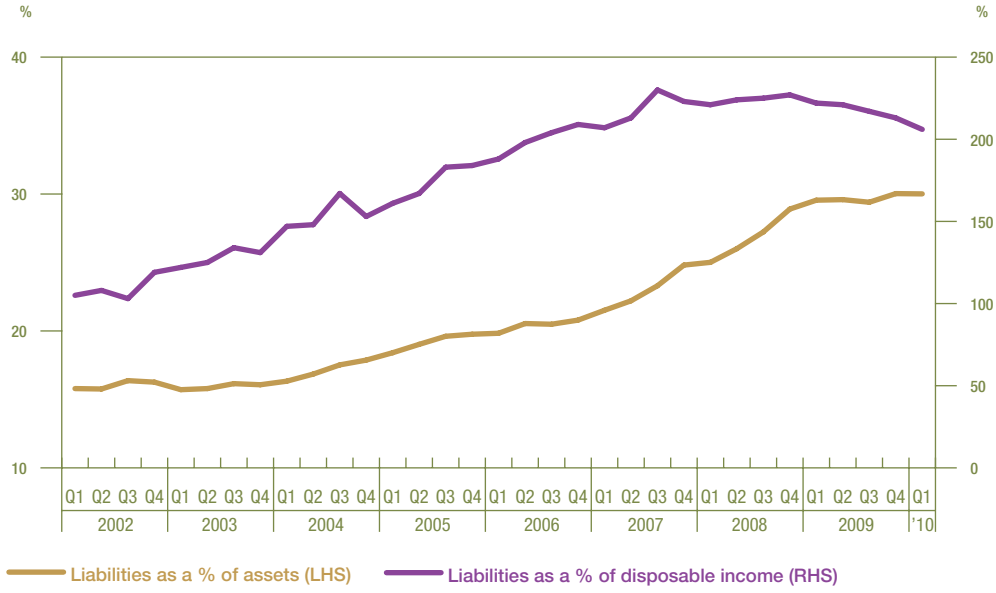


3. Household Liabilities

3.1 Indebtedness

Irish households' indebtedness surged in the years preceding the financial crisis, enabled by a period of unusually low interest rates and risk spreads. Total household liabilities, shown in Chart 7, peaked in Q4 2008 at €208 billion, representing a 213 per cent increase from Q1 2002. The chart shows that much of this increase in debt was used to finance house purchases. However, the value of housing assets peaked in Q4 2006; while debt continued to increase, albeit at a slower rate,

Chart 8: Household Leverage Ratios (4-quarter moving average), Q1 2002 – Q1 2010



for a further eight quarters. Duffy (2009) estimated that over 116,000 households were in negative equity at the end of 2009. This rapid accumulation of debt has raised questions about its sustainability, particularly in the context of a deteriorating economic climate.

As the financial crisis unfolded, banks tightened credit standards and net credit growth slowed. This resulted in a slowdown in the accumulation of debt to fund the purchase of housing assets. Chart 7 shows that liabilities have fallen by 7 per cent to €194 billion, between Q4 2008 and Q1 2010.

3.2 Leverage ratios

The rapid increase in household debt has been accompanied by an increase in household leverage which can be measured in a variety of ways. Chart 8 shows the ratio of total liabilities to disposable income[8] and the ratio of total liabilities to total assets (financial and non-financial) between Q1 2002 and Q1 2010.

Rising house prices and equity market indices masked the rise in household leverage to some extent, as the ratio of liabilities to assets did not increase or decrease as rapidly as the ratio of liabilities to disposable income. When leverage is measured using disposable income, we see a more dramatic increase in the ratio between Q4 2002 and Q4 2007, and the more significant impact of the turbulent macro-economic environment from late 2007. In Q1 2002 the ratio of liabilities to disposable income showed that households owed a little more than one euro for each euro of disposable income. This increased rapidly up to Q3 2007, when household debt levels were significantly more than twice their income levels (230 per cent). This leverage ratio then levelled off up to Q4 2008; after which it began to fall for every quarter up to Q1 2010 and now stands at just over 200 per cent.

A number of studies have shown that financial crises often take place after a rise in the ratio of credit to disposable income.[9] These studies also show, that both the build-up in indebtedness before the crises, and the subsequent reduction tended to be sizeable.

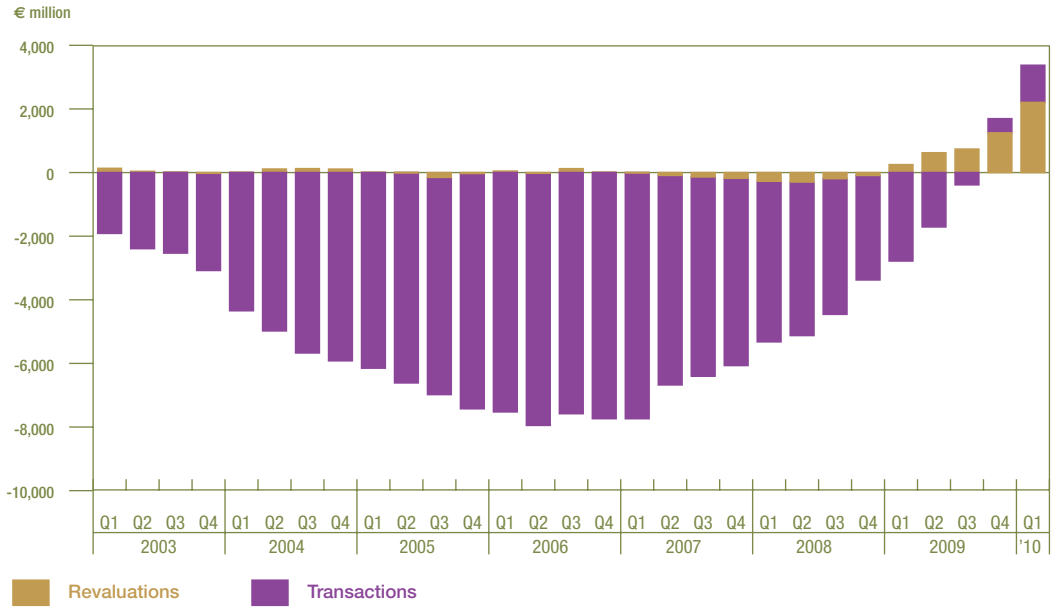
3.3 Deleveraging

While the growth of credit in the economy halted abruptly, evidence seems to suggest

[8] Annual disposable income data for 2003 to 2008 sourced from *Institutional Sector Accounts: non-financial* (CSO, 2009); disposable income projections for 2009 and 2010 sourced from *Quarterly Economic Commentary* (ESRI, 2010); quarterly data derived from internal Central Bank estimates.

[9] For example see Mian & Sufi (2009), Tang and Upper (2010) and Roxburgh *et al* (2010).

Chart 9: Quarter-on-Quarter Change in Household Liabilities (4-quarter moving average); Q1 2003 – Q1 2010



that households may now be entering a longer period of debt reduction (deleveraging). There are two primary channels within which debt levels can be reduced; paying off debt and/or defaulting/write-downs. Chart 9 shows the total quarter-on-quarter change in households' liabilities between Q1 2003 and Q1 2010. Up to Q1 2007 households were significantly increasing their liabilities. This rate of increase in liabilities slowed substantially between Q1 2007 and Q3 2009. In the most recent quarters, however, there are signs that households have commenced deleveraging. This can take place through the paying off of debts, shown as transactions, and through write-downs, shown as revaluations. This is most relevant from Q1 2009 onwards, where results show that debts are being reduced through both transactions and revaluations.

It is likely that in lower income households, who have little or no savings, deleveraging is most likely to occur through default, with very little impact on consumption but a potentially high cost to the banking system. Middle income households tend to have much lower default rates and instead deleverage by saving more and consuming less, a process that avoids credit losses but slows economic growth.

There are many other factors which could influence the speed and extent of deleveraging by households; including economic, policy, and behavioural factors. Usually debt reduction is a combination of these factors, which may vary over time. However, if history is a guide, we do know that deleveraging has followed nearly every major financial crisis in the post World War II period (Roxburgh, 2010). The increasing levels of loan delinquencies are a clear indication that the rise in indebtedness was not sustainable, and that further deleveraging can be expected. At the end of Q2 2010, 4.6 per cent of mortgage accounts were in arrears for more than 90 days. This compares to 4.1 per cent in Q1 2010 and 3.6 per cent in Q4 2009.[10]

4. Household Saving

The consequence of deleveraging is a reduction in household consumption. Consumption will remain sluggish until debt is reduced to a level that can comfortably be serviced out of current income, a process that

[10] Financial Regulator (2010). Residential Mortgage Arrears and Repossessions Statistics.

Box 1: What is household saving?

Households can accumulate financial and non-financial assets by not spending some of their income on consumption, or alternatively by borrowing:

Saving + Incurrance of Debt = Acquisition of financial assets + Acquisition of non-financial assets

Funds raised — Assets accumulated

Therefore, saving can then be expressed as follows:

Saving = Net acquisition of financial assets (net lending/borrowing) + Acquisition of non-financial assets (housing acqusition)

The household saving ratio is calculated by dividing saving by disposable income:

Saving ratio = Saving ÷ Disposable income

cannot proceed without an increase in the household savings rate. Berry *et al* (2009) explain that any adjustment in saving is likely to have important consequences for the economic outlook, given the importance of household spending within aggregate demand. Indeed any attempt to reduce consumption is likely to push down on output and hence household incomes. That could make it harder for households to increase their saving — an effect known as the *paradox of thrift*.

4.1 Determinants of household saving

Since saving implies an addition to households' net worth and dissaving implies a withdrawal from it, it follows that saving can be derived from the net flows into and out of household assets and liabilities over a given period.

Chart 10: Trends in Net Lending/Borrowing (4-quarter moving average), Q1 2003 – Q1 2010

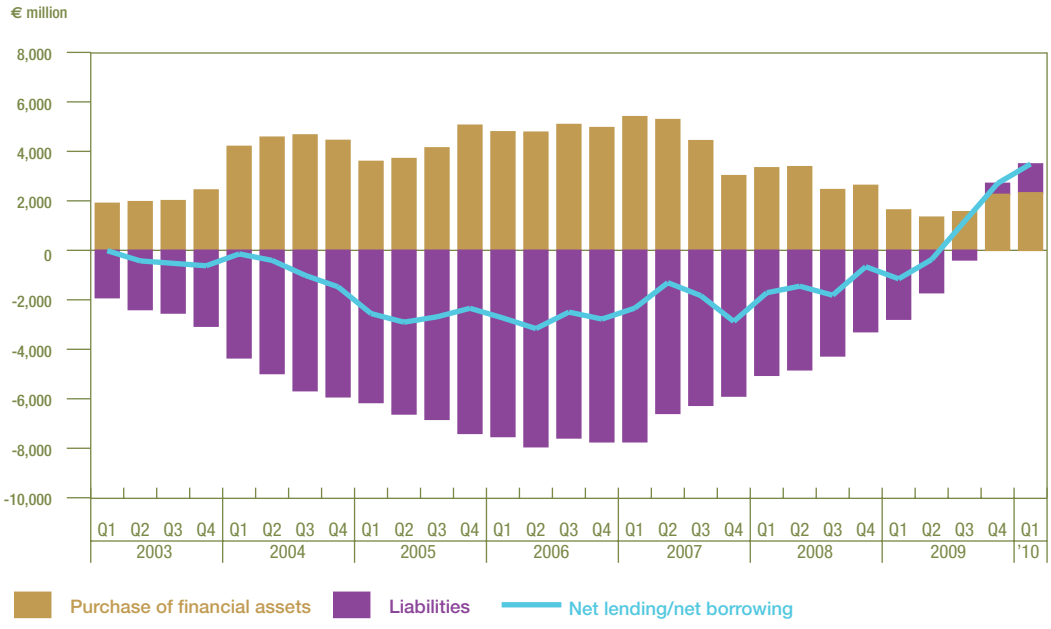


Chart 11: Trends in Household Saving (4-quarter moving average), Q1 2003 - Q1 2010

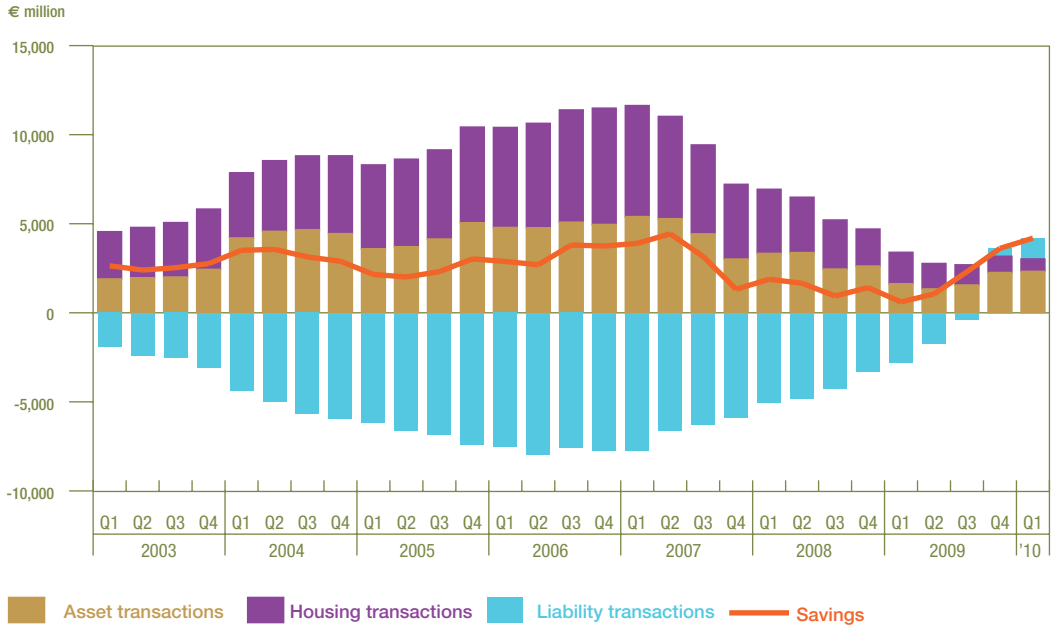
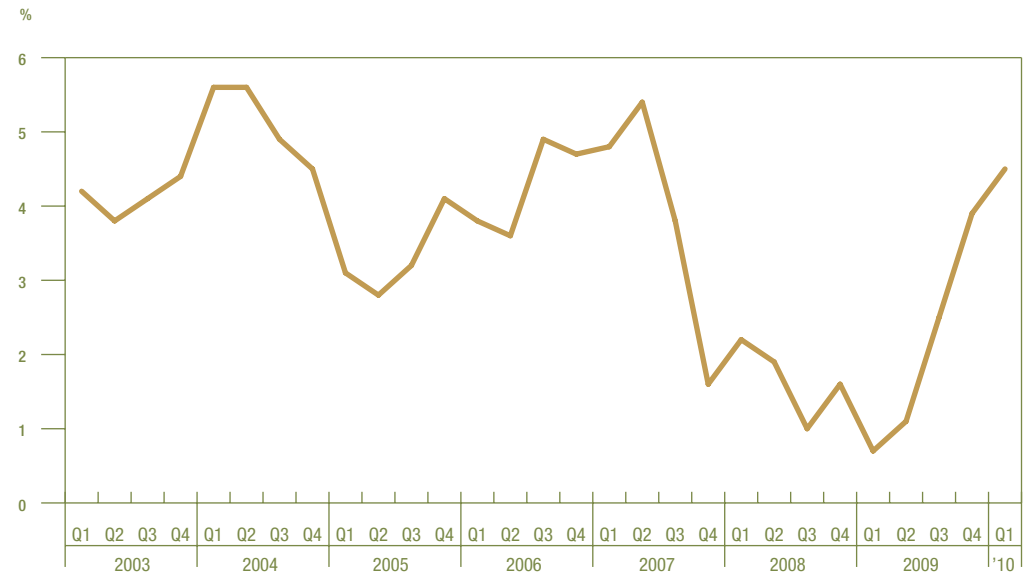


Chart 12: Household Saving Ratio (4-quarter moving average), Q1 2003 – Q1 2010



Therefore, as outlined in Box 1, saving is determined by the sum of net lending/borrowing and net housing acquisition. Chart 10 shows the trends in net lending/borrowing from Q1 2003 to Q1 2010. This trend is derived from transactions in financial assets less liabilities, which are also shown in the chart. Results show that up to Q1 2007, households were rapidly acquiring financial assets and incurring liabilities. Between Q2 2007 and Q3 2009 this accumulation slowed substantially. By Q4 2009, households began to increase their financial assets, but reduce their liabilities (Chart 9). Overall, these trends meant that households were net borrowers between Q1 2003 and Q2 2009. Since then, in the aftermath of the

economic slowdown; households have now become net lenders.

With the introduction of housing assets, household saving can be derived as shown in Chart 11. It is calculated as transactions in assets (financial and non-financial) less transactions in liabilities. The chart shows that the acquisition of housing assets had a major impact on household saving up to Q2 2009. Results show that rising debt levels in conjunction with even faster asset accumulation supported the saving level up to Q2 2007. The falling value of housing assets from Q1 2007 brought household saving to its lowest level by Q1 2009. Since then, the increase in saving has been driven by both deleveraging and an increase in the acquisition of financial assets.

4.2 Household saving ratio

The consumption and saving activity of households is summarised by the saving ratio. Chart 12 shows that the ratio increased from approximately 3 per cent in early 2005 to 5.5 per cent in Q2 2007. This corresponded with the increasing rate of housing acquisition. In the context of decreased levels of housing investment, the saving ratio fell dramatically and remained low until early 2009. The impact of the financial crisis and subsequent recession have also led to tighter credit conditions and greater job insecurity. Households have responded by increasing their saving in more recent quarters. In Q1 2010 the saving ratio reached just over 4.5 per cent of disposable income.

Increased levels of saving, and as a direct consequence decreased consumption, are key influences on the economic outlook; as household consumption accounts for about half of GDP. In the wake of the economic slowdown, there is a risk that the paying down of excess debt via increased savings could be a drag on consumption and bank lending in the future, with negative implications for the speed of economic recovery. As a result, a greater proportion of GDP growth will need to come from business investment, net exports and government spending (Aridas, 2010).

Conclusions

The recent publication of *Quarterly Financial Accounts: Q1 2002 — Q1 2010* by the Central Bank in July 2010 facilitates a comprehensive analysis of the impact of declining housing prices; the financial market turbulence and the economic recession on Irish households. Results show that in an environment of falling asset prices, household net worth has declined by 30 per cent since Q4 2006, reverting back to Q4 2003 levels. The changing economic environment has led to a considerable shift in households' portfolio composition. Housing assets as a proportion of total assets fell from 63 per cent to 55 per cent between Q4 2006 and Q1 2010, as house prices fell and investment in this asset class contracted. Furthermore, there has been a considerable shift in households' portfolio composition since Q1 2008. Holdings of deposits as a proportion of households' total balance sheet increased; while holdings of 'Quoted shares', 'Unquoted shares and other equity' and 'ITRs' all decreased, driven largely by a fall in their value.

Irish household indebtedness surged in the years preceding the financial crisis, as they invested heavily in housing assets. A number of studies have shown that financial crises often take place after a rise in the ratio of credit to disposable income. These studies also show that both the build-up in indebtedness before the crises and the subsequent reduction tended to be sizeable. *Quarterly Financial Accounts* data show that the process of deleveraging has commenced for Irish households; as debt is paid off and default rates increase. Households are likely to continue deleveraging until the debt burden can be serviced more comfortably from disposable income.

Trends in households' saving rate have also undergone considerable changes in the aftermath of the crisis. Households have increased savings since Q1 2009. This increase has been driven by deleveraging and an increase in the acquisition of financial assets. These trends have implications for the economic outlook; as an increased saving ratio can have a negative impact on economic growth.

Annex 1

Household Balance Sheet (€ million), Q1 2010

	Stocks	Transactions	Revaluations
Financial assets:			
Currency & Transferable Deposits	45,910	–532	—
Other Deposits	78,204	611	–383
Securities other than shares	502	–109	–18
Quoted shares	8,699	193	–1,248
Unquoted shares	36,222	267	–1,974
Insurance technical reserves	118,287	831	–1,675
Other accounts receivable	2,304	–36	–925
Total Financial Assets	**290,128**	**1,225**	**–6,223**
Financial liabilities:			
Short-term loans	8,401	–479	–453
Long-term loans	177,158	–1,896	–5,294
Other accounts payable	8,680	225	903
Total Liabilities	**194,239**	**–2,150**	**–4,844**

Net financial positions:	Net financial assets	Net lending/ borrowing	Revaluations of net financial assets
	95,889	3,376	–1,378

Housing assets:	Total stock of housing assets	Acquisition of housing assets	Revaluations of housing assets
	357,147	342	–18,073

Net positions:	Net Worth	Savings	Total Revaluations
	453,036	3,718	–19,451

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Central Bank Credibility and Income Velocity in a Monetary Union

Frank Browne and Robert Kelly*

Abstract

The income velocity of circulation has been subject to a trend decline in all the member states of the European Monetary Union since its inception. In this paper, we propose an explanation for this in terms of a measure of the ECB's inflation fighting credibility. This credibility gain variable, which is derived in this paper, is based on the ECB's performance in maintaining price stability relative to the respective member states' inflation experiences from the legacy monetary-inflation regimes of the past. Our empirical analysis reveals that this credibility gain variable has a highly significant and sizeable impact on income velocity in member states. On average across member states, a one per cent increase in credibility gain, according to our measure, leads to a decreace in income velocity of half a per cent. The model and results presented suggest that the ECB should, in formulating the second pillar of its monetary policy strategy, factor in its own price stability credibility. Our results also imply that, if inflation fighting credibility is lost temporarily, it is hugely important to re-establish it as soon as possible.

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1. Introduction

Money demand is probably one of the most actively researched areas of economics. The special role for money in the ECB's monetary policy strategy has prompted a flurry of papers in this area especially from the ECB itself. Although there is a good deal of differentiation among these papers, this is mostly in relation to econometric technique rather than novel theoretical approaches[1].

The objective of this article is to look at one aspect of money demand in a currency union with a central bank having, as in the case of the ECB, price stability as its primary statutory responsibility. Our examination starts from an observation of a salient fact of money behaviour in the euro area: since the start of EMU the income velocity of money has been trended downwards throughout almost the full time period of EMU in all of the founding eleven member states of the monetary union[2]. No generally accepted and plausible rationale seems to have been offered for this phenomenon. Some major countries outside of the euro area, for example, the US, do not exhibit the same systematic pattern, with US income velocity of money not subject to a trend and apparently evolving with the business cycle.

There is also a systematic difference in the behaviour of the income velocity of money across member states of the monetary union since the start of 1999. Member countries with consistently poor records on inflation before the start of monetary union have experienced a substantially larger reduction in income velocity since the start of monetary union. This has persisted up until recently. It is truly an extraordinary pattern and so salient that it is somewhat surprising that it does not appear to have been noticed before now.

We argue that this cross-country pattern of income velocity is systematically related, indeed driven by, the respective price level/inflation experiences of those member states *before* monetary union commenced relative to their respective expectations of price level evolution *after* the start of monetary union. This, in turn, depends on money holders' expectations of the ECB's performance in maintaining price stability. These expectations are assumed to evolve in real time as money holders learn from experience how credible the ECB is in delivering on its statutory objective of price stability. We propose a measure of central bank credibility gain with respect to price stability which we then relate to the evolution of income velocity.

[1] For example, Coenen & Vega (2001), Gerlach & Svensson (2003), Greiber & Lemke (2005), Carstensen (2006), Greiber & Setzer (2007), Boone & Van Den Noord (2008) and Bjornland & Leitemo (2008).
[2] We do not consider Luxembourg given its exceptional role in international financial markets.

Chart 1: Scatter Plot of Cumulative Changes in Monetary Credibility and Money Velocity (1999-2010)

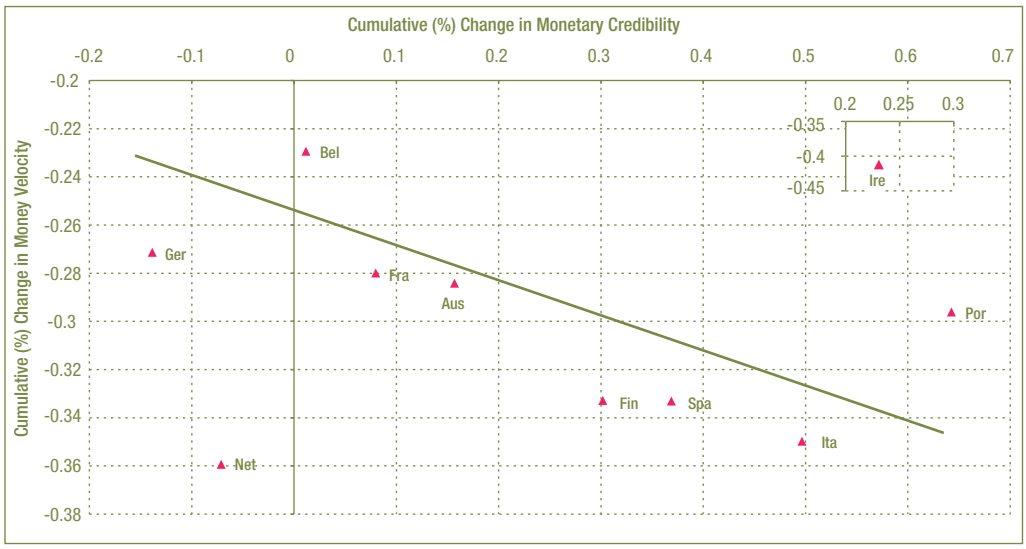
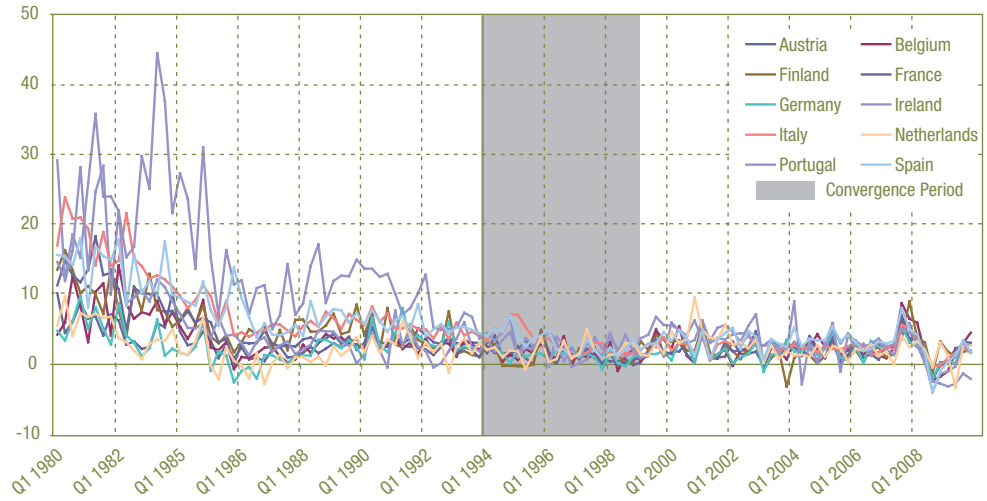


Chart 2: EMU Participants Inflation Rates (HICP)



The systematic pattern between these two variables across the member states of the monetary union is displayed in the scatter plot in Chart 1. The horizontal axis in the chart shows our measure of the cumulative percentage change in price stability credibility. The precise formula used to derive this variable is postponed until Section 2 of the paper where it is explained in detail. Briefly, it compares the legacy inflation regimes of member states with their inflation experiences in monetary union. This legacy inflation regime is taken to be best represented by the ten-year period from 1984 to 1994. We set the end-point of this regime at 1994, and not at the start of monetary union itself (1999), since some of the benign inflation experience in this five-year "interim period" (1994-1999) may be due to the efforts countries were making to qualify for monetary union (as documented in the various Convergence Reports prepared for application countries) and, therefore, in a sense, due to monetary union itself. Indeed, the inflation performance of member states during this interim period was remarkably good with both a lower level and lower volatility of inflation than even in monetary union itself (see Chart 2). The vertical axis (in Chart 1) shows the cumulative fall in the income velocity of circulation since the start of monetary union for all ten countries in our sample.

For those core countries that belonged to the narrow ERM bands and that were subject to Bundesbank monetary policy before the start of monetary union and, on foot of this, enjoyed price stability (i.e., Germany itself, France, Austria, the Netherlands and Belgium) there has been either no fall in velocity or at best only a very moderate downward trend since the start of monetary union. In the scatter plot, four of these five countries are located in the upper left hand corner of Chart 1. The countries towards the bottom right hand corner (i.e., Finland and Portugal) were the ones that experienced the steepest cumulative reductions in income velocity in monetary union and suffered the sharpest cumulative increase in inflation in the decade and a half before the commencement of the "interim period" leading up to the start of monetary union. Countries with intermediate experiences (i.e., Italy and Spain) lie in the middle as our theory suggests. To further illustrate this point, Chart 4 presents non-parametric distributions fitted to core (German) and periphery (Italian) inflation rates over two sample periods: (i) a pre-EMU regime from 1980-1990 and (ii) a post EMU-regime 1999-2010. There are only modest gains to German inflation rates after EMU, with small reductions in mean and variance. Italian inflation underwent a much greater transformation, with the mean decreasing by over 4 percentage points and considerably smaller variance. In fact, in the post-EMU era, Italian inflation rates are a tighter fit around their mean than German rates.

Chart 3: HICP Convergence (1980-2010)

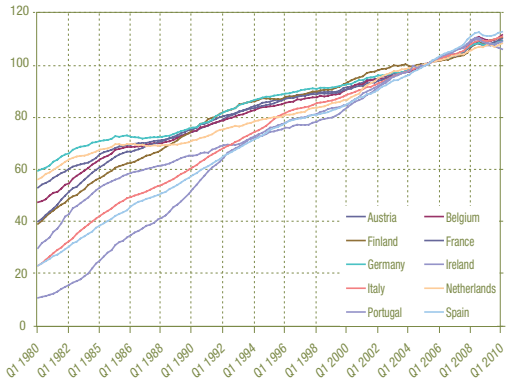
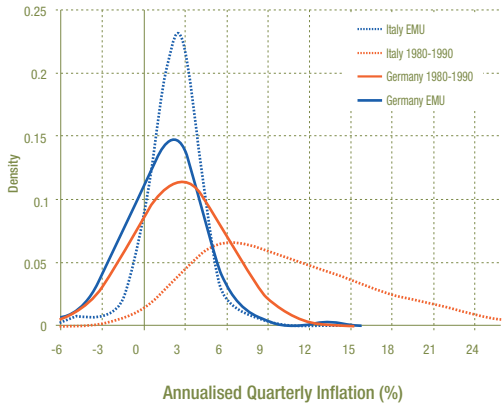


Chart 4: Fitted Distributions to German and Italian Inflation Pre and Post EMU



Notes (Chart 4): A Karnel smoothing technique is used to estimate nonparametric density functions of inflation rates over two sample periods; (i) Pre EMU (1980-1990) and (ii) Post EMU (1999-2010)

For most countries adopting the euro, monetary union constituted a double regime shift. The first was the adoption of the single currency, albeit only as a scriptural currency between January 1999 and January 2001 when the new euro notes and coin were introduced. The second was coming under a new monetary regime governed by a central bank (the ECB) which was statutorily committed to price stability. For the first group of countries noted above, this latter was not such a major regime shift since this was more or less exactly the kind of regime they had already enjoyed. But for the latter group it did, indeed, amount to a major regime shift given their higher inflation records before the start of our ''interim period'' leading up to monetary union. From the point of view of the argument here, it is the monetary policy regime shift that is relevant.

The paper is essentially about past price level movements, taken from high inflation regimes, relative to the experience of price level movements in EMU under the new statutory framework directed at price stability governing the ECB's monetary policy. Money holders see the tax on money as being much lower than in the past under pre-EMU monetary policy regimes. With the fall in the inflation tax, people are willing to hold more money balances. It is therefore about comparing the actual experience of inflation in the past with the unfolding inflation experience in EMU and the effect of this on money velocity; it is mostly a backward-looking variable. It is not therefore about inflation expectations, a forward-looking variable. That is why an inflation expectations variable has been included as a separate argument in the demand for money (velocity specification) used below which yields sensible theoretical results.

The approach is new in that it is something that money demand functions have not looked at in the past. In a sense, EMU provides the ideal context within which to look at this issue since a clear break in the monetary regime can be identified for a group of countries that came into EMU from endemically high inflation regimes. There is also a control group of countries which came from price stability regimes and for whom there was little or no change in monetary regime on entering monetary union. The increase in the demand for money (fall in velocity) was much greater for the former than the latter as shown in our scatter plot above.

This article proceeds as follows: Section 3 proposes an explanation for the systematic country-specific trend behaviour of income velocity since the start of monetary union and the role of price stability credibility in this (our theory); Section 4 documents informal graphical evidence in support of the theory. Section 5 reports on the supporting

econometric results of the relationship between central bank credibility and income velocity using a co-integration framework; Section 6 discusses the one exception to the pattern uncovered, Ireland (see Chart 1), and tries to explain what might account for this. There are no references in the economic literature which deal with the type of issue being discussed here. There is only one of which the authors are aware and even this is only tangentially relevant. The next section of the paper discusses it briefly. Section 7 looks at some potential policy issues in a preliminary way.

2. Money Demand (Velocity) and Monetary Union

Honohan (1984) has argued that the break-up of a monetary union increases the demand for money. The logic behind this argument suggests that the corollary should also hold: the creation of a monetary union should lead to a fall in the aggregate demand for money.

In March 1979, the long-standing currency union between the Irish pound and sterling was discontinued. Transactions between the two currencies became costly. Over the following several quarters there was a substantial increase in non-bank holdings of Irish currency, which could not be explained by statistical models which had worked well up to then. In this context, it seems worthwhile to note that a standard model of money demand predicts a discrete jump in equilibrium money demand as a result of such a regime shift.

Honohan's rationale for why an increase (and decrease, presumably, although he does not deal with this case) would result from a break-up (creation) of a monetary union arises exclusively from transactions cost considerations in the foreign-exchange market. For some combination of endowments of domestic and foreign goods, the absence of foreign-exchange transactions costs under a monetary union would lead to the transfer of funds back and forth across international frontiers in successive periods. With the introduction of foreign-exchange transactions costs, there is an incentive to hold balances in both currencies to economise on these transactions costs. The economies in money holdings coming from the single currency would mostly affect the corporate sector rather than the household sector. In the lead up to monetary union proper (i.e., so-called Stage Three of EMU), they are likely to have held transactions balances in many, if not all, of the member countries even if they had a presence in only one or at best a few member countries. They would be even more likely to have held transactions balances in the denominations of all the member countries if they had a presence in these same countries. Therefore, the sums involved are potentially quite substantial and, accordingly, the savings in transactions balances to be made all the more substantial.

Yet another factor that would serve to reduce the demand for money is not only the improvement in both retail and wholesale payments systems but the introduction of new payments systems. It has been mentioned as far back as July 1998 in the ECB's ''TARGET brochure'' that: ''With TARGET, international corporate cash management will be able to make substantial efficiency gains. The real-time execution of TARGET payments will reduce the float and make it possible to optimise cash management in euro. Participants' corporate customers might therefore be particularly interested in having their financial payments executed via TARGET''. In other words, by using one currency instead of several, the corporate sector in particular should have enjoyed considerable economies in the holdings of transactions' balances related to cross-border trade. In addition, it also says that: ''The high speed with which payments in TARGET will be processed will facilitate and improve cash management. Moreover, this will enable participants to increase their turnover of funds''. The speed with which payments are processed with the increasingly available electronic payments systems at the retail level (e.g., prepaid and debit cards) may also have encouraged considerable economies in the holdings of not only bank deposits but also notes and coin.

All of these effects stem from monetary union and payment innovation both at the wholesale and retail levels, rather than from a new

monetary regime devoted to price stability which coincided with the start of monetary union. Since our focus is on the latter rather than the former we do not explore these interesting theories further here. They do, however, all point to further economies in the holding of money balances. If the effect of these economies in money holdings were present in the data they would have placed upward pressure on income velocity. This implies that the actual observed reduction in velocity might even understate the downward effect on income velocity coming from the growing price stability credibility of the ECB — the phenomenon to which we are bringing attention in this paper.

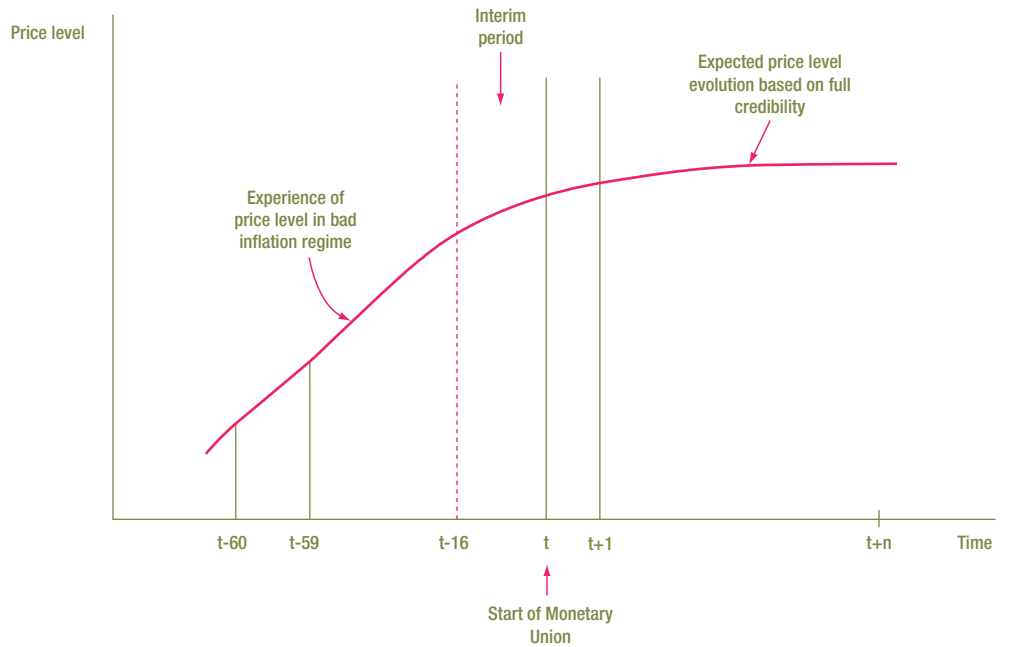
3. Price Stability and Income Velocity — the Mechanism

Chart 1 shows the effect of price stability credibility on money velocity across the member states of the Eurosystem. Credibility is taken as an average of the respective countries' experiences of price stability *after* the start of monetary union and cumulative price level increases for fifteen years *before* the start of what we are calling the "interim period" leading up to the commencement of monetary union in January 1999. This average cross-section evidence supports our proposition that credibility for price stability increases the demand for money relative to the demand that would have been justified by purely transactions needs, as proxied by nominal income, especially in cases where this credibility was previously lacking.

So much for the cross-country evidence! But how does this effect manifest itself in an individual-country time-series context? We attempt to address this using Figure 1. This displays a highly stylised version of the mechanism which we think is behind the systematic behaviour of income velocity since the start of monetary union for a representative individual member state.

Inflation is a tax on money holdings; therefore lower inflation increases holdings of money. A sustained reduction in inflation that is credible should have the effect of reducing the income velocity of circulation, i.e., the ratio of nominal income to the money stock. A measure of that credibility should therefore be correlated with income velocity.

Figure 1: Price Level before and after the Start of Monetary Union: A Stylised Representation



To examine this, we develop a variable to capture price stability credibility. It is measured by comparing the inflation experience in EMU with the legacy inflation regimes of the respective member countries. The appropriate time span needed to reflect the pre-EMU legacy monetary and inflation regime has to be selected first. This is chosen as starting ten years prior to the start of the ''interim period''. What is relevant here is not individual episodes of short-lived inflation but rather what we are calling inflation regimes. These are monetary regimes or arrangements that generate persistent patterns of inflation over lengthy periods of time, such as the ten year period (1984–1994) on which we have chosen to focus. For the ten member states these regimes vary from price stability to high, variable and persistent inflation.

Although the ECB was, and of course still is, statutorily committed to price stability, there was no guarantee at the start of monetary union that it would always succeed in achieving it successfully in an entirely new and unprecedented setting for monetary policy. Starting from the inception of monetary union, the legacy inflation experience from the old regime is summarised by the ratio of the price level at the start of monetary union relative to what it was in the past. We choose to go back 15 years, or 60 quarters, or ten years before the start of the ''interim period'', to fully capture this past experience. This means starting in 1984.

The variable used to capture credibility is the ratio of the price level at any point in time in monetary union relative to what it was 60 quarters previously, i.e., the cumulative percentage increase in the price level. Therefore, the monetary credibility variable, CRED, is given as,

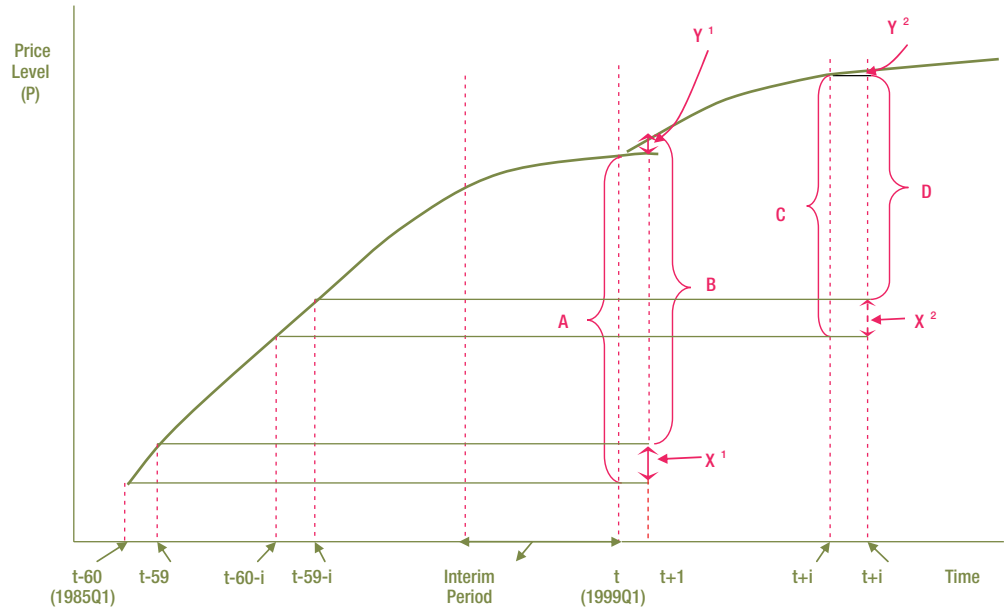
$$\mathrm{CRED} = \frac{P_{t+i}}{P_{t+i-60}} * 100$$

This assumes that money holders have fixed memories of 15 years (60 quarters) and, as they live through monetary union, this memory horizon remains fixed. For a central bank that is perceived as credible in its declared objective of price stability, this variable would fall systematically since the start of the new monetary regime which was also the start of monetary union (this is clear from Figure 1). However, it would only decline for those countries which previously suffered high inflation regimes. This decline would be accompanied by a similar decline in income velocity arising from the belief that the inflation tax on money holdings had been finally eliminated. And, the bigger the credible and sustainable fall in inflation the greater the increase in the demand for money and the bigger the knock-on fall in income velocity. As we have seen, this pattern is reflected in Chart 1.

CRED is therefore the price stability credibility gain in moving between two different monetary regimes. So, the credibility gain for Italy is much greater than the credibility gain for Germany. We take the realised inflation rate as the indicator of whether the ECB is delivering on its price stability objective. This, relative to the inflation in the old pre-EMU (indeed, pre-''interim period'') regime, is an indicator of the gain in price stability credibility.

In Figure 2, A represents the level of credibility at the start of monetary union. Just one period into monetary union, the level of credibility is B, a gain relative to A (i.e., $P_{t+1}/P_{t-59}*100$ falls relative to $P_t/P_{t-60}*100$). This gain in credibility (A—B) is equal to (X^1—Y^1) where X^1 is the price level increase in the old regime and Y^1 the price level increase in monetary union, where the difference in time interval is the constant memory horizon of money holders. So the gain in credibility is the difference in the inflation performance in the two monetary regimes. Progressing through monetary union from A to B to C to D indicates a growing level of ECB inflation fighting credibility. As depicted in Figure 2, the increase in the price level (Y^1, Y^2) gets smaller and smaller relative to the increase in the price level in the old inflation regime (i.e., X^1, X^2). It is therefore clear from Figure 2 that what we are comparing, in effect, is the slope of the path of the price level in monetary union with the slope of the path of the price level before the ''interim period'' before monetary union at a 15-year (60-quarter) memory horizon displacement. If the ratio of these two slopes falls throughout the period of monetary union then the ECB will have gained credibility consistently.

Figure 2: Case of Growing ECB Credibility



The expectation on adopting the euro was that the inflation regime for the countries coming from high inflation regimes was about to change radically. However, money holders in these countries would only find out if this was so with the passage of time. They would only find out, in effect, from the performance of the ECB in delivering on its price stability pledge. They were therefore subject to a learning process. Our theory suggests that, as credibility was strengthened over time, it would be mirrored in the gradual but systematic fall in the variable P_{t+i}/P_{t-i-60}. And, accordingly, a belief that tax without representation would finally have come to an end, led to a gradual and equally systematic fall in income velocity. This stems from an increased money demand relative to the need for money for transactions purposes as proxied by nominal income, in other words, a fall in the income velocity of money.

If both monetary union and the ECB's price stability objective had been fully and unequivocally credible at the start of monetary union then there would have been a sharp steep reduction in income velocity at that time. However, it would not be reasonable to expect this to have happened. The ECB was operating monetary policy in an unprecedented pan-European federal institutional arrangement, in a new financial setting and for a group of countries for which the one cap was unlikely to fit all. Gaining, and maintaining, a reputation for price stability would not have been inevitable. Money holders would only learn about ECB credibility by way of its performance in hitting its declared price stability target. We would therefore expect our credibility variable and income velocity to both move in tandem as the ECB's reputation as an inflation fighter was confirmed over time.

For those countries adopting the euro in January 1999 but coming from a monetary regime which was already one of price stability, or close to it, our theory would point to two patterns of behaviour. First, the P_{t+i}/P_{t-i-60} would be close to a straight line both before the start of monetary union and following the start of monetary union, and secondly, income velocity would similarly follow the pattern of a straight line but not necessarily the same straight line as that for the credibility variable.

4. Informal Graphical Evidence

The national charts all (see Appendix) display the downward trend in the price stability

credibility measure (i.e., representing gains in ECB credibility). In virtually all cases this is accompanied by a trend reduction in the income velocity of circulation. In most cases the two cumulative changes from the start of monetary union up to, and including 2010Q2, are not dissimilar. The cumulative percentage fall in income velocity and credibility variable (i.e., improvement in credibility) between the start of monetary union and 2009Q4 were 27 and 32 per cent, respectively.

As expected, the smallest reductions are for the four core countries in the sample. The biggest reductions in both the credibility variable and the velocity variable have been for the countries with the worst inflation records before the start of the ''interim period'' leading up to the start of monetary union.

This is quite an extraordinary result since one variable that is taken predominantly from a data sample up to fifteen years before the commencement of monetary union is highly correlated with another variable taken exclusively from monetary union itself.

The general commonality of trends is impressive. The next step in this exercise involves examining the role of our price stability credibility variable in an otherwise fairly standard demand for money function which, for the purposes of the analysis and comparison with the graphical analysis, is converted to a velocity function.

5. Econometric Evidence

As noted already, despite almost full financial market integration in the euro area, banking assets and liabilities still remain stubbornly national — one of the strong stylised facts to emerge from the ECB's *Financial Integration in Europe April 2010* report. This means that the money stock reported for any particular country of the union is used almost exclusively by residents of that country. Although the money stock in any one country of the union is perfectly fungible with that of any other country, it is nevertheless possible to explain the developments in any country's money stock by conditioning variables relating just to that country. So, despite a single currency and full fungibility of euro-denominated money across the whole of the euro area, it still makes sense to talk of member states' national demand for euro-denominated money.

Since the anti-inflation credibility effects vary across the member states of the monetary union, there are important country-specific influences on money demand in the EMU. A disaggregated approach to money demand that takes account of these should, when aggregated, provide a better account of money stock behaviour at the aggregate monetary union level than a money demand function estimated for the whole of the monetary union area. Therefore, we propose modelling money velocity as,

$$\frac{Y}{M3} = f(CRED, (r^L - r^S), INF)$$

where Y is nominal income, M3 is the contribution of the representative euro area member state M3 money stock, CRED is the inverse of the price stability credibility measure described in Section 2, $r^L - r^S$ is the net opportunity cost variable capturing the slope of the yield curve and INF is the expected one period ahead inflation rate.

This model of money velocity dynamics is estimated in a panel cointegration framework. Non-stationarity is tested using Levin & Lin (1992) methodology finding unit roots in money velocity and in the credibility term but not in the interest-rate differentials or expected inflation terms. It is notable, therefore, that the long-term downward trend in velocity as shown in Chart 1 for individual member states is determined exclusively by the trend improvement in ECB credibility.

It follows, therefore, that interest rates and inflation expectations only explain the adjustment towards this long-run equilibrium and not the long-run equilibrium itself. The resulting semi-log linear equations to be estimated are accordingly:

(1)

$$\frac{Y_{i,t}}{M3_{i,t}} = \alpha_0 + \alpha_1 CRED_{i,t} + e_t$$

(2)

$$\Delta \frac{Y_{i,t}}{M3_{i,t}} = \beta_0 + \sum_{j=1}^{n} \varphi_j \Delta \frac{Y_{i,t-j}}{M3_{i,t-j}} + \sum_{j=1}^{n} \phi_j \Delta CRED_{i,t-j} + \gamma INT_{i,t} + \lambda INF_{i,t} + \varsigma \hat{e}_{t-1} + \varepsilon_t$$

where Y_i is the log of nominal GDP in country i, $M3_i$ is the contribution of county i to euro area aggregate M3. $CRED_i$ is the credibility of the ECB's monetary policy based on country i's HICP as outlined in Section 2 above. INT_i is the difference between country i's 5-year government bond yield and the 3-month EURIBOR rate. INF_i is the expected inflation in the next period as proxied by the one-period-ahead HICP in county i. All data are quarterly observations over the period 1999Q1 to 2009Q4.

A panel cointegration test approach is used to detect the cointegration properties of the variables. Allowing for a constant, there is strong evidence for exactly one cointegrating vector in the (Y/M3, CRED) system, consistent with a long-run relationship between these variables[3].

In terms of estimating the long-run relationship between the variables, we follow the Pedroni (2000) approach, adopting a fully modified OLS (FM-OLS) framework where the coefficient on credibility is estimated for each individual country to provide the group estimate presented in Table 1[4]. Consistent with graphical evidence above, an increase in credibility increases the velocity of money. To be more precise, a reduction in the CRED variable (which is an increase in credibility) leads to an increase in the demand for money, an increase in M3 as supply responds, and a reduction in income velocity (Y/M3). Credibility has a fairly sizable effect on income velocity with a 1 per cent increase in credibility leading to a decrease in money velocity by 0.51 per cent. The cost of holding money is reduced leading to a situation in which the pace of money growth exceeds that of income.

In terms of short-run dynamics, the long-run relationship is set equal to 0.51 for all countries based on the FM-OLS group estimate. The model is estimated allowing for fixed effects, with all of the intercepts showing a significant negative value. However, Burggeman (2000) concludes that no direct implication can be taken as it captures both the long- and short-run constant term. However, one could interpret the negative sign as an increase in the unconditional growth of money velocity during the sample period.

The two short-run explanatory variables (INT, INF) are both significantly positive. This is consistent with the traditional theory of money demand. Higher long-run interest rates relative to short rates increase the opportunity cost of holding money now which impacts positively on velocity. Inflation is also a cost on holding money. In both cases, holding of money relative to output will fall, resulting in an increase in money velocity.

Estimates show a negative coefficient on the error correction term, ς, which is consistent with error correction theory. Any deviations from the long-run equilibrium are corrected by ς in each time period through the short-term dynamics discussed above. Although negative, ς is small indicating a slow speed of adjustment towards the long-run equilibrium. One reason often given for slow adjustment is the small cost of being out of equilibrium or the high cost of adjusting the money holding to equilibrium. Also, real side shocks such as oil-price hikes are often said to be responsible for the long term persistence of disequilibrium.

6. Accounting for the Exception: Ireland

There is only one outlier from the sample of the ten member states included in the study. This is Ireland. For Ireland, there was almost no change in the credibility measure since the

[3] The Kao (1999) & Pedroni (1999, 2004) panel cointegrating tests using the underlying Engle-Granger methodology are conducted and a relationship of rank 1 is found at the 95 per cent confidence level. A comprehensive outline of results is available upon request.

[4] Only group estimates are reported for brevity, with individual coutry estimates available upon request.

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Table 1: Error Correction Model Estimates

Long Run

Variable	Coefficient	T-Statistic
CRED	0.51*	19.832

Short Run Dynamics

Variable	Coefficient	T-Statistic
Constant	–0.011*	–3.144
$\Delta Y/M3_{t-1}$	0.102*	1.983
$\Delta Y/M3_{t-2}$	0.055	1.056
$\Delta Y/M3_{t-3}$	0.111*	2.089
$\Delta Y/M3_{t-4}$	0.060	1.118
$\Delta CRED_{t-1}$	0.022	0.510
$\Delta CRED_{t-2}$	0.011	0.255
$\Delta CRED_{t-3}$	–0.042	–0.997
$\Delta CRED_{t-4}$	–0.043	–0.997
INT	0.003*	3.292
INF	0.002*	3.019
ECT	–0.016**	–1.662

Notes: The constant in the ECM is the grouped estimate from the fixed affects and the appropriate number of lags (in this case 4) is selected according to AIC. * and ** denotes different from zero at 0.05 and 0.10 significance levels, respectively.

start of EMU and only a very slight improvement since 2003Q1. It started out at a value of 0.3 and ended up at virtually the same value, having increased slightly during the 10-year period before converging back to its original value at the start monetary union.

The factors contributing to regional inflation differentials in monetary union (such as the Balassa-Samuelson effect, price-level and standard-of-living forces of convergence as well as differences in cyclical positions) seem to have been especially potent in the Irish case. Very rapid capital and money-market convergence following financial market liberalisation and the advent of monetary union along with the much more sluggish, but none the less ineluctable, convergence of income and price levels threw up a very powerful dynamic and helped sustain a boom especially in the non-traded sector of the economy.

The example of Ireland in the 1990s and into the new millennium suggests that in such an environment, the real cost of debt capital may fail to respond to domestic economic fundamentals. This would have the effect of suppressing a natural self-correcting market mechanism. This was at least partly responsible for the boom in the non-traded sector of the economy, especially in the real estate and construction industries. This resulted in the price level in Ireland converging on and then overshooting that in the core countries of the monetary union.

Honohan and Lane (2003) have also brought attention to this effect. In flagging the negative correlation between pre- and post-EMU real short-term interest rates, they note that the fall in real interest rates in those EMU countries with higher-than-average inflation is a potentially destabilising factor, since it has the effect of placing even further upward pressure on inflation in those EMU countries with already high inflation, thereby militating against inflation convergence.

The failure of the credibility variable to perform similarly to that in the other member states is therefore, somewhat ironically, partly attributable to monetary union itself which had the effect of hampering the self-correcting market mechanism which would otherwise have been present. This released a dynamic that drove the Irish price level above that of the core countries and by a substantial margin. This is the reason why we think that the price stability credibility variable does not seem to work in the Irish case. Other member states in our sample did not have their price stability credibility variable distorted by powerful short-run dynamics in the same way or to the same extent.

7. Concluding Remarks

The model and results presented here suggest that the ECB should, in formulating the second pillar of its monetary policy strategy, factor in its own price stability credibility. More rapid

money growth than would be forecast on the basis of a conventional demand for money function should not necessarily feed into a more restrictive monetary policy stance if attributable to a gain in its own inflation fighting credibility. This additional money growth would not be inflationary but rather the result of the ECB reinforcing its reputation as an inflation fighter. The corollary is also valid. Slower money growth than would be predicted by standard money demand models should not serve as an input into a more relaxed monetary policy stance if this slower money growth can be ascribed to a loss of price stability credibility. Our graphical and econometric evidence suggest this credibility/reputational effect is fairly substantial. This would suggest, in turn, that if it is not taken into account in the formulation of monetary policy, then there is a significant potential for mistakes to be made in the stance of monetary policy.

The ECB would have to be aware that its own growing price stability credibility would have this systematic effect on money demand and velocity and that it should allow for this effect in the second pillar of its monetary policy strategy in formulating its monetary policy stance.

According to our model, a gain in price stability reputation is self-reinforcing. It increases the asset demand for money and, for a given supply, reduces inflationary pressures and, other things being equal, actual inflation. This disinflation further enhances a central bank's credibility. Unfortunately, the corollary is also true. Our model and results point to the danger that any short-run loss of credibility by a central bank with respect to its main statutory objective of price stability can be self-reinforcing. An upward shift in the price level relative to what had been expected drives up our credibility indicator and points to a loss of some reputation by the ECB as an inflation fighter. The higher tax on nominal money balances reduces the demand for money and, relative to a given supply, places upward pressure on inflation which is ultimately realised in actual inflation.

It should be noted that this reduction in the demand for money does not, *per se*, lead to a reduction in the stock of nominal money balances outstanding, unless in the case where the counterparty is a non-resident of the euro area. However, the collective attempt of money holders to offload money balances, on account of the impending implicit tax, puts upward pressure on expenditures and, depending on the cyclical position of the economy, on inflation. Previous money hoarding becomes dishoarding with a wall of money spilling over into household and corporate expenditures and putting upward pressure on inflation. The attendant loss of credibility tends to prompt more dishoarding and cause even greater inflation and loss of credibility.

This could therefore be a potential source of instability emanating from the second pillar. However, in invoking the second pillar in the formulation of monetary policy, allowance would have to be made for this.

For most of the sample period since the commencement of monetary union in 1999, this mechanism worked benignly. The ECB's success in maintaining price stability, relative to the poor inflation record in the legacy regimes of many of the member states, has resulted in a trend fall in money velocity of circulation in the euro area, as our theory suggests. By corollary, the loss of credibility should drive the income velocity of circulation higher. There is also some supporting evidence for this in our very limited sample afforded by the history of monetary union to date.

From a policy perspective, there is indeed an additional reason why our theory and results would seem to place a lot of weight on the importance of a central bank not losing credibility in the first place. It is because, in the context of the multi-country setting of our model, monetary union makes it more difficult to regain credibility once lost. The problem is that credibility is lost or gained at a national level. What is important for the ECB's reputation is national inflation rates relative to the same national inflation rates in the past even, as our theory and results suggest, this is the fairly distant past. Member countries with inflation above the ECB's target may not be compensated by countries with inflation below

the target if this inflation is negative, which is not consistent with price stability. So, the ECB may lose credibility even if area-wide inflation for the euro area is consistent with price stability.

In other words, the ECB's credibility may be affected adversely by relative price movements across member countries of the euro area. This poses a potentially substantial problem for the ECB. Part of this stems from the fact that it might be placed in a position in which it loses price stability credibility due to factors which are outside of its control.

This stems from the past chequered record in relation to inflation in many of the member states of the Eurosystem. Any reminder of the abuses of the old national high inflation regimes results in a reduction in the demand for money and inflationary pressures. So, even for an unchanged stance of monetary policy, a loss of inflation fighting credibility at the national level can, by itself, generate an acceleration of inflation. It also implies that, if credibility is lost temporarily (because of say a blip in the price level due to a random shock), it is hugely important to re-establish it as soon as possible.

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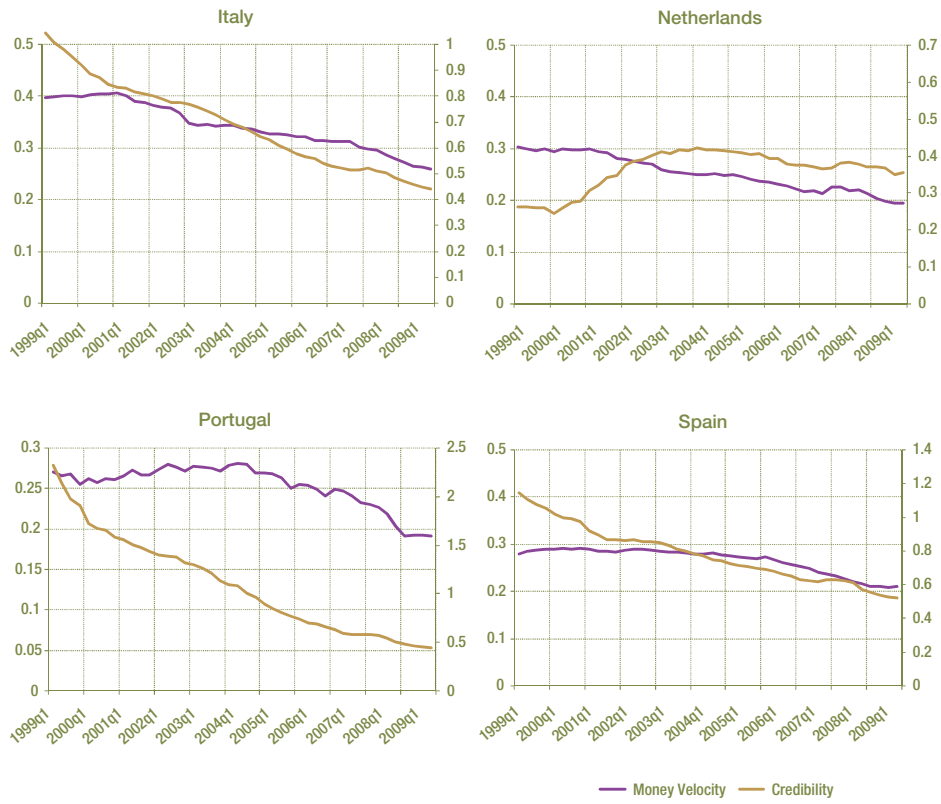
Appendix: Time Series Charts of Money Velocity and Monetary Credibility for EMU Participants (1999-2010)

Appendix: Time Series Charts of Money Velocity and Monetary Credibility for EMU Participants (1999-2010) (contd)



Liquidity-Driven Risks to Large Valued Payments

Frank Browne & Gavin Doheny*

Abstract

During particularly stressed financial or macroeconomic circumstances, banks' access to liquidity can become severely restricted. The recent financial crisis demonstrated this phenomenon all too plainly, when, in a climate of fear and uncertainty, both the interbank and international money markets ceased to function in a meaningful manner. Liquidity shortages can potentially create problems for a bank's ability to meet its outward intraday payments obligations on the TARGET2 real-time gross settlement system. Such a situation not only has negative implications for the respective bank but could also produce contagion effects for the TARGET2 system as a whole. In order to provide increased clarity regarding liquidity driven risks to large value payment systems, the Central Bank of Ireland has developed a 'liquidity buffer' indicator for the domestic credit institutions. The initial focus of this project centred primarily upon the development of an 'early warning' system, capable of identifying TARGET2 liquidity issues as they occurred in real time. However, during the development of such a platform, the analysis has also presented a means from which it is possible to derive a proxy for the level of risk banks detect in their environment. The analysis undertaken reveals that the Reserve Requirement (RR) plays an important role in how banks formulate their liquidity management strategies throughout the maintenance period. In times of increased uncertainty banks appear willing to hold excess liquidity, at a greater expense, in order to be guaranteed access to liquidity towards the latter half of the maintenance period. In a similar fashion, during a period of stability or relative certainty, banks do not choose to maintain excess liquidity on the TARGET2 platform, implying a degree of increased confidence in accessing liquidity when they require it later in the maintenance period. In this sense we can, to some degree, infer the degree of risk a bank perceives to be present in its immediate environment, by examining the respective institutions' liquidity management strategy over the maintenance period. In a broader fashion, the indicator also serves as a tool from which the Central Bank of Ireland can monitor banks' liquidity position with increased precision.

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1. Introduction

The objective of this article is to examine the area of funding liquidity risk and the associated implications for payment systems. The analysis aims to derive a framework that would help to calibrate the risks of liquidity constraints spilling over to payments and causing gridlock in the wholesale payments system.

The volume of transactions which interbank settlement systems handle on a daily basis is very impressive. TARGET2 processes a daily flow of transfers amounting to about 17 per cent of annual euro area nominal GDP. For the US, the equivalent figure for Fedwire and CHIPS together is about 28 per cent (see Baglioni, 2006).

A deficiency of liquidity can prevent a participant in the payment and settlement system from settling its obligations in real time as is facilitated by real-time gross settlement (RTGS) systems or at the end of the day as is typically the case in deferred net settlement (DNS) systems. Such a failure can give rise to a chain reaction in which participants depending on incoming payments, which have failed, are unable to honour their own outgoing payments obligations. Spill-over effects could cause the large-value payment system to become gridlocked. Of course, if participants held sufficient amounts of liquidity then this type of a collapse in the system would be obviated. However, as the recent financial market crisis amply demonstrated, under stressed conditions, liquidity can become both extremely scarce and expensive. In the limiting case, the market seizes up completely, an event also experienced during the recent financial crisis. Even in such extreme circumstance, there is typically still plenty of liquidity in the system in the aggregate but it simply does not circulate. It is not, therefore, just the total amount of liquidity in the system but its highly skewed distribution across market participants which is a key concern. The payments oversight function at the Central Bank of Ireland therefore needs to be in a position to assess the relative pressures of liquidity supply and demand facing individual banks.

There is therefore a trade-off between liquidity cost and availability on the one hand and settlement risk on the other and it is understandable that this trade-off is a major concern of public policy. It is a special concern for central banks since the dominant settlement instrument in large-value payments systems is issued by central banks, i.e., central bank money. Central banks have therefore been at the forefront of efforts to promote safe settlement systems.

The relationship between payments and funding liquidity risk is two way. Payments can affect funding liquidity risk in a number of ways. The degree of sophistication of payments technologies in operation can have a big effect. A transition from paper-based payments to dematerialised electronic payments has the benign effect of facilitating the compression of the time interval between a transaction being initiated and the settlement of that transaction, with finality if deemed necessary. For example, the shorter this interval of time, the smaller the funding risk is, i.e., the smaller the chances that an incoming payments obligation will not be capable of being honoured simply by virtue of the fact that the probability of an adverse event is less, the smaller the interval of time within which it can occur. In addition, RTGS has the effect of increasing the velocity of circulation of the settlement medium (central bank money). In principle, it can do so without limit. This is because the funds made available in the settlement of any one gross transaction by the payer are immediately made available again for the settlement of another transaction by the payee.

In this respect, real-time gross settlement would have ameliorated liquidity funding risk by effectively eliminating the risk arising from delay due to this time interval. However, it also, at the same time, increased liquidity funding risk by virtue of the fact that each individual payment has to be settled separately and adequate funds have to be available to meet each of these individual payments. Specifically, the payee bank must have sufficient liquidity at its disposal to honour its obligations in the payments system. Not only this, the liquidity in question has to be immediate, or zero maturity, liquidity. Although the concept of liquidity is widely used, it covers a whole array of financial assets of varying maturities. However, for liquidity to be a settlement medium it has to be

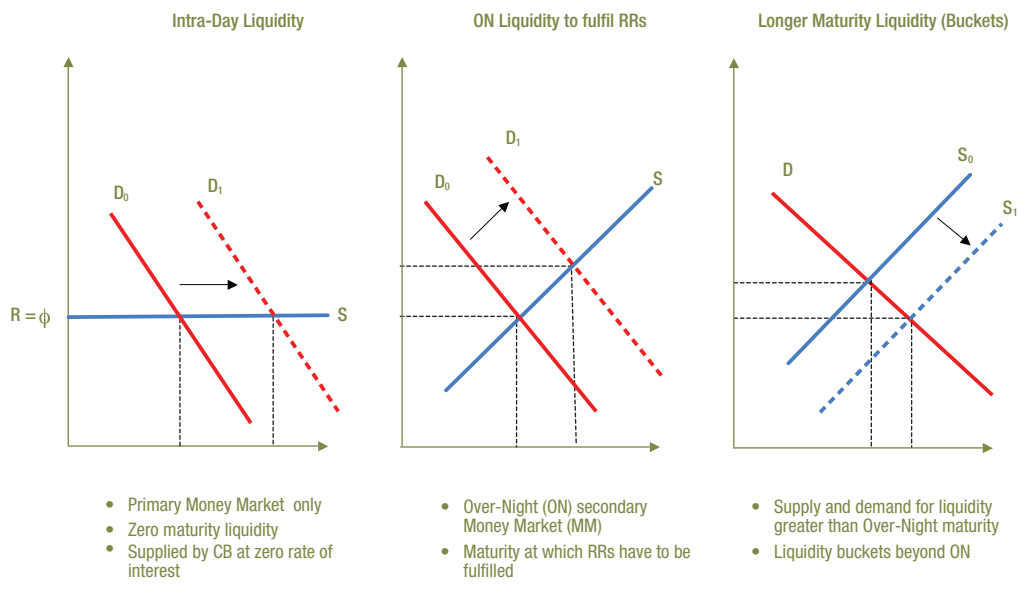
available instantly. A failure to settle is a real-time concern. A framework is therefore necessary to allow an overseer to detect if the relevant processes are, or are in danger of, going awry.

2. Liquidity Concepts

In the euro area there is no market for intra-day liquidity. This is because the ECB's operational framework is designed to supply central bank money in infinitely large amounts to bank counterparties in the money market at zero rate of interest. The only condition that needs to be respected is that counterparties have to be financially sound and have adequate collateral, which has to fulfil the eligibility criteria in the ECB's *General Documentation*. The intra-day supply and demand for liquidity are therefore likely to be as depicted in the first panel in Figure 1. If banks participating in the wholesale payments system have adequate eligible collateral then they can never be short of liquidity. The Eurosystem therefore always acts to ensure that there is a sufficient supply of the settlement medium, i.e., zero maturity central bank money, to lubricate the payments system.

The middle panel of Figure 1 reflects the supply and demand for overnight money placed with the central bank. This is a normal secondary market with an upward sloping supply schedule. This market is special because it is at this overnight maturity that the bank has to meet its statutory reserve requirement obligations. We denote the amount of liquidity the bank needs to hold in its account on an end of day basis so as to satisfy the reserve requirement over the maintenance period as the target level of reserves. Note that any surplus in its account at the end of the business day automatically becomes overnight liquidity and therefore contributes to fulfilling the reserve requirement target for the day. If this would not be sufficient to meet the end-of-day target level, it would have to borrow in the overnight market at some positive rate of interest. Alternatively, it could liquidate financial assets it holds in the longer maturity buckets for cash to deposit at the central bank overnight (see right-hand panel in Figure 1). However, converting longer-term maturity financial assets into payment systems liquidity (i.e., funding) exposes the bank to micro liquidity risk. Since both of these strategies are costly, with a normally upward sloping money market yield curve, it would not (in normal circumstances) be profitable for a bank to hold liquidity in excess of the requirement with the central bank. It would also be incentivised to manage its intra-day liquidity more efficiently.

Figure 1: Liquidity Supply and Demand



It is clear from the next section of the paper that the larger Irish banks do manage their liquidity more actively and possibly more efficiently than some of the smaller Irish clearing banks. It would appear that some of the latter employ the simple strategy of just maintaining enough overnight liquidity in their account at the end of each day so as to satisfy the averaging requirement for the maintenance period.

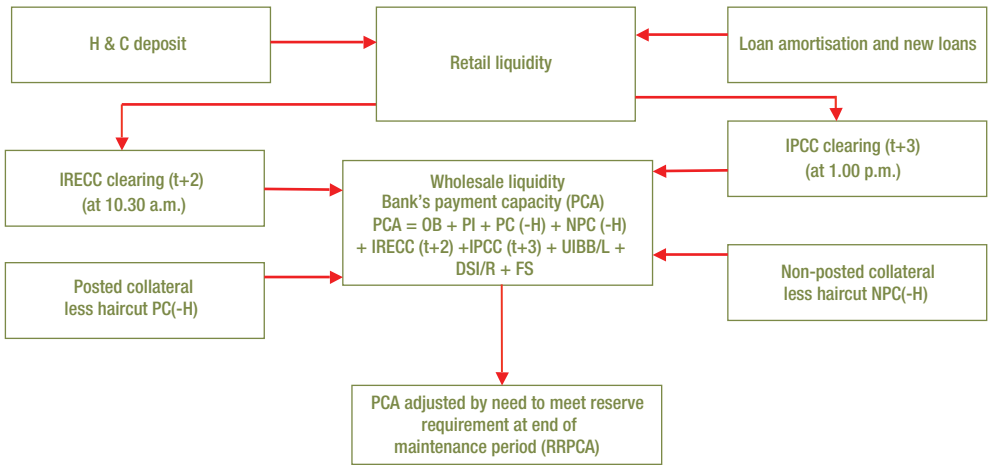
The operations of the Eurosystem have the effect of pre-empting the emergence of any secondary market in central bank money during the day. Indeed, to ensure that the system was sufficiently supplied with liquidity during the recent crisis, the ECB liberalised its definition of eligible collateral. It could be said that the Eurosystem's operational framework is well designed to minimise funding liquidity risk in the payments system.

Up until just before the start of the recent financial crisis, it was deemed highly unlikely that a bank participating in the wholesale payments system could ever encounter a shortage of the settlement medium. As just noted, this is mostly due to the way in which operational frameworks were designed, especially that of the Eurosystem. The likelihood of domino effects was considered very remote. This is no longer so. Considering euro area banks were seen to have hoarded vast amounts of central bank money, much of the limited supply of eligible collateral was already tied up in the Eurosystem. This consideration has to be added to the fact that the market value of much of the eligible collateral available to the banks participating in the euro area money market had been eroded following the collapse of financial markets. This means that banks can run out of eligible collateral and therefore may be unable to tap the central bank for funding. They may not, accordingly, be able to meet their requirements in the payments system. Domino effects cannot therefore be dismissed even in real-time gross settlement systems.

3. Intra-day Payment Capacity and Payment Obligations

Figure 2 gives a comprehensive picture of the various sources of an Irish clearing bank's payment capacity in real time. It shows the sources of retail and wholesale liquidity and how these relate to each other. In the short run, retail liquidity is determined by household and corporate (H&C) demand for money (predominantly a demand for bank deposits). New loans granted along with existing loan amortisations also play a part in determining retail liquidity availability.

Figure 2: Sources of a Bank's Payment Capacity



Electronic funds transfer (EFT) is the electronic infrastructure through which electronic payments are made. The IRECC ''Rules for Clearing'' govern the process by which payments are made and cleared. The net obligations of IRECC participants are settled via the TARGET2 system. The EFT system in Ireland operates on the basis of a two-day cycle. The settlement process is completed (with finality) when the settlement accounts of each of the participants at the Central Bank are debited or credited as appropriate. Payments via the EFT infrastructure impact on the bank's position at the Central Bank at 10.30 a.m. after a two-day delay from when the payment was initiated. The settlement process for cheques via IPCC is similar but mostly analogue with the entire process, including the correction of any errors, completed by 1.00 p.m. with a three-day lag from the day a payment was initiated.

Bringing all the sources of real-time liquidity together, we see that the overall payment capacity (see middle panel in Figure 2) available to an Irish clearing bank at any time during the day depends on:

(1) the bank's opening balance at the central bank (OB) at the start of the day; plus

(2) Payment inflows during the day (PI), reflecting high-value transactions between financial institutions arising from their involvement in financial markets; plus

(3) whatever liquidity becomes available from the retail settlement during the day [i.e., IRECC (t + 2) and IPCC (t + 3)]; plus

(4) eligible collateral posted less the appropriate haircut [PC(-H)]; plus

(5) eligible collateral not posted less the appropriate haircut [NPC(-H)]; plus

(6) unsecured wholesale (mostly interbank) borrowing/lending (UIBB/L); plus

(7) debt securities issued, minus debt securities redeemed (DSI/R); plus

(8) liquidity garnered from the sale (in extreme cases, fire sale) of financial and other assets (FS).

The bank can also borrow in the private repo market. However, the potential for this depends on the collateral available to the bank and this is already captured by the two collateral variables noted. To avoid double counting, it is not noted explicitly in the flow diagram in Figure 2. A bank can, of course in principle, borrow or lend on the unsecured inter bank market (UIBB/L) or can issue or redeem debt (DSI/R). Although, as already noted, there is no intra-day inter bank money market in the euro area, funds that are borrowed at longer maturities and added to the bank's account at the Central Bank are, in principle, available to discharge obligations arising in the wholesale payments system within the business day.

A bank's payment capacity (PCA) is therefore comprised of its position at the Central Bank at the start of the business day, payments due to it during the day, its market borrowings along with its net borrowing capacity during the day from the Central Bank. It can, therefore, come from both wholesale and retail sources. However, the volumes coming from retail sources *in real time* are likely to be small in relative terms and for any particular bank, should be close to zero in the medium term. Note also that the value of collateral has to be adjusted to take into account the haircut applied by the ECB according to the specification in the *General Documentation* — the value of the liquidity extended by the ECB is less than the face value of the collateral provided as security.

It is also likely that the headline payments capacity (PCA) as indicated in the flow chart will be comfortably in excess of the bank's payments obligations (PO, i.e., payments due from the bank and debited to its account at the Central Bank) in most circumstances. However, the final amount represented by PCA in Figure 2 does not fully represent the bank's actual payments capacity. This is because a certain amount of it may not be available for making payments since it has to be held in the TARGET2/Reserves account at the Central Bank so as to meet the statutory reserve

requirements of the ECB's operational framework. This means that PCA has to be adjusted to give a more accurate picture of funds available in real time to effect payments (i.e., RRPCA). This adjustment can only be done on the basis of a number of assumptions. The following section deals with this issue.

4. Adjusting for Reserve Requirements

The amount of liquidity available to the bank for meeting payment obligations is, potentially, considerably less than that in its account at the Central Bank. This is because the bank has to meet its statutory reserve requirement specified in the *General Documentation* governing the ECB's operational framework. The ECB requires credit institutions to hold minimum reserves with the Central Bank within the framework of the Eurosystem's minimum reserve system[1]. The amount of minimum reserves to be held is determined in relation to the bank's reserve base. The minimum reserve system allows credit institutions to make use of averaging provisions. This implies that compliance with reserve requirements is determined on the basis of the average of the end-of-calendar-day balances held by the bank in its TARGET2/reserves account with the Central Bank over the relevant maintenance period. The reserve requirement is 2 per cent of the bank's reserve base (RB). Although the broad purpose of the minimum reserves system is to help stabilise money market interest rates and to create or enlarge a structural liquidity shortage, the funds held in the account can also be used for making payments provided the statutory average minimum is respected.

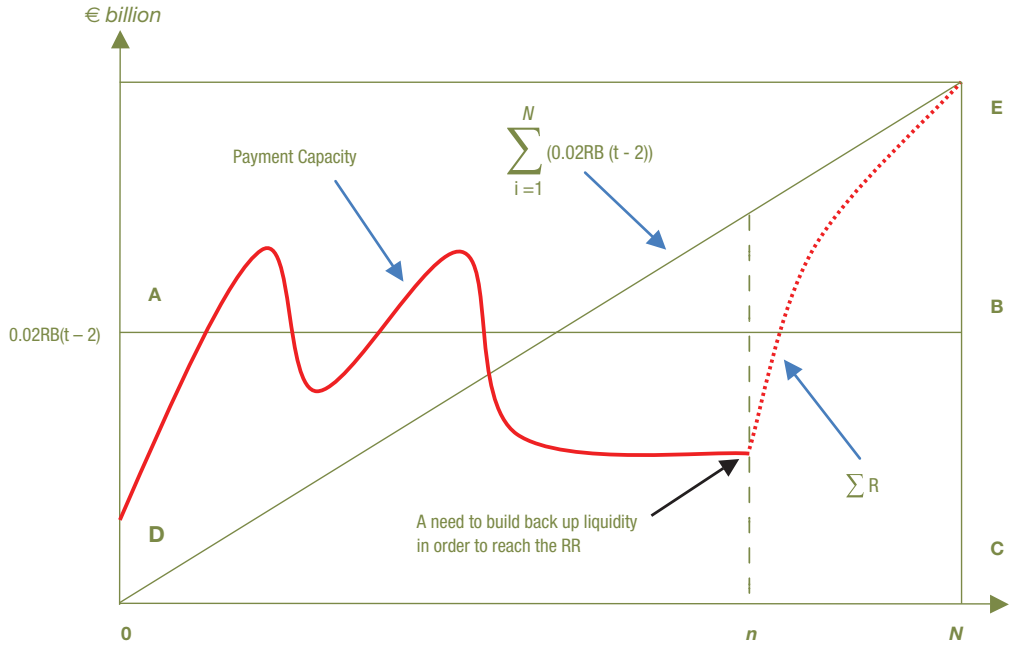
This could mean, for example, that a bank could use its reserve account to the full in the early stages of the maintenance period but in the latter half of the period it will have to start rebuilding its position with the Bank so as to fulfil its reserve requirement on average over the maintenance period. Alternatively, a bank could front-load its TARGET2 account, allowing it to run down its liquidity position over the maintenance period, whilst maintaining a sufficient average to fulfil the reserve requirement. Although 'frontloading' is clearly an option, it is more expensive for banks, relative to 'backloading' the reserve requirement. In a situation of extreme uncertainty (as in the recent crisis) frontloading over the maintenance period makes sense, as banks are willing to incur a higher cost in order to be guaranteed an ample supply of liquidity. In times of increased stability and certainty, banks can manage their liquidity needs more cost effectively, confident that required liquidity will be readily available. A risk-adverse credit institution would tend to frontload in the stressed economic environment that has prevailed since the start of the financial crisis.

The reserve base is close to those deposits of all types that qualify for inclusion in the ECB's M3 money aggregate definition. The balance sheet data referring to the end of a given calendar month are used to determine the reserve base for the maintenance period starting in the calendar month two months later. The *General Documentation* gives the example where the reserve base calculated from the balance sheet at end of February would be used to calculate the reserve requirement to be fulfilled by credit institutions in the maintenance period beginning in April.

Banks' liquidity management strategies for fulfilling their reserve requirement may differ and, accordingly, the amount of funds available for payments purposes may also differ. Indeed, the intra-maintenance period pattern of banks' accounts with the Central Bank clearly point to differences across banks in the way they manage their liquidity. Short of any knowledge of what these strategies are (however, see below for a plot of two representative banks' daily account movements which clearly indicate differences) we can only estimate when the reserve account is, and is not, usable for payments purposes. To do this, we postulate a benchmark according to which banks might fulfil the reserve requirement. We then compare this with the actual pattern of fulfilment. If the actual is above the benchmark in, say, the second half of the maintenance period then the bank would retain considerable scope for using

[1] The legal framework for this system is laid down in Article 19 of the Statute of the ESCB/ECB, Council Regulation (EC) No. 2531/98 of 23 November 1998 concerning the application of minimum reserves by the ECB and Regulation (EC) No. 1745/2003 of the ECB on the application of minimum reserves (ECB/2003/9).

Figure 3A: Fulfilling RR and Payment Capacity – *the case of backloading*



its TARGET2 account for payments. If it is equal to, or less than, the benchmark then the flexibility is less and the bank may have to build up its liquidity before the end of the maintenance period in order to meet the requirement. This means of course that the amount of funds in its Central Bank account is not a good indicator of payments capacity (PCA). It needs to be adjusted downwards. This is done using the following method.

In the benchmark we assume that the requirement is fulfilled smoothly throughout the maintenance period, i.e., that the bank adds 0.02RB(t-2) to its end-of-business-day reserve account at the Central Bank each day. The cumulative fulfilment at any point of time (i) would therefore be:

$$\sum_{i=1}^{N}[0.02RB\ (t - 2)]$$

i = 1(start),.....,n,.....N (end).

Cumulative actual reserves held at the Central Bank at the end of the business day are the sum of these for each previous day in the current maintenance period, i.e.:

$$\sum_{i=1}^{N} R\ (t + i)$$

i = 1(start),.....,n,.....N (end).

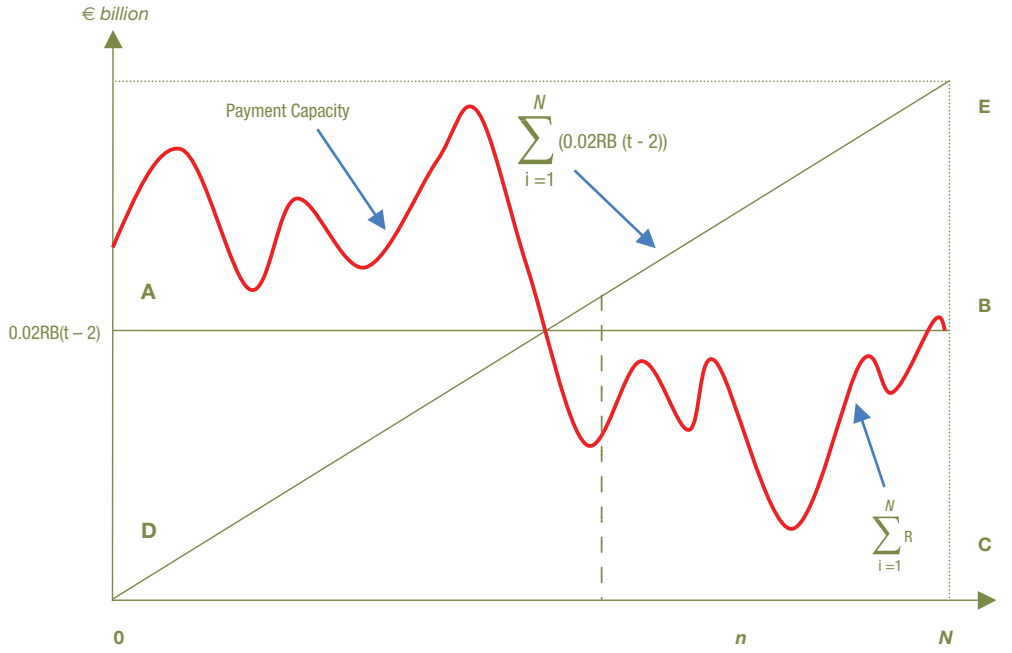
R is the actual level of the reserve balance at the end of the calendar day for every day of the maintenance period. The situation is illustrated in the accompanying Figure 3A, 3B and 3C.

Figure 3A illustrates a stylised version of the case in which the bank backloads the build up of its account to meet the requirement. In this case the bank has to build up its account in the latter half of the period to meet the averaging requirement. Since the funds have to stay in the account overnight to qualify as required reserves, some of these funds may not be usable to meet incoming payment obligations. The account has therefore to be adjusted downwards to take account of this fact and to get the true payment capacity for the bank.

For the bank to meet the average of 0.02 RB (t—2) for each end of day in the maintenance period, it would have to accumulate at a rate [0.02 RB (t—2)] each end of day over the full maintenance period (i.e., triangle DEC, which is the same as the rectangle ABCD).

In order to estimate the part of the reserve balance which is available for payments purposes we also have to make some assumption about when in the maintenance period banks are likely to start adjusting their

Figure 3B: Fulfilling RR and Payment Capacity - *the case of frontloading*



reserve balance to meet the average reserve requirement for the full period. The assumption we are making is the following: banks only start adjusting when they know the reserve base from the previous period [RB (t — 2)], i.e., mid-way through the current maintenance period. Before this banks are assumed to use the reserve base freely to meet payment commitments.

After the mid-point of the maintenance period, it is assumed that banks start making the correction to the account balance (AB) required to meet the averaging over the full period. The part of the account balance available to the bank for payments (ABA) is therefore:

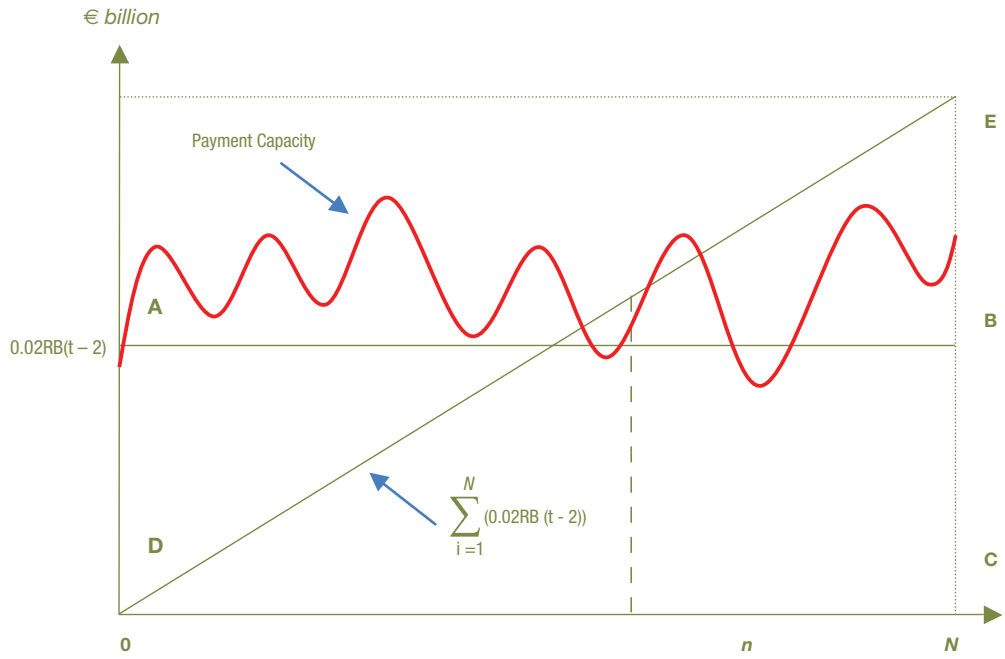
$$ABA = \sum_{i=1}^{N} R - \left(\sum_{i=1}^{N} (0.02RB\ (t - 2))\right)$$

This is for all i time periods where i = N/2, where N is the total number of days in the maintenance period. The need to fulfil the reserve requirement in the latter half of the maintenance period starts to be a drain on payment capacity. So, in the first half of the maintenance period, it is assumed that the total account (AB) is available for payments while in the second half the amount available is given by the right-hand of the above equation. If this is negative, as is likely, then not only is none of the account available for payments but the bank has to borrow to build up the account to meet the reserve requirement.

It is notable that all payments made during the day have, as we have noted already, to be made with zero maturity liquidity. However, the liquidity needed to fulfil the reserve requirement has to be a minimum of overnight maturity. Of course, intra-day liquidity that is still in the TARGET2/reserve account at the end of the calendar day, after all intra-day borrowings from the Central Bank have been repaid, becomes overnight if not used. So, as illustrated in Figure 2 above, there is a clear link between intra-day liquidity and overnight liquidity. A bank may have to refrain from using its intra-day liquidity for payments so that it can reach its target overnight liquidity so as to be able, in turn, to respect the statutory average requirement at the end of the maintenance period.

Figure 3B displays a stylised representation of the case in which a bank fulfils the reserve requirement by frontloading its TARGET2 account at the Central Bank. Fluctuations in the account are well in excess of the required average in the early part of the maintenance

Figure 3C: Fulfilling RR and Payment Capacity - *the case of consistent over fullfilment*



period and even more in excess of what would be required by a perfectly smooth fulfilment on a daily basis. This allows the bank considerable scope for running down its account in the latter part of the maintenance period. The bank's payment capacity would therefore be ample going into the second half of the period. Of course it has to be recognised that its payment capacity in the early part of the maintenance period may have been compromised by the bank daily targeting of an ambitious level of reserves. Therefore, the TARGET2 account has to be adjusted downwards to obtain the bank's true payment capacity in the large-value payment system. Without this adjustment the account gives a misleading impression of the bank's payment capacity.

This frontloading pattern of fulfilment may be specific to recent financial crisis. Against a background of pronounced financial instability and dysfunctional money markets, banks were not confident of being able to fulfil their reserve requirement if they left it to the end, or towards the end, of the maintenance period. They ran the risk of being sanctioned by the Eurosystem. They may therefore be inclined to fulfil the reserve requirement early in the maintenance period. This is what Figure 5 now seems to be illustrating. It is therefore supportive of the idea that in an uncertain financial markets environment banks will tend to frontload their reserve holdings.

Moreover, in a situation whereby Irish banks are heavily reliant on ECB funding, it is highly unlikely that they would do anything (such as not respecting the ECB's own operational framework) to jeopardise the continuation of this support.

Finally, Figure 3C shows the stylised case in which the bank over-fulfils consistently the reserve requirement. This situation is fairly straightforward. The headline figure may not need to be adjusted since the bank has a surplus after fulfilling its reserve requirement and is therefore unlikely to be constrained in its use of the TARGET2 account for payments purposes.

5. Payment Capacity, Payment Obligations and Development of a Liquidity Buffer Indicator

This section outlines the development of a 'liquidity buffer' indicator for domestic credit institutions active on the TARGET2 real-time

gross settlement system. An intra-day analysis utilising real-time hourly payments data has been conducted by the Central Bank for all six domestic Irish credit institutions. The end product of this analysis is to define the liquidity buffers available to Irish banks on the TARGET2 platform at a given point in time (hourly time brackets). The indicator developed may prove useful as part of an early warning system, in the event that liquidity buffers held on the TARGET2 system fall below an assigned threshold limit on an intra-day basis. In addition, examination of the liquidity indicator over time represents a valuable tangential tool in gauging the relative health and resilience of domestic credit institutions.

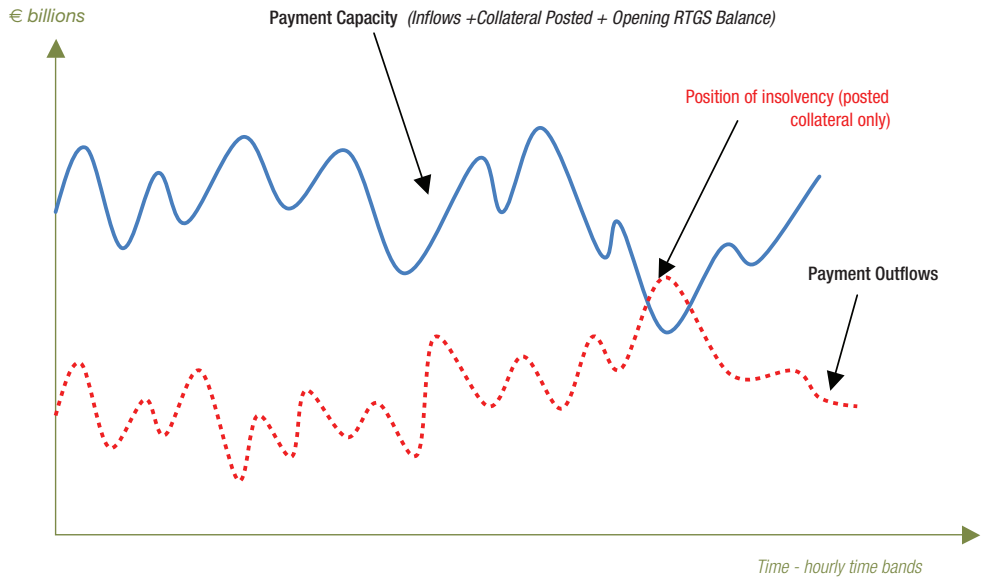
5.1 Intra-day Payment Capacity/Development of an Indicator

In terms of creating a TARGET2 liquidity buffer indicator, domestic credit institutions' payment capacity at any specific point in time is assumed to be comprised of the following four elements:

1. the bank's opening balance at the Central Bank at the start of the day. This equates to the opening balance of an institution's TARGET2 RTGS account;
2. eligible collateral posted to the TARGET2 platform;
3. payment inflows executed during the day; and
4. available eligible collateral not already allocated to TARGET2 or elsewhere.

For the purposes of this exercise, we consider only three elements of an institution's payment capacity in order to construct the 'liquidity buffer' indicator (partially equating to the 'wholesale liquidity' box in Figure 2). Owing to significant data limitations and recognised problems with existing data, available eligible collateral not already allocated to TARGET2 is not considered in the formulation of the liquidity buffer. This restriction implies that the liquidity indicator measures liquidity buffers on the TARGET2 platform in isolation. For example, at the point of insolvency in Figure 4, an institution may have the capacity to post additional collateral to the payments system in order to boost its payment capacity. Nevertheless, the need to post additional collateral in order to meet daily payment obligations can only be viewed as a significant liquidity management failure at a large domestic credit institution.

Figure 4: Intraday Payment Capacity



In order to obviate any possibility of the bank not being able to meet any debits to its account at the Central Bank, the sum of the above four items comprising the bank's payment capacity (PC) has to be strictly greater than payment outflows (PO) at all times throughout the day. Therefore what we need to know is whether this payment capacity would ever be likely to be a constraint on a bank's ability to honour payment outflow instruction as they are submitted via TARGET2. (See Figure 4 which illustrates the case.)

There are two aspects to this. The first issue is the average level of the bank's payment capacity relative to the average payment outflow instructions. It is likely that the above inequality would be invariably respected. However, when the second issue of volatility is added to the picture, it is not inconceivable that PO could exceed PC.

Internationally, commentators have argued that banks typically hold only a small amount of cash and reserves in order to meet their payments' needs. Instead banks rely heavily on incoming payments to meet outward obligations, implying a very high velocity of circulation amongst credit institutions. If the velocity of circulation were to slow down, as it has done in the recent financial crisis, then banks may become increasingly vulnerable to defaulting on payment obligations. Therefore, during a time of financial crisis the payments system may become more fragile, increasing the likelihood that banks may suffer impairments emanating from the payments system.

5.2 TARGET2 'High Frequency' Intra-day Analysis[2]

A specific credit institution's TARGET2 liquidity buffer is defined as the difference between the total inflow series (payment capacity) and the cumulative payment outflow series from the beginning to the close of business. Total inflows are calculated as the sum of the opening RTGS account balance, the value of collateral posted to TARGET2 and the cumulative payment inflows received throughout the day. Payment inflows and outflows are aggregated to an hourly frequency, ranging in hourly brackets from before 7.00 a.m.-8.00 a.m. to 5.00 p.m.-6.00 p.m. at the close of business. During each hourly segment, the total inflow series must be greater than the cumulative payment outflow series to facilitate a positive liquidity buffer.

[2] For illustrative purposes the analysis presented relates solely to a large domestic bank, the indicator has also been created for all six domestic credit institutions active on TARGET2.

Chart 1: Intraday Payment Capacity & Cumulative Outflows – Large Domestic Bank (One Day Sample: 3rd June 2009)

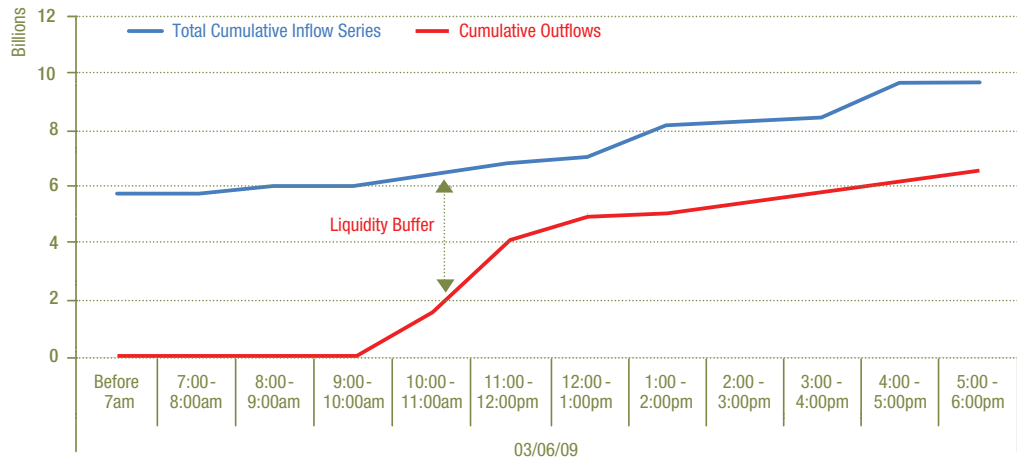


Chart 2: Liquidity Buffer Indicator — Large Domestic Bank (One Day Sample: 3rd June 2009)

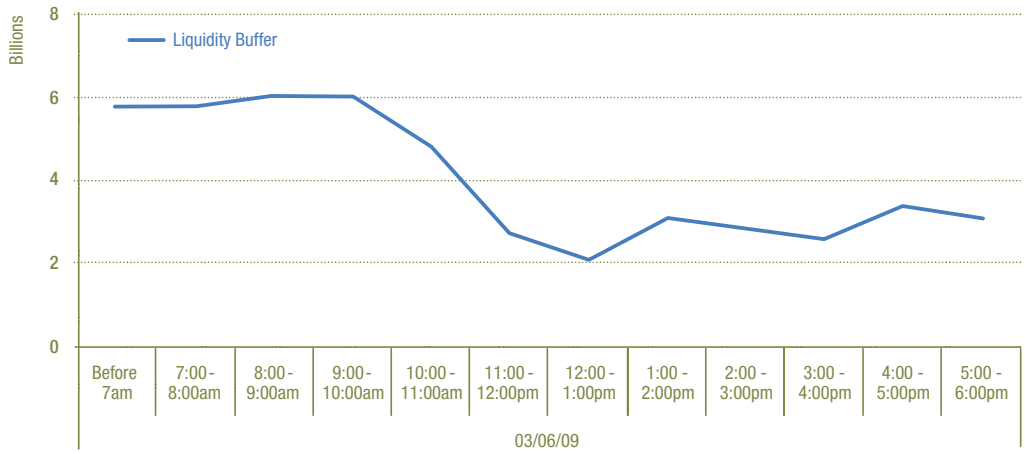
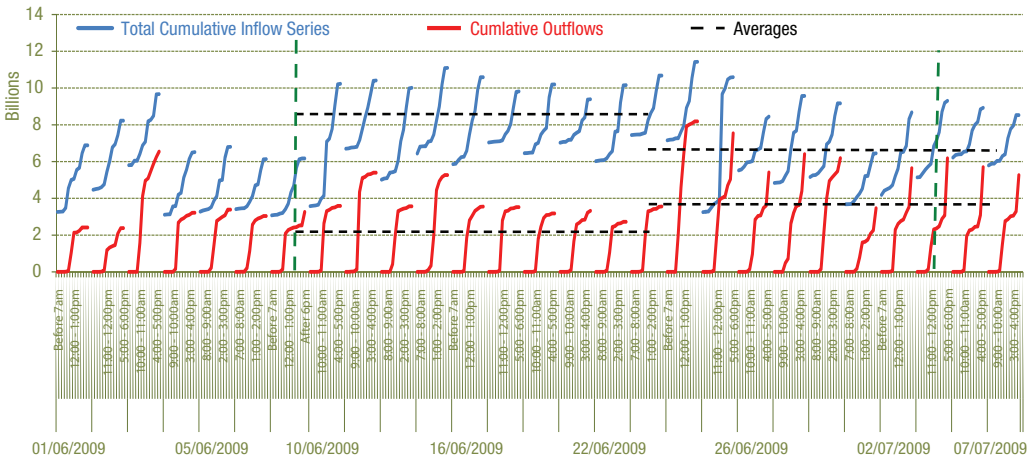


Chart 1 illustrates a large domestic bank's hourly liquidity buffer throughout the 3rd June 2009 as an example. At each hourly segment the liquidity buffer maintains a positive balance, demonstrating no operational difficulties in issuing outward payment instructions. The difference between this bank's total inflows and cumulative payment outflows for the 3 June 2009 are depicted in Chart 2.

In effect, this series represents the credit institution's 'liquidity buffer' indicator. Noticeably, the liquidity buffer weakens significantly towards the latter half of the day, falling from over €6 billion in the morning to just €2 billion at 1 p.m., demonstrating the relatively high volatility typically observed in banks' liquidity buffer levels.

Chart 3: Intraday Payment Capacity & Cumulative Outflows — Large Domestic Bank (1st June 2009 - 7th July 2009)



Considering a wider time horizon, Chart 3 illustrates both the payment capacity and cumulative outflow series for a large domestic bank over the period: 1 June 2009 — 7 July 2009. It is evident from the chart that liquidity buffer levels may change due to a fall in the total inflow series, a rise in cumulative payment outflows or some combination of both. The green 'average' lines in Chart 3 show how a bank's TARGET2 liquidity buffer may be sharply restricted as a result of a decrease in the total inflows series or a corresponding rise in the payment outflows series. The trend observed in Chart 3 clearly illustrate that the liquidity buffer levels available to domestic banks are quite volatile over time, owing to sharp innovations in both the cumulative payment outflow and the total cumulative inflow series.

Owing to the fact that liquidity buffers are calculated using cumulative payment inflows and outflows during the day, the indicator series created is not continuous over time. However, plotting consecutive daily liquidity developments reveals the long-term trend in buffer levels quite clearly (Chart 4). Two obvious liquidity buffer characteristics emanate from Chart 4. First, intra-day volatility in available TARGET2 liquidity from the morning to the latter half of the day is quite pronounced. Second, notwithstanding daily fluctuations in liquidity buffer levels, the longer-term trend in available liquidity can be derived from the series. This longer-term trend ultimately reflects the overall health of a bank's liquidity position to some degree. However, it may also be derivative of the maintenance period schedule relating to the credit institution's minimum reserve requirement (see Figure 5).

An intra-day liquidity analysis allows one to pinpoint specific points during the day when liquidity buffers may become negative. However, if we have observed the event it is already too late. The liquidity buffer indicator needs to act as a warning signal and allow overseers to prevent the failure of outward payment instructions. This may be achieved in part by setting a lower bound threshold limit below which the liquidity buffer may not fall.

Manually monitoring liquidity buffer trends may help to forewarn of an imminent position of insolvency and prevent the resulting fallout within the payments system. However, this would be quite a slow and labour intensive process that would not, for example, capture a sudden fall in liquidity during one isolated day. In addition, the liquidity buffer indicator is created with a one day lag, meaning that any major developments would not be identified on the day they unfold. Accordingly, an automated system that would signal any drop below an assigned threshold level in real time represents the optimal framework from which to monitor the liquidity buffer indicator on an ongoing basis (see Section 5.3).

Chart 4: Liquidity Buffer Indicator — Large Domestic Bank (1st June 2009 - 7th July 2009)

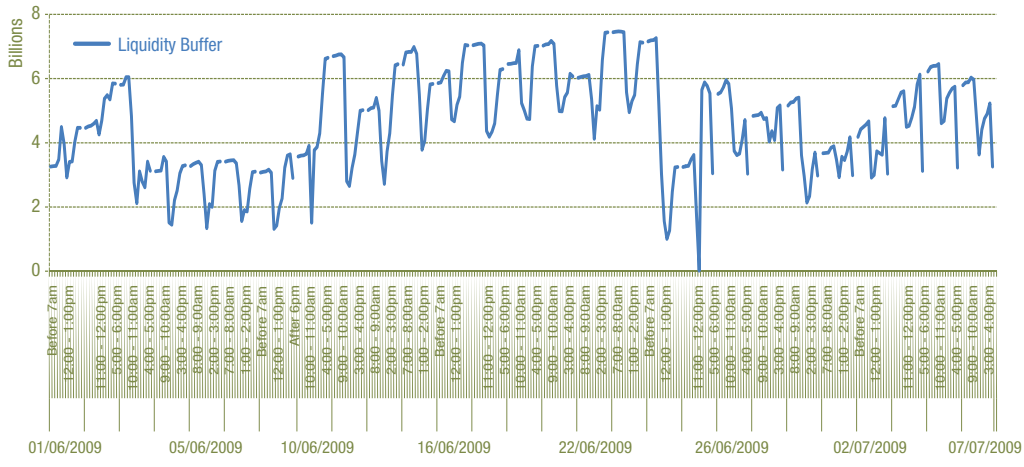
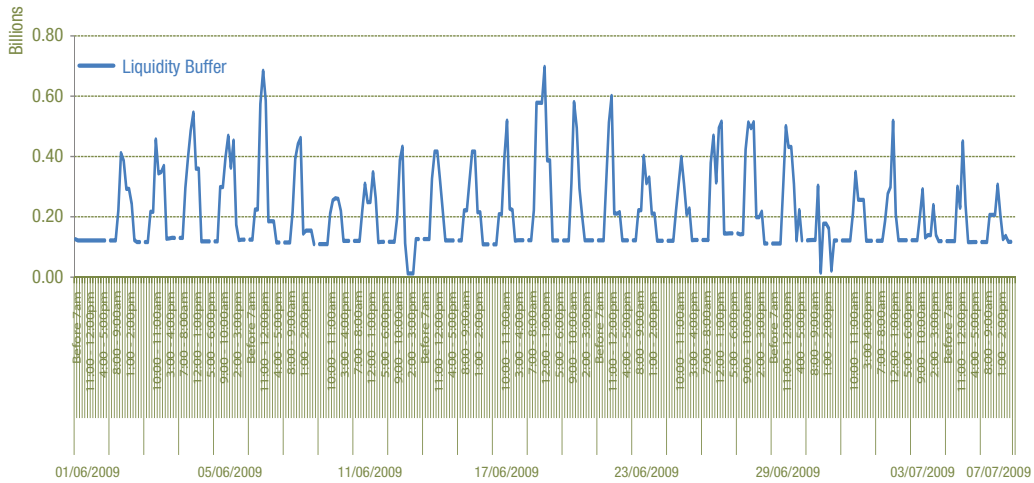


Chart 5: Liquidity Buffer Indicator — Small Domestic Bank (1st June 2009 - 7th July 2009)



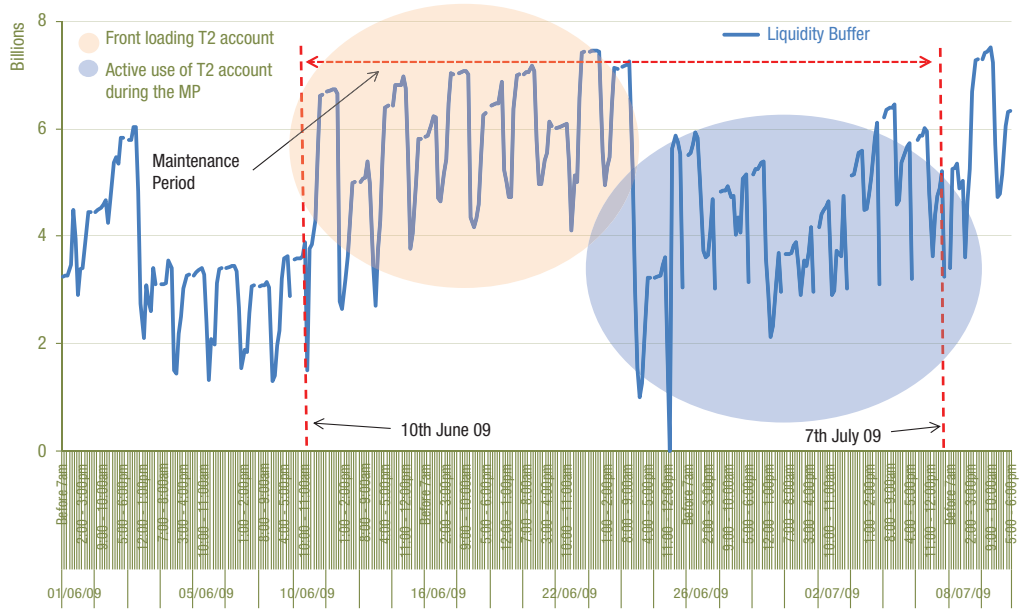
5.2.1 Liquidity Management — Large-v-Small Domestic Credit Institutions

Large domestic Irish banks appear to manage their liquidity more actively and possibly more efficiently than smaller Irish clearing credit institutions. This may be due to the fact that larger banks operate on a much larger scale, meaning there are substantial gains or savings to be had in efficiently managing liquidity flows over the maintenance period. Chart 5 depicts the liquidity buffer indicator for a representative small domestic bank.

In comparison to the large domestic bank in Chart 4, smaller clearing banks do not seem to actively manage their liquidity to the same degree as large banks. Instead they employ a simple strategy of maintaining enough overnight liquidity in their account at the end of the day to satisfy the averaging requirement for the maintenance period. The liquidity management strategy employed by large domestic banks appears to be largely derivative of the maintenance period schedule. This hypothesis is illustrated in Figure 5. Domestic banks are free to manage their liquidity requirements in any manner they wish. A large bank may choose to run down its TARGET2 account during the early stages of the maintenance period, requiring the institution to restore the account balance in the latter half of the maintenance period in order to fulfil the reserve requirement average.

However, more recently (considering the pronounced stresses in the financial environment) we typically observe large domestic banks 'frontloading' their TARGET2 accounts at the beginning of the maintenance period. Frontloading the account allows a credit institution to fully utilise available TARGET2 liquidity for payment purposes in the latter part of the maintenance period, subject to fulfilling the reserve requirement. This type of behaviour implies that banks are somewhat fearful of employing a more cost effective liquidity strategy over the maintenance period. If for example, a bank were to backload its TARGET2 account it would be exposed to the risk of encountering a liquidity constraint in the latter stages of the maintenance period, should sufficient liquidity not be readily available. In such an event, the bank would be heavily sanctioned for not fulfilling its reserve requirement average. Therefore, in an environment of stressed financial conditions, credit institutions are willing to pay an additional cost in order to maintain a degree of certainty that they have access to ample liquidity, to fulfil their needs over the maintenance period.

Figure 5: Maintenance Period — Large Bank Liquidity Management



5.3 Comparison with Euro Area Developments

Having established that domestic Irish credit institutions predominately frontloaded their payment accounts during the recent turmoil raises the question as to the corresponding developments within the wider euro area. Evidence from the euro zone indicates that on aggregate, credit institutions typically frontloaded their current accounts at the beginning of the maintenance period during the most pronounced stages of the recent financial crisis (see Figure 6A). Banks fulfilling the reserve requirement with this type of 'frontloading' approach appears to be characteristic of periods of uncertainty or financial stress. In a similar fashion to Irish banks, euro area credit institutions also appeared to accept the higher cost of maintaining increased levels of liquidity in order to be certain that they could fulfil the reserve requirement at the end of the maintenance period.

However, when one examines the behaviour of euro area banks during a period following the worst of the crisis, it is clear that banks regained a certain degree of confidence. This is evident by the fact that credit institutions appear to have reduced the level of liquidity they hold, following the ECB's decision to make vast amounts of liquidity available to the euro area banking system (see Figure 6B).

5.4 Optimal Surveillance Framework

Threshold Limit — Real Time Automatic Alarm Trigger

In an ideal liquidity surveillance framework, the 'liquidity buffer indicator' must have the ability to act as an early warning indicator in real time. In theory this may be achieved by setting an arbitrary threshold level, say, €2 billion (Chart 6). In the event that an institution's liquidity buffer fell below €2 billion, a real-time alarm would be triggered, sending a message to an overseer indicating that the threshold level has been breached. The real-time element of this system would involve a software based algorithm that monitors real-time TARGET2 data for domestic credit institutions.

An automated alarm such as this would facilitate the timely identification of liquidity based disturbances for the domestic banking sector. The early warning of a potential liquidity shortage would afford regulatory authorities the maximum amount of time possible to remedy the problem before it got out of hand. Additionally, knowing such an alarm is in place, banks would have an increased incentive to monitor their liquidity profile more carefully in order to avoid coming to the attention of authorities.

Figure 6A: Eurozone RR Fulfilment (key turmoil period)
Maintenance Period (Turmoil) — 8th August - 11th September 2007

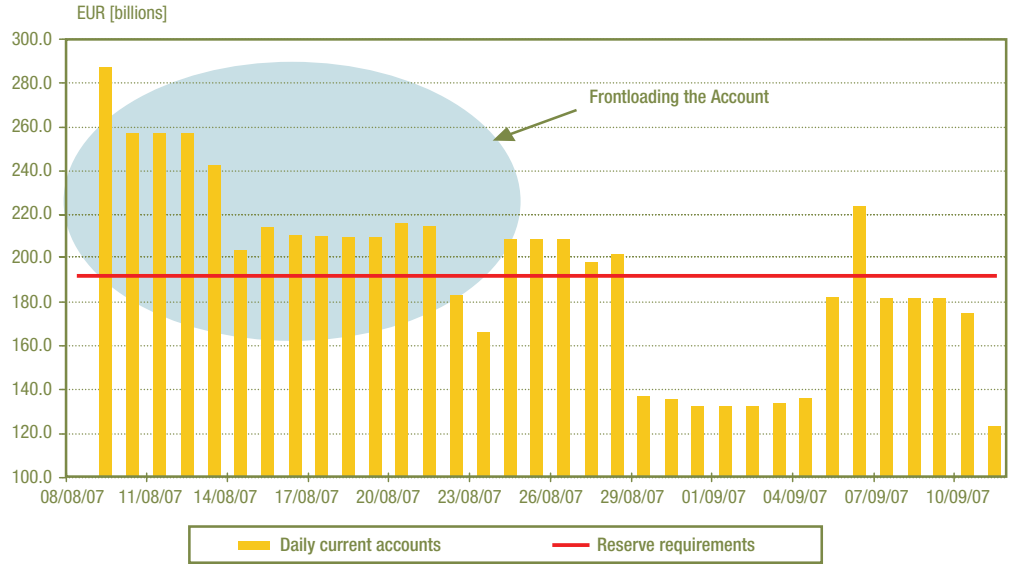
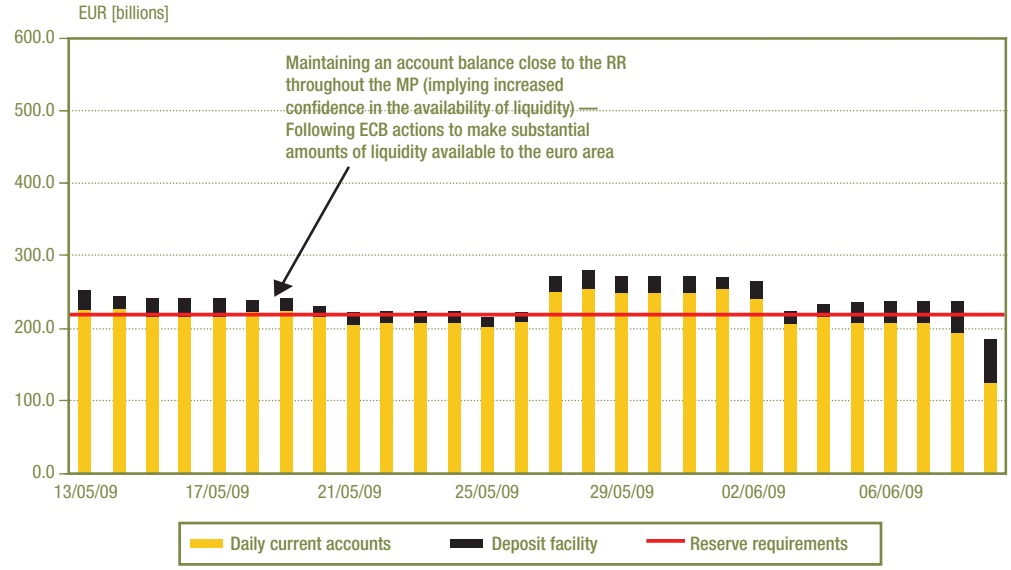


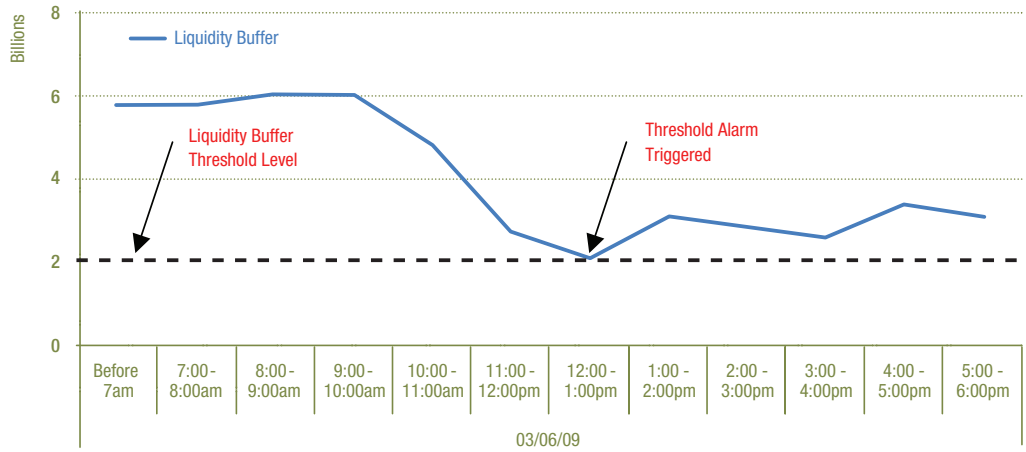
Figure 6B: Eurozone RR Fulfilment (post key turmoil period)
Maintenance Period — 13th May - 9th June 2009



Source(s): European Central Bank

[4] Presentation by Paul Mercier at the 9th ECB Seminar on Payments & Settlement Issues for Central Banks, 8th September 2009, Frankfurt am Main.

Chart 6: Liquidity Buffer Indicator — Alarm Trigger



5.5 Caveats to the Approach/Ongoing Issues

While the exercise undertaken has ultimately been successful in creating a means to provide oversight for the Irish component of the TARGET2 platform, there are a number of caveats that require attention.

1. Total Collateral Data

As already indicated, the liquidity buffer levels calculated do not incorporate additional eligible collateral that credit institutions may possess but have not allocated to TARGET2. In the event that a bank's liquidity buffer may be in danger of becoming negative, the bank is free to post additional collateral to the system. In such a scenario, the liquidity buffer indicator would essentially under represent the liquidity available to meet payment instructions.

2. Emergency Liquidity Assistance

In the event that a domestic credit institution's liquidity buffer became dangerously low (i.e. close to the assigned threshold limit) the bank may request Emergency Liquidity Assistance from the Central Bank. In this scenario, 'non-eligible collateral' may be accepted by the Central Bank to boost the credit institution's liquidity position. In order to incorporate this element into the liquidity buffer indicator, an estimate of domestic banks' 'non-eligible' collateral would be required.

3. Reserve Requirement

Owing to the fact that a bank's liquidity buffer series is at least partially derivative of the maintenance period schedule, the total stock of liquidity available to a bank on the TARGET2 platform (i.e., the payment capacity) may not be used solely for payment instruction purposes. Accordingly, the liquidity buffer indicator may need to be revised downwards in order to take account of the minimum reserve requirement as explained earlier in the paper.

4. Contingency Funding Lines/Agreements

Typically, credit institutions possess a number of contingency funding lines/agreements with other financial institutions and/or intermediaries. In the event of a liquidity shortage a bank may choose to call in these contingency agreements, thereby boosting its liquidity position in the short term. An estimate as to the volume and indeed conditions attached to these agreements would be required to integrate this element into a holistic measure of an institutions available liquidity buffer.

5.6 Outcome of the 'Liquidity Buffer Indicator' Development

In order to provide a means of conducting oversight of the Irish component of the

TARGET2 system, the Central Bank has developed a 'liquidity buffer indicator' relating to domestic credit institutions. Using data from the TARGET2 real-time gross settlement system, a liquidity buffer indicator may now be created and monitored over time for each Irish bank active on the settlement system. For the future, the framework could be adapted to include a number of additional elements, such as a 'real time alarm trigger'. This would represent the establishment of a worthwhile framework from which to monitor intra-day liquidity risks.

6. Conclusions

A bank encountering a deficiency of liquidity or reserves in its account at the central bank will not be able to settle incoming debit payments to its account. Such a failure can give rise to a systemic chain reaction in which participants depending on incoming payments, which have failed, are unable to honour their own outgoing payments obligations. This type of spill-over effect could cause the large-value-payment system to become gridlocked. Such a threat to the system as a whole can be obviated by banks holding sufficient buffers of liquidity. The recent crisis has amply demonstrated, however, that liquidity supply can become strained in periods of heightened uncertainty. The interbank money market which, in normal times, does a very efficient job of redistributing liquidity, from surplus to deficit banks in the system, can seize up completely. Even in such extreme circumstances, there is still typically ample liquidity in the system as a whole but it does not circulate. To obviate gridlock, therefore, the payments oversight function in the Central Bank and Financial Services Authority of Ireland needs to be in a position to assess the relative pressures of liquidity supply and demand facing individual banks.

The paper notes all the sources of wholesale liquidity available to a bank in real time for mediating wholesale payments. It discusses the various ways in which this total amount can be adjusted to take account of the fact that banks have to comply with the statutory reserve requirement of the ECB's operational framework for monetary policy.

A bank can choose to frontload or backload the fulfilment of the reserve requirement, or it can fulfil it evenly throughout the maintenance period. A risk-averse bank would tend to pursue a frontloading strategy and this has tended to happen to a greater extent in the uncertain financial environment that has prevailed since the start of the crisis.

An operational framework for monetary policy that allows required reserves to be used as intra-day liquidity for payments purposes, as in the Eurosystem, has considerable merit. The decision of the ECB Governing Council to pay a competitive interest rate on required reserves was also an important step in supporting the large-value-payments system in the euro area. This had the effect of greatly diminishing, if not eliminating entirely, the net opportunity cost of holding reserves and has accordingly helped to keep the large-value-payment system in the euro area well liquified. Furthermore, it has also helped to ensure that banks are not deterred from using the Eurosystem's real time gross settlement system which is systemically much sounder than the alternative of a deferred net settlement system but which is more demanding on liquidity.

However, the success of such a system is not guaranteed and has to be monitored on an ongoing basis. The failure of a single participant to respect an incoming payment obligation because of a liquidity constraint can give rise to a systemic chain reaction in which other participants, dependent on incoming payments, are unable to honour their own outgoing payment obligations. The purpose of this paper is to propose a mechanism to address this risk. Its aim is to derive a framework that would help to identify and calibrate the risk of liquidity constraints being encountered by an individual bank from spilling over to payments and causing gridlock in the domestic part of the wholesale payments system. To this end, it has developed a monitoring framework in the form of a ''liquidity buffer'' indicator for domestic credit institutions.

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Explanatory notes for the data produced in the Statistical Appendix, including the list of credit institutions resident in the Republic of Ireland are available in electronic format from the Statistics section of the Central Bank website: www.centralbank.ie. Further detailed tables are also published on this website.

Notice

The statistical outputs of the Central Bank are curently being updated and enhanced with a significant amount of new statistical series being made available for the first time. As a result, a number of tables have changed in the Statistical Appendix of the Quarterly Bulletin, or have been replaced. In the majority of cases, previously published series remain available in electronic format on the Central Bank website, or from other official sources. Some previously published series are presented in different formats. The majority of tables currently included in the Statistical Appendix of the Bulletin are available in electronic format on the Central Bank website, along with a more extensive suite of data covering Sections A, B, C, D and part of E above in terms of scope, frequency and length of time series available. The transition process for data published in the Statistical Appendix of the Bulletin will continue in the coming quarters, with further changes to the currently published tables likely to take place. Previously published tables, which remain broadly unchanged in the current Bulletin but whose number and title have changed as a result of the ongoing update are:

Previous Title		New Title	
C2:	Financial Statement of the Central Bank of Ireland	A.2	Financial Statement of the Central Bank of Ireland
C8:	All Credit Institutions: Sectoral Distribution of Advances	A.14	Distribution of Advances to Irish Private Sector, by Sector of Economic Activity
C9:	All Credit Institutions: Sectoral Distribution of Advances and Deposits	A.15	Distribution of Advances to Non-resident Private Sector, and Deposits from Private Sector by Sector, of Economic Activity
C13:	Analysis of Residential Mortgages *vis-à-vis* Irish Residents	A.16	Analysis of Residential Mortgages *vis-à-vis* Irish Residents
C10:	All Credit Institutions: International Business: Analysis by Currency, Sector and Maturity	A.17.1	Credit Institutions: International Business: Analysis by Currency, Sector and Maturity
C11:	All Credit Institutions: International Business: Analysis by Geographic Area	A.17.2	Credit Institutions: International Business: Analysis by Geographic Area
B1:	Official and Selected Interest Rates	B.3	Official and Selected Interest Rates
D1:	Government Debt and Government-Guaranteed Debt	E.1	Government Debt
D2:	Government Stock — Nominal Holdings	E.2	Government Stock — Nominal Holdings
B4.1:	Harmonised Competitiveness Indicators for Ireland (HCIs)	E.3	Harmonised Competitiveness Indicators for Ireland (HCIs)
B4.2:	Harmonised Competitiveness Indicators for Ireland (HCIs)	E.3	Harmonised Competitiveness Indicators for Ireland (HCIs)
B5:	Indices of Relative Wage Costs in Manufacturing Industry	E.4	Indices of Relative Wage Costs in Manufacturing Industry

Section A

Money and Banking

Table A.1: Summary Irish Private Sector Credit and Deposits

	Credit Advanced to Irish Private Sector						
	Households				Non-financial corporations		
		Loans for house purchase	Consumer loans	Other loans		Loans	Securities
	1	2	3	4	5	6	7
Outstanding amounts — € million							
2009							
July	147,326	114,164	26,970	6,192	157,389	155,905	1,484
August	142,815	110,019	26,646	6,150	157,131	155,635	1,495
September	141,327	110,146	24,764	6,416	157,079	155,429	1,650
October	140,717	110,123	24,201	6,393	155,177	153,533	1,645
November	140,256	110,130	23,906	6,220	153,997	152,517	1,481
December	140,085	110,210	23,802	6,072	146,548	145,448	1,099
2010							
January	139,762	110,055	23,711	5,996	144,015	142,933	1,082
February	139,096	109,983	23,371	5,742	141,344	140,338	1,006
March	137,345	109,434	22,154	5,756	139,527	138,570	957
April	136,222	108,470	21,986	5,766	134,182	133,254	928
May	135,707	108,224	21,857	5,626	128,538	127,620	918
June	140,188	107,676	21,437	11,076	119,379	118,471	909
July	139,200	107,385	20,705	11,110	113,830	112,934	897
Transactions — € million							
2009							
July	–416	–47	–355	–13	–412	–365	–48
August	–1,106	–738	–260	–18	–642	–657	15
September	115	338	–107	–117	832	671	161
October	–328	–192	–231	95	–206	–199	–7
November	–202	–59	–98	–45	–277	–118	–159
December	292	266	–20	46	–1,444	–1,056	–389
2010							
January	–1,020	–152	–854	–14	–741	–715	–26
February	–355	227	–415	–166	–88	–12	–76
March	–510	–190	–137	–183	–375	–326	–50
April	–1,209	–907	–326	23	–1,830	–1,798	–32
May	–253	–167	–73	–13	356	380	–23
June	–1,493	–98	–453	–942	1,042	1,047	–5
July	–716	–149	–672	105	–1,386	–1,386	–1
Growth rates — per cent							
2009							
July	1.4	3.7	–6.2	–8.7	0.6	0.7	–9.5
August	0.3	2.5	–7.0	–8.8	–1.1	–1.1	–0.3
September	0.2	1.9	–5.4	–8.9	–1.0	–1.2	10.7
October	–0.1	1.6	–6.0	–5.4	–0.9	–1.1	31.4
November	–0.9	0.9	–7.0	–7.1	–1.6	–1.4	–21.1
December	–1.1	0.6	–7.3	–6.0	–2.2	–1.7	–40.9
2010							
January	–2.2	0.1	–9.7	–10.6	–2.9	–2.4	–41.5
February	–2.4	0.2	–10.8	–12.1	–2.9	–2.5	–44.9
March	–2.6	–0.1	–10.6	–12.3	–3.3	–3.0	–37.2
April	–3.0	–1.0	–10.5	–7.7	–4.3	–3.9	–40.0
May	–3.1	–1.3	–10.1	–7.2	–4.3	–3.9	–42.3
June	–4.5	–1.5	–13.1	–22.4	–2.4	–2.0	–41.9
July	–4.7	–1.6	–14.7	–21.5	–3.3	–3.0	–40.0

Table A.1 — *continued*

Insurance corporations and pension funds/ Other financial intermediaries			Irish Private Sector Deposits				
	Loans	Securities	Total	Households	Non-financial corporations	Insurance corporations and pension funds/Other financial intermediaries	
8	9	10	11	12	13	14	
							Outstanding amounts — € million
							2009
87,720	46,559	41,161	184,987	98,903	40,316	45,768	July
90,871	44,445	46,426	187,144	99,407	42,014	45,723	August
88,564	42,863	45,701	182,782	98,076	41,262	43,444	September
88,195	42,728	45,467	185,365	98,627	41,994	44,745	October
87,153	41,894	45,260	184,703	98,258	41,442	45,003	November
88,200	43,072	45,128	183,761	99,148	40,613	44,000	December
							2010
88,340	43,355	44,985	183,525	99,488	40,248	43,788	January
87,474	40,459	47,015	185,385	99,305	39,439	46,641	February
86,622	39,452	47,169	183,625	98,115	36,717	48,793	March
90,491	39,346	51,145	184,556	98,395	36,331	49,830	April
94,920	40,297	54,622	183,987	97,891	36,980	49,116	May
96,437	41,168	55,269	180,420	97,253	37,148	46,020	June
97,026	39,879	57,148	179,345	97,046	36,387	45,913	July
							Transactions — € million
							2009
–1,215	–892	–323	1,170	444	635	92	July
4,831	–452	5,283	2,441	532	1,785	124	August
–1,474	–778	–696	559	–1,289	–607	2,456	September
–553	–251	–302	2,577	548	732	1,296	October
–587	–468	–118	–451	–347	–497	394	November
310	406	–96	–1,428	846	–222	–2,052	December
							2010
–602	–400	–202	–624	305	–502	–426	January
1,638	–488	2,126	1,775	–187	–842	2,804	February
–974	–1,117	144	–1,730	–1,196	–2,674	2,139	March
3,523	–445	3,968	708	259	–459	908	April
3,188	–271	3,459	–1,610	–607	207	–1,209	May
805	7	798	–1,844	–581	8	–1,271	June
1,662	–317	1,979	–626	–155	–544	73	July
							Growth rates — per cent
							2009
12.7	–11.2	69.6	–2.3	1.9	–6.7	–5.7	July
19.6	–11.6	93.2	–1.8	1.8	–2.0	–7.6	August
17.9	–12.5	88.4	–2.1	3.1	–1.5	–9.6	September
16.7	–12.3	80.7	2.3	1.5	–2.8	9.8	October
2.6	–13.9	27.7	2.9	2.4	–0.4	8.0	November
2.7	–10.0	19.8	0.4	1.5	–4.4	3.3	December
							2010
2.4	–10.4	19.5	2.3	1.9	–2.1	7.1	January
1.5	–10.9	16.6	3.5	1.6	–2.1	13.1	February
—	–11.5	13.1	2.8	0.6	–5.4	15.4	March
5.9	–10.8	24.5	3.2	0.3	–5.8	18.0	April
10.3	–10.7	33.3	2.0	–0.8	–5.1	14.9	May
10.2	–11.3	33.9	0.8	–1.3	–6.3	12.0	June
13.7	–10.3	39.8	–0.2	–1.9	–9.2	12.0	July

Table A.2: Financial Statement of the Central Bank of Ireland

Assets

		Gold and gold Receivables	Lending to euro area credit institutions relating to monetary policy operations in euro						
				Main refinancing operations	Longer-term refinancing operations	Fine-tuning reverse operations	Structural reverse operations	Marginal lending facility	Credits related to margin calls
Outstanding amounts — € million									
2009									
28 August	130,450	129	98,403	10,715	87,688	—	—	—	—
25 September	123,230	129	91,573	14,418	77,155	—	—	—	—
30 October	114,670	132	87,404	6,750	80,654	—	—	—	—
27 November	107,566	132	78,664	4,340	74,324	—	—	—	—
25 December	123,797	132	91,958	7,525	84,433	—	—	—	—
2010									
29 January	129,956	148	97,733	14,325	83,408	—	—	—	—
26 February	118,199	148	84,998	7,470	77,528	—	—	—	—
26 March	114,042	148	81,043	6,805	74,238	—	—	—	—
30 April	113,743	159	81,253	7,990	73,263	—	—	—	—
28 May	124,836	159	92,644	15,580	76,853	—	—	211	—
25 June	129,636	159	94,790	17,379	76,853	—	—	558	—
30 July	125,101	195	89,456	32,285	57,171	—	—	—	—
27 August	130,410	195	95,061	31,400	62,671	—	—	990	—

Liabilities

		Banknotes in circulation	Liabilities to euro area credit institutions relating to monetary policy operations in euro						Other liabilities to euro area credit institutions in euro
				Current accounts (covering the minimum reserve system)	Deposit facility	Fixed-term deposits	Deposits related to margin calls	Fine-tuning reverse operations	
Outstanding amounts — € million									
2009									
28 August	130,450	11,313	9,670	7,230	2,440	—	—	—	—
25 September	123,230	11,331	13,297	11,337	1,960	—	—	—	—
30 October	114,670	11,295	10,121	8,371	1,750	—	—	—	—
27 November	107,566	11,390	10,950	10,387	563	—	—	—	—
25 December	123,797	12,219	13,893	8,840	5,053	—	—	—	—
2010									
29 January	129,956	11,471	16,181	7,455	8,726	—	—	—	—
26 February	118,199	11,482	11,012	8,462	2,550	—	—	—	—
26 March	114,042	11,678	15,719	8,163	7,556	—	—	—	—
30 April	113,743	11,685	12,091	5,961	6,130	—	—	—	—
28 May	124,836	11,779	14,547	6,249	8,298	—	—	—	—
25 June	129,636	11,877	13,083	11,673	1,410	—	—	—	—
30 July	125,101	12,013	16,021	10,226	5,795	—	—	—	—
27 August	130,410	12,028	12,116	9,991	1,442	683	—	—	—

Table A.2 — *continued*

Other claims on euro area credit institutions in euro	Claims on euro area residents in foreign currency	Claims on non-euro area residents in euro	Claims on non-euro area residents in foreign currency	Securities of other euro area residents in euro	General government debt in euro	Other assets	
							Outstanding amounts — € million
							2009
503	2,897	1,185	1,290	14,595	—	11,448	28 August
65	2,707	1,603	1,367	14,699	—	11,087	25 September
200	125	1,527	1,310	14,861	—	9,111	30 October
330	154	1,159	1,258	15,303	—	10,566	27 November
636	132	1,037	1,278	15,150	—	13,474	25 December
							2010
479	197	1,250	1,267	15,131	—	13,751	29 January
283	201	1,421	1,264	15,241	—	14,643	26 February
318	144	1,339	1,321	15,298	—	14,431	26 March
421	138	1,199	1,414	15,512	—	13,647	30 April
489	109	1,175	1,508	16,501	—	12,251	28 May
261	137	1,282	1,477	17,219	—	14,311	25 June
495	161	1,516	1,576	16,951	—	14,751	30 July
473	181	1,388	1,558	17,176	—	14,378	27 August

Debt certificates issued	Liabilities to other euro area residents in euro	Liabilities to non-euro area residents in euro	Liabilities to euro area residents in foreign currency	Liabilities to non-euro area residents in foreign currency	Counterpart of Special Drawing Rights allocated by the IMF	Revaluation accounts	Capital and reserves	Other liabilities	
									Outstanding amounts — € million
									2009
—	30,938	4,734	—	—	773	208	1,284	71,530	28 August
—	28,319	4,554	—	—	845	208	1,284	63,392	25 September
—	30,487	3,538	—	—	838	215	1,283	56,893	30 October
—	31,673	12	—	—	838	215	1,287	51,201	27 November
—	25,759	10	—	—	838	215	1,290	69,573	25 December
									2010
—	32,106	16	—	—	844	210	1,319	67,809	29 January
—	30,265	13	—	—	844	210	1,315	63,058	26 February
—	31,286	14	—	—	844	210	1,530	52,761	26 March
—	29,299	12	—	—	874	237	1,531	58,014	30 April
—	25,048	10	—	—	874	237	1,531	70,810	28 May
—	24,898	10	—	—	874	237	1,531	77,126	25 June
—	24,483	27	—	—	934	264	1,531	69,828	30 July
—	26,714	27	—	—	934	264	1,531	76,796	27 August

Table A.4: Credit Institutions Aggregate Balance Sheet

Total Assets

		Loans to Irish residents				Holdings of securities issued by Irish residents			
			Monetary financial institutions	General government	Private sector		Monetary financial institutions	General government	Private sector
	15	16	17	18	19	20	21	22	23
Outstanding amounts — € million									
2009									
July	1,389,191	536,759	185,541	1,427	349,790	78,913	28,413	7,855	42,645
August	1,377,798	528,404	184,097	1,411	342,896	84,336	28,619	7,795	47,921
September	1,340,049	514,601	173,573	1,409	339,619	84,505	28,991	8,164	47,350
October	1,330,006	511,675	173,266	1,432	336,977	82,887	27,613	8,163	47,112
November	1,317,479	506,651	170,611	1,374	334,667	82,759	27,721	8,298	46,740
December	1,323,584	505,270	175,356	1,310	328,605	82,110	27,663	8,219	46,228
2010									
January	1,337,057	506,656	179,296	1,310	326,050	81,834	27,492	8,275	46,067
February	1,310,404	487,385	166,179	1,313	319,893	83,457	27,320	8,117	48,020
March	1,316,908	496,305	168,629	12,308	315,367	83,883	27,887	7,870	48,126
April	1,307,198	488,712	167,718	12,172	308,822	88,638	28,599	7,965	52,073
May	1,344,794	493,041	174,141	15,276	303,624	91,771	28,386	7,844	55,541
June	1,334,107	486,002	171,297	14,877	299,827	92,082	28,396	8,189	55,496
July	1,308,699	479,501	172,924	14,565	292,013	93,884	27,936	8,576	57,372

Total Liabilities

		Deposits from Irish residents				Debt securities issued		
			Monetary financial institutions	General government	Private sector	Irish resident	Euro area	Rest of world
	32	33	34	35	11	36	37	38
Outstanding amounts — € million								
2009								
July	1,389,191	365,832	177,665	3,180	184,987	46,314	31,424	95,819
August	1,377,798	369,799	179,508	3,147	187,144	48,590	30,421	99,170
September	1,340,049	354,874	168,768	3,324	182,782	50,665	28,442	100,918
October	1,330,006	357,966	169,338	3,262	185,365	49,777	27,858	102,055
November	1,317,479	356,276	168,071	3,502	184,703	51,340	28,753	99,505
December	1,323,584	358,312	171,275	3,276	183,761	50,754	26,979	101,448
2010								
January	1,337,057	361,644	175,054	3,066	183,525	50,106	28,230	104,252
February	1,310,404	350,036	161,843	2,808	185,385	50,215	28,487	104,813
March	1,316,908	351,492	164,851	3,016	183,625	56,009	29,055	104,852
April	1,307,198	353,113	165,391	3,165	184,556	56,379	28,469	106,924
May	1,344,794	357,307	169,902	3,418	183,987	55,809	28,197	102,592
June	1,334,107	351,506	168,090	2,995	180,420	54,951	26,685	99,261
July	1,308,699	350,249	167,786	3,118	179,345	53,925	26,469	92,857

Table A.4 — *continued*

Loans to non-residents		Holding of securities issued by non-residents		Central bank balances		Remaining assets		
Euro area	Rest of world	Euro area	Rest of world	Resident	Non-resident	Resident	Non-resident	
24	25	26	27	28	29	30	31	
								Outstanding amounts — € million
								2009
98,310	271,777	157,288	174,498	11,077	125	26,029	34,415	July
98,469	266,884	155,403	173,096	11,421	124	24,474	35,186	August
94,330	250,532	154,542	168,238	10,367	122	28,534	34,278	September
95,583	250,050	152,574	167,032	11,799	120	26,071	32,215	October
90,255	252,170	148,759	162,911	10,874	162	28,915	34,024	November
84,734	254,222	149,857	163,561	16,123	165	35,435	32,107	December
								2010
88,299	255,315	149,786	164,995	18,118	171	37,157	34,725	January
86,442	254,549	146,281	167,742	12,661	163	36,644	35,080	February
85,746	258,546	145,927	166,978	18,832	162	25,979	34,549	March
88,437	253,421	144,573	167,122	13,780	163	26,797	35,556	April
89,233	275,860	141,897	173,051	13,095	174	28,638	38,033	May
90,265	283,665	138,688	170,627	10,124	75	26,044	36,486	June
88,174	269,019	136,598	162,909	17,392	73	25,804	35,295	July

Deposits from non-residents		Capital & reserves		Borrowing from the Eurosystem relating to monetary policy operations	Remaining liabilities		
Euro area	Rest of world	Resident	Non-resident		Resident	Non-resident	
39	40	41	42	43	44	45	46
							Outstanding amounts — € million
							2009
221,985	344,501	54,737	31,362	114,848	39,952	42,418	July
227,651	337,254	56,833	29,945	101,206	35,390	41,539	August
218,519	333,111	56,788	28,788	88,339	38,649	40,955	September
215,262	329,541	56,654	29,225	87,404	33,598	40,639	October
210,470	330,124	55,885	29,352	77,984	35,330	42,459	November
199,688	324,936	59,174	30,841	90,899	42,193	38,361	December
							2010
203,782	321,327	59,904	31,669	95,773	40,104	40,267	January
201,455	322,282	58,369	31,441	83,048	40,118	40,140	February
203,104	319,444	57,917	30,337	82,573	40,828	41,296	March
208,378	306,162	54,637	31,236	79,293	40,125	42,483	April
223,587	314,698	54,908	32,043	90,473	40,819	44,360	May
226,949	312,566	53,573	30,346	92,340	40,110	45,819	June
226,149	306,975	52,063	29,864	89,454	36,783	43,911	July

Table A.4.1: Credit Institutions (Domestic Group) — Aggregate Balance Sheet

Total Assets

		Loans to Irish residents				Holdings of securities issued by Irish residents			
			Monetary financial institutions	General government	Private sector		Monetary financial institutions	General government	Private sector
	15	16	17	18	19	20	21	22	23
Outstanding amounts — € million									
2009									
July	839,862	475,687	139,310	606	335,771	58,610	14,483	7,561	36,565
August	830,887	467,057	137,236	590	329,231	64,082	14,709	7,501	41,872
September	804,203	455,407	128,707	588	326,111	64,376	15,095	7,870	41,411
October	798,301	453,404	129,135	612	323,657	63,028	13,824	7,870	41,335
November	793,949	447,996	125,940	554	321,502	63,298	13,980	8,004	41,314
December	798,244	442,714	129,073	497	313,143	62,915	14,045	8,076	40,793
2010									
January	808,046	441,955	130,912	501	310,542	62,748	13,862	8,132	40,754
February	787,485	429,331	124,524	503	304,304	64,943	14,157	7,974	42,813
March	791,662	438,276	126,921	11,499	299,856	65,254	14,530	7,755	42,969
April	777,901	429,032	124,341	11,363	293,327	70,049	15,251	7,850	46,947
May	791,730	430,974	129,092	14,471	287,412	73,309	15,180	7,729	50,400
June	782,416	424,367	127,406	14,079	282,882	74,339	15,215	8,075	51,050
July	776,103	418,280	128,814	13,769	275,697	76,226	14,750	8,461	53,015

Total Liabilities

		Deposits from Irish residents				Debt securities issued		
			Monetary financial institutions	General government	Private sector	Irish resident	Euro area	Rest of the world
	32	33	34	35	11	36	37	38
Outstanding amounts — € million								
2009								
July	839,862	315,558	136,265	3,145	176,148	34,210	15,281	39,448
August	830,887	318,181	137,317	3,136	177,728	36,491	14,186	42,555
September	804,203	307,201	129,639	3,320	174,242	38,688	11,946	46,878
October	798,301	312,605	132,432	3,260	176,912	37,795	11,211	48,188
November	793,949	311,338	131,716	3,502	176,120	39,316	12,429	47,824
December	798,244	310,657	131,137	3,276	176,244	38,830	12,037	47,220
2010								
January	808,046	312,198	133,932	3,064	175,201	38,152	14,349	47,015
February	787,485	306,976	127,283	2,806	176,887	38,806	14,417	48,033
March	791,662	308,369	130,326	3,016	175,027	44,526	15,288	49,087
April	777,901	308,788	130,221	3,160	175,407	44,890	15,014	50,830
May	791,730	309,968	132,707	3,417	173,843	44,316	14,482	48,939
June	782,416	306,320	132,383	2,995	170,941	43,555	13,644	46,857
July	776,103	304,471	131,367	3,112	169,991	42,464	13,408	42,263

Table A.4.1 — *continued*

Loans to non-residents		Holding of securities issued by non-residents		Central bank balances		Remaining assets		
Euro area	Rest of the world	Euro area	Rest of the world	Resident	Non-resident	Resident	Non-resident	
24	25	26	27	28	29	30	31	
								Outstanding amounts — € million
								2009
10,980	170,194	28,323	58,366	6,607	..	21,882	9,213	July
11,554	165,886	28,174	57,136	7,239	..	20,253	9,505	August
10,589	149,686	27,499	55,033	7,962	..	24,543	9,107	September
10,594	151,706	26,505	54,002	8,068	..	21,792	9,202	October
10,626	151,326	26,178	52,689	7,564	..	24,635	9,636	November
9,786	151,044	26,760	53,277	11,568	..	31,164	9,017	December
								2010
12,466	154,513	26,170	52,949	14,810	2	32,943	9,490	January
11,669	152,469	25,507	51,724	9,504	2	32,376	9,959	February
11,314	152,921	24,510	51,285	15,753	2	21,939	10,409	March
11,838	148,501	23,521	51,155	10,696	2	22,656	10,452	April
11,428	157,650	22,541	50,758	9,658	2	23,995	11,414	May
10,904	161,884	22,198	50,086	6,168	2	21,878	10,590	June
10,335	157,269	21,709	48,159	11,922	2	21,974	10,226	July

Deposits from non-residents		Capital & reserves		Borrowing from the Eurosystem relating to monetary policy operations	Remaining liabilities		
Euro area	Rest of the world	Resident	Non-resident		Resident	Non-resident	
39	40	41	42	43	44	45	46
							Outstanding amounts — € million
							2009
33,134	227,128	38,412	12,746	72,781	33,001	18,163	July
33,596	221,331	39,947	11,742	67,396	28,959	16,504	August
32,697	213,596	41,427	10,591	54,279	31,033	15,866	September
31,060	210,357	39,123	10,954	52,899	26,900	17,209	October
30,589	211,281	39,493	10,799	45,069	27,889	17,923	November
26,372	202,181	40,877	11,779	58,474	35,418	14,398	December
							2010
29,375	202,434	41,104	12,249	64,323	32,974	13,873	January
27,923	198,424	39,238	11,711	53,883	34,109	13,962	February
25,106	194,294	39,441	10,959	54,073	34,460	16,059	March
24,599	186,281	36,015	11,807	50,323	33,285	16,067	April
25,018	193,937	34,950	11,624	59,523	32,464	16,510	May
24,183	192,759	32,619	11,314	59,811	35,104	16,250	June
29,799	194,251	31,710	10,991	58,319	32,620	15,808	July

Table A.14: Distribution of Advances to Irish Private Sector by Sector of Economic Activity

€ million	Resident Non-Government Credit	
	March 2010	June 2010
1. Agriculture and forestry	4,546	4,797
1.1 Farming of cattle and other animals	1,719	1,844
1.2 Dairy farming	1,170	1,114
1.3 Other agricultural activities	1,437	1,674
1.4 Forestry and logging	220	166
2. Fishing	318	310
3. Mining and quarrying	387	433
4. Manufacturing	6,568	6,443
4.1 Food products derived from agricultural activities	1,991	2,063
4.1.1 Processing of meat	281	269
4.1.2 Processing of dairy products and other food products	1,711	1,795
4.2 Food (non-agricultural activities)/beverages/tobacco	688	680
4.3 Textiles, textile products, leather and leather products	65	64
4.4 Wood, pulp, paper products, publishing/printing	1,066	971
4.5 Chemicals, man-made fibres, rubber/plastic products	577	562
4.6 Machinery/equipment	703	629
4.7 Computers and office machinery	41	39
4.8 Other manufacturing	1,436	1,435
5. Electricity, gas and water supply	767	806
6. Construction	12,659	9,966
7. Wholesale/retail trade & repairs	11,891	11,747
7.1 Sale/maintenance/repair of vehicles; retail sale of fuel	1,950	1,911
7.2 Wholesale/commission trade (except vehicles)	2,552	2,482
7.3 Retail trade/repair of personal/household goods	6,157	6,059
7.4 Other wholesale/retail, not included elsewhere	1,231	1,294
8. Hotels and restaurants	10,578	9,970
8.1 Hotels	6,172	5,683
8.2 Restaurants	745	711
8.3 Public Houses	3,131	3,035
8.4 Other accommodation and catering	530	541
9. Transport, storage and communications	2,707	2,842

Table A.14 — *continued*

€ million		Resident Non-Government Credit	
		March 2010	June 2010
10.	**Financial intermediation**	83,857	93,238
10.1	Financial leasing	1,703	1,783
10.2	Non-bank credit grantors, including credit unions	12,991	13,280
10.3	Investment and unit trusts	242	217
10.4	Holding companies	1,609	1,707
10.5	Hire-purchase finance companies	958	873
10.6	Life insurance companies	4,086	4,438
10.7	Pension funds	239	235
10.8	Non-life insurance companies	544	511
10.9	Security broker/Fund management	5,595	5,413
10.10	Other financial intermediation	55,891	64,779
11.	**Real estate and business activities**	86,971	76,152
11.1	Real estate activities	81,089	71,112
11.2	Computer and related services	156	162
11.3	Research and development	32	33
11.4	Legal, accounting and consulting	1,798	1,725
11.5	Advertising	56	47
11.6	Other business activities	3,839	3,074
12.	**Education (Schools and Colleges)**	815	864
13.	**Health and social work**	2,463	2,461
14.	**Other Community, Social & Personal Services**	2,658	2,550
14.1	Recreational, cultural, sporting and other service activities	2,480	2,345
14.2	Churches/religious organisations and charities	178	205
15.	**Personal (private households) and charities**	127,070	123,706
15.1	House mortgage finance	109,144	107,431
15.1.1	Principal dwelling houses	79,311	78,200
15.1.2	Buy-to-Let residential properties	28,580	28,032
15.1.3	Holiday homes/second houses	1,253	1,199
15.2	Other housing finance	526	494
15.3	Finance for investment	2,064	1,927
15.4	Other personal	15,336	13,854
Total		354,255	346,286

Table A.15: Distribution of Advances to Non-resident Private Sector and Deposits from Private Sector by Sector of Economic Activity

€ million	March 2010		
	Non-resident non-Government credit	Non-resident non-Government deposits	Resident non-Government deposits
1. Agriculture and Forestry	46	47	2,344
2. Fishing	11	0	104
3. Mining and quarrying	562	232	294
4. Manufacturing	6,631	3,462	5,271
5. Electricity, gas and water supply	9,811	873	994
6. Construction	3,247	385	3,277
7. Wholesale/retail trade & repairs	1,973	2,303	4,246
8. Hotels and restaurants	1,369	92	620
9. Transport, storage and communications	18,893	3,241	3,683
10. Financial intermediation	156,594	84,123	49,475
11. Real estate and business activities	24,734	3,025	12,217
12. Education (Schools and Colleges)	1,624	98	1,795
13. Health and social work	3,327	119	1,033
14. Other Community, Social & Personal Services	1,329	1,495	4,860
15. Personal (private households)	4,477	4,190	80,860
Total	234,629	103,687	171,074

Table A.15 — *continued*

€ million	June 2010		
	Non-resident non-Government credit	Non-resident non-Government deposits	Resident non-Government deposits
1. Agriculture and Forestry	72	28	2,195
2. Fishing	6	0	99
3. Mining and quarrying	583	363	318
4. Manufacturing	6,236	3,932	5,876
5. Electricity, gas and water supply	10,149	359	856
6. Construction	3,126	441	3,060
7. Wholesale/retail trade & repairs	1,906	2,246	4,477
8. Hotels and restaurants	1,179	123	657
9. Transport, storage and communications	20,332	5,233	3,728
10. Financial intermediation	162,012	82,215	46,656
11. Real estate and business activities	25,126	3,349	12,139
12. Education (Schools and Colleges)	1,516	82	1,708
13. Health and social work	3,465	93	1,133
14. Other Community, Social & Personal Services	1,333	1,516	4,793
15. Personal (private households)	4,349	3,863	80,209
Total	241,392	103,844	167,902

Table A.16: Analysis of Residential Mortgages *vis-à-vis* Irish Residents

€ million	Variable rate	Fixed rate	*of which:*			Total
			Over 1 and up to 3 years	Over 3 and up to 5 years	Over 5 years	
2002						
31 December	33,137	10,279	5,475	2,698	2,106	43,416
2003						
31 March	34,716	10,767	6,219	2,552	1,996	45,483
30 June	36,467	10,445	6,034	2,539	1,871	46,912
30 September	40,318	10,299	6,642	2,348	1,309	50,617
31 December	44,007	10,607	7,077	2,299	1,231	54,614
2004						
31 March	46,809	11,083	7,220	2,176	1,687	57,892
30 June	50,843	10,994	7,444	1,930	1,620	61,837
30 September	55,731	12,887	9,313	1,880	1,694	68,618
31 December	60,563	12,557	9,234	1,673	1,650	73,120
2005						
31 March	64,448	12,359	9,065	1,633	1,661	76,807
30 June	69,961	12,269	8,994	1,681	1,594	82,230
30 September	75,605	12,522	9,032	1,827	1,664	88,127
30 December	79,720	14,539	10,171	2,553	1,815	94,259
2006						
31 March	84,045	16,037	11,731	2,682	1,623	100,082
30 June	87,124	17,214	12,071	3,333	1,810	104,338
29 September	89,257	18,708	12,667	4,074	1,967	107,965
29 December	90,355	20,247	12,793	5,306	2,148	110,603
2007						
30 March	88,480	23,878	15,236	6,295	2,347	112,358
29 June	88,461	27,243	19,774	4,944	2,525	115,704
28 September	90,880	29,642	20,060	6,952	2,630	120,522
31 December	92,657	30,345	20,811	6,979	2,555	123,002
2008						
31 March	94,026	30,359	20,662	7,115	2,582	124,385
30 June	93,034	27,535	17,932	7,016	2,587	120,569
30 September	95,730	27,314	17,090	7,449	2,775	123,045
31 December	91,433	22,857	13,272	6,878	2,707	114,290
2009						
31 March	93,805	19,832	10,590	6,409	2,833	113,637
30 June	95,777	18,083	9,243	6,160	2,680	113,860
30 September	93,510	16,254	7,781	5,913	2,559	109,764
31 December	94,813	15,073	6,906	5,715	2,452	109,886
2010						
31 March	93,541	15,603	6,899	5,677	3,026	109,144
30 June	92,003	15,490	7,608	6,307	1,576	107,493

Notes:

1. Data relate to residential mortgages as reported on the balance sheets of within-the-State offices of credit institutions, i.e., mortgages extended on a cross-border basis are not included. The total reported above is the same figure as that reported *vis-à-vis* Irish residents under item 5.6 (Assets) of *Table C3: Credit Institutions: Aggregate Balance Sheet* and so does not include securitised mortgages.
2. Variable rate includes fixed rate mortgages of up to and including 1 year.
3. Fixed rate mortgages are classified according to the term over which the interest rate is fixed and not the term of the mortgage, e.g., a 20-year mortgage with a two-year fixed interest rate is included under *Fixed Rate: Over 1 and up to 3 years.*

Table A.17.1: All Credit Institutions: International Business: Analysis by Currency, Sector and Maturity

€ million	31 March 2010	30 June 2010
Assets		
1. Analysis by currency		
Irish residents in non-euro	65,112	69,992
US dollar	28,738	30,634
Sterling	26,967	28,335
Other	9,407	11,022
Non-residents in non-euro	358,750	382,567
US dollar	148,590	147,116
Sterling	160,745	195,599
Other	49,415	39,852
Non-Residents in euro	295,797	292,449
2. Analysis by sector		
Irish residents in non-euro		
Monetary financial institutions	27,899	31,733
Non-monetary financial institutions	37,214	38,259
Non-residents in non-euro		
Monetary financial institutions	165,542	181,326
non-monetary financial institutions	193,208	201,240
Non-Residents in euro		
Monetary financial institutions	149,887	153,777
non-monetary financial institutions	145,910	138,672
3. Total international business	**719,659**	**745,007**

Note: Data in this table are currently being collected under new reporting arrangements. As these new arrangements are still in the implementation phase, some estimation has been necessary.

Table A.17.1 — *continued*

€ million	31 March 2010	30 June 2010
Liabilities		
1. Analysis by currency		
Irish residents in non-euro	50,506	53,146
US dollar	24,404	25,277
Sterling	15,790	16,708
Other	10,313	11,162
Non-residents in non-euro	297,024	311,015
US dollar	143,866	143,488
Sterling	115,261	128,106
Other	37,897	39,421
Non-Residents in euro	365,369	358,819
2. Analysis by sector		
Irish residents in non-euro		
Monetary financial institutions	30,398	32,415
Non-monetary financial institutions	20,109	20,731
Non-residents in non-euro		
Monetary financial institutions	219,101	230,815
non-monetary financial institutions	77,923	80,200
Non-Residents in euro		
Monetary financial institutions	303,467	301,565
non-monetary financial institutions	61,903	57,253
3. Total international business	**712,900**	**722,980**

Table A.17.2: All Credit Institutions: International Business: Analysis by Geographic Area

€ million	Liabilities			Assets			
	Denominated in:			Denominated in:			
	Euro	Non–euro	Total	Euro	Non–euro	Total	Net external liabilities[a]
	March 2010						
1. EU countries	**330,198**	**267,279**	**597,477**	**278,125**	**272,605**	**550,731**	**+61,352**
MU countries	**185,324**	**97,532**	**282,856**	**205,241**	**90,878**	**296,119**	**+1,343**
Austria	2,450	558	3,009	3,273	1,118	4,392	–1,383
Belgium	40,277	12,175	52,452	7,470	1,212	8,682	+43,770
Luxembourg	2,580	959	3,539	5,296	2,727	8,023	–4,484
Finland	39	81	120	1,285	447	1,732	–1,612
France	25,997	4,409	30,406	24,144	2,897	27,041	+3,364
Germany	97,168	14,999	112,168	31,227	4,364	35,591	+76,576
Greece	18	19	37	5,426	354	5,780	–5,744
Ireland	—	50,506	50,506	—	65,112	65,112	—
Italy	3,540	1,071	4,611	63,605	5,858	69,464	–64,852
Netherlands	8,281	11,856	20,137	18,309	3,903	22,212	–2,075
Portugal	337	90	427	5,667	132	5,799	–5,371
Spain	3,347	154	3,501	36,680	2,327	39,007	–35,506
Other MU[b]	1,289	654	1,943	2,858	425	3,283	–1,340
Other EU	**144,874**	**169,747**	**314,621**	**72,884**	**181,728**	**254,612**	**+60,009**
Denmark	10,861	649	11,510	7,505	1,745	9,250	+2,260
Sweden	370	539	909	1,576	2,413	3,988	–3,079
United Kingdom	133,084	168,432	301,516	57,009	171,890	228,899	+72,616
Other EU	559	127	686	6,795	5,679	12,474	–11,788
2. Other Europe	**4,018**	**8,882**	**12,900**	**3,110**	**11,971**	**15,081**	**–2,181**
Switzerland	2,846	8,442	11,288	239	6,645	6,884	+4,404
Other Europe	1,172	440	1,612	2,871	5,326	8,197	–6,585
3. Other Industrial Countries	**21,244**	**45,969**	**67,213**	**11,520**	**120,772**	**132,292**	**–65,079**
Australia, New Zealand, South Africa	137	959	1,097	2,244	7,213	9,457	–8,361
Canada	815	8,721	9,536	1,621	8,637	10,258	–723
Japan	112	229	341	583	11,028	11,611	–11,270
United States	20,179	36,060	56,239	7,072	93,893	100,966	–44,727
4. Offshore Centres	**6,808**	**21,461**	**28,269**	**1,134**	**9,802**	**10,935**	**+17,334**
5. Other	**3,101**	**3,940**	**7,041**	**1,908**	**8,712**	**10,619**	**–3,579**
6. Total international business	**365,369**	**347,530**	**712,900**	**295,797**	**423,862**	**719,659**	**+7,847**

a Net external liabilities are based on the selected assets and liabilities which are included in this table. A plus sign denotes net external liabilities; a minus sign net external assets.

b Positions *vis-à-vis* the Slovenia, Cyprus, Malta and Slovakia are not statistically significant.

Table A.17.2 — *continued*

Liabilities			Assets			
Denominated in:			Denominated in:			
Euro	Non–euro	Total	Euro	Non–euro	Total	Net external liabilities[a]
June 2010						
339,570	**292,862**	**632,432**	**274,409**	**291,641**	**566,050**	**+83,228**
195,036	**111,924**	**306,960**	**200,364**	**96,385**	**296,749**	**+27,056**
1,135	545	1,680	3,038	1,099	4,137	–2,457
41,830	17,526	59,356	6,763	1,528	8,291	+51,065
2,172	971	3,143	6,645	2,246	8,890	–5,747
123	63	186	1,275	529	1,805	–1,619
22,496	5,017	27,514	27,256	4,718	31,975	–4,461
105,884	19,859	125,743	30,136	4,877	35,014	+90,729
9	20	30	3,707	401	4,108	–4,079
—	53,146	53,146	—	69,992	69,992	—
8,577	1,366	9,943	62,289	6,624	68,913	–58,970
8,239	12,101	20,340	16,488	2,074	18,561	+1,779
149	33	182	4,961	5	4,965	–4,784
2,852	651	3,502	34,997	1,771	36,768	–33,265
1,569	626	2,195	2,809	521	3,331	–1,136
144,534	**180,938**	**325,473**	**74,045**	**195,256**	**269,301**	**+56,172**
8,218	538	8,756	3,592	1,714	5,306	+3,450
161	445	606	965	1,889	2,854	–2,248
135,474	179,842	315,316	63,037	185,244	248,281	+67,035
682	113	794	6,451	6,408	12,860	–12,065
3,978	**7,170**	**11,148**	**3,415**	**10,996**	**14,411**	**–3,264**
3,103	6,879	9,982	382	6,214	6,595	+3,387
875	291	1,166	3,033	4,783	7,816	–6,650
56,084	**40,701**	**46,309**	**11,535**	**130,128**	**141,663**	**–95,354**
109	395	504	1,917	7,129	9,046	–8,542
860	9,140	10,000	1,197	8,976	10,173	–173
119	270	389	592	12,314	12,906	–12,517
4,520	30,897	35,417	7,828	101,709	109,538	–74,121
4,638	**19,292**	**23,930**	**473**	**10,611**	**11,084**	**+12,846**
5,025	**4,137**	**9,161**	**2,616**	**9,183**	**11,799**	**–2,638**
358,819	**364,162**	**722,980**	**292,449**	**452,558**	**745,007**	**–5,181**

Section B

Interest Rates

Table B.1.1: Retail Interest Rates — Deposits, Outstanding Amounts

	Households				Non-financial corporations		
	Overnight	Redeemable at notice	With agreed maturity		Overnight	With agreed maturity	
			Up to 2 years	Over 2 years		Up to 2 years	Over 2 years
Rates (%)							
2009							
July	0.59	2.29	3.51	2.41	0.36	2.21	1.30
August	0.60	2.29	3.49	2.49	0.29	2.10	1.15
September	0.63	2.21	3.46	2.37	0.30	2.09	0.97
October	0.63	2.22	3.38	2.38	0.30	2.02	0.94
November	0.64	2.24	3.28	1.98	0.30	2.05	0.92
December	0.64	2.30	3.23	2.03	0.32	2.03	0.90
2010							
January	0.66	2.28	3.13	2.02	0.32	2.04	0.82
February	0.62	2.29	3.09	2.01	0.33	1.95	0.82
March	0.65	2.33	3.03	1.95	0.23	2.01	0.82
April	0.63	2.31	2.90	2.02	0.23	2.05	0.82
May	0.60	2.23	2.88	1.99	0.20	2.03	0.72
June	0.65	2.23	2.86	1.91	0.17	1.98	0.73
July	0.64	2.23	2.88	1.67	0.15	2.01	0.77
Volumes (€ million)							
2009							
July	37,101	13,664	33,228	3,069	17,561	22,037	3,080
August	37,844	14,143	32,766	2,970	18,995	22,445	3,103
September	36,721	14,551	32,275	3,038	18,740	22,062	3,047
October	37,660	14,883	31,621	3,015	19,136	21,836	3,042
November	37,465	15,314	30,935	3,150	19,202	21,487	2,927
December	37,847	15,698	30,901	3,290	19,459	21,164	2,900
2010							
January	37,943	16,030	30,623	3,361	18,993	20,263	2,846
February	37,814	16,340	30,489	3,345	18,215	20,683	2,823
March	36,858	16,581	30,080	3,339	15,909	20,698	2,793
April	37,321	16,978	29,872	3,283	16,053	19,863	2,737
May	37,016	17,226	29,365	3,176	16,035	19,951	2,715
June	36,281	17,305	29,352	3,179	16,487	19,412	2,701
July	36,292	17,303	29,216	3,211	16,188	19,414	2,673

Notes: The interest rate and volume data refer to euro-denominated deposits and loans *vis-à-vis* households and non-financial corporations resident in Ireland and other Monetary Union Member States. Rates reported are weighted averages for each instrument category.

Data are representative of resident offices of banks and building societies. Credit union data are not included in the interest rates tables.

Table B.1.2: Retail Interest Rates — Loans, Outstanding Amounts

	Households						
	Overdrafts	Loans for house purchases with original maturity			Consumer loans and other loans with original maturity		
		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Up to 1 year	Over 1 and up to 5 years	Over 5 years
Rates (%)							
2009							
July	12.40	2.86	2.77	2.84	7.07	5.87	4.10
August	12.51	2.80	2.73	2.83	7.10	5.81	3.97
September	12.64	2.80	2.70	2.73	7.07	6.01	3.97
October	12.71	2.77	2.74	2.67	7.06	5.88	3.92
November	12.66	2.76	2.72	2.66	7.01	5.85	3.89
December	12.60	2.75	2.67	2.68	7.06	5.86	3.90
2010							
January	12.60	2.81	2.67	2.66	6.93	5.85	3.88
February	12.84	2.75	2.69	2.70	7.02	5.99	3.90
March	12.66	2.84	2.73	2.72	7.07	6.15	3.97
April	12.93	2.86	2.72	2.85	7.11	6.17	4.20
May	12.90	2.84	2.75	2.88	7.22	6.18	4.18
June	12.99	2.99	2.78	2.76	7.25	5.74	4.03
July	13.47	3.01	2.79	2.77	7.33	5.78	4.06
Volumes (€ million)							
2009							
July	2,900	1,143	2,184	110,241	7,821	9,760	9,093
August	2,881	1,106	2,175	106,169	7,645	9,634	9,017
September	2,788	1,102	2,146	106,346	7,489	8,173	9,042
October	2,758	1,091	2,113	106,364	7,413	8,155	8,825
November	2,743	1,052	2,128	106,399	7,559	7,900	8,581
December	2,739	1,019	2,109	106,525	7,315	7,758	8,582
2010							
January	2,728	998	2,070	106,414	7,548	7,300	8,841
February	2,686	1,025	2,049	106,359	7,430	7,131	8,640
March	2,704	961	1,767	106,258	6,870	6,644	8,457
April	2,653	1,011	1,726	105,219	6,836	6,602	8,432
May	2,612	943	1,703	105,056	6,720	6,416	8,472
June	2,845	881	1,647	104,620	7,730	8,326	10,569
July	2,847	853	1,594	104,427	7,139	8,358	10,638

Notes: The interest rate and volume data refer to euro-denominated deposits and loans *vis-à-vis* households and non-financial corporations resident in Ireland and other Monetary Union Member States. Rates reported are weighted averages for each instrument category.

Data are representative of resident offices of banks and building societies. Credit union data are not included in the interest rates tables.

Table B.1.2 — *continued*

Non-financial corporations

Overdrafts	Loans with original maturity			
	Up to 1 year	Over 1 and up to 5 years	Over 5 years	
				Rates (%)
				2009
5.79	3.32	3.50	3.19	July
5.80	3.23	3.36	3.11	August
5.75	3.10	3.30	3.00	September
5.75	3.01	3.26	2.96	October
5.69	3.05	3.23	2.95	November
5.75	3.04	3.23	2.98	December
				2010
5.74	3.02	3.17	2.96	January
5.77	3.00	3.15	2.95	February
5.89	3.08	3.23	2.92	March
5.97	3.03	3.19	2.90	April
5.81	2.98	3.20	2.88	May
5.34	3.03	3.07	2.85	June
5.39	3.10	3.03	2.90	July
				Volumes (€ million)
				2009
5,643	47,045	52,984	59,021	July
5,570	47,041	53,406	58,412	August
5,635	49,232	51,733	57,869	September
5,371	50,372	51,328	55,131	October
5,497	49,806	51,200	55,122	November
5,376	47,787	46,896	54,409	December
				2010
5,302	47,647	46,377	52,137	January
5,271	47,375	46,066	50,583	February
5,299	42,247	44,987	54,588	March
5,207	40,905	41,802	53,973	April
5,114	38,451	40,061	52,255	May
6,041	32,306	37,442	51,096	June
6,166	30,249	36,165	49,760	July

Table B.2.1: Retail Interest Rates and Volumes — Loans and Deposits, New Business

	Loans						
	Households						
	For house purchases			For consumption purposes			For other purposes
	Floating rate and up to 1 year fixation	Over 1 year fixation	APRC	Floating rate and up to 1 year fixation	Over 1 year fixation	APRC	
Rates (%)							
2009							
July	2.72	3.60	2.88	4.27	9.61	5.33	3.45
August	2.62	3.56	2.81	4.22	9.70	5.21	3.51
September	2.62	3.65	2.85	4.47	9.68	5.44	4.06
October	2.67	3.60	2.86	4.05	9.83	5.12	3.79
November	2.61	3.58	2.78	4.65	10.01	5.56	3.51
December	2.61	3.57	2.80	3.63	9.65	4.23	2.72
2010							
January	2.57	3.54	2.76	5.44	9.74	6.28	2.94
February	2.75	3.39	2.94	5.63	9.99	6.40	3.25
March	2.77	3.51	3.03	5.10	10.01	5.93	4.53
April	2.82	3.66	3.23	5.85	9.48	6.85	3.92
May	2.75	3.83	3.14	5.30	9.76	6.34	3.86
June	2.83	3.89	3.10	4.23	10.28	5.13	3.76
July	2.81	3.82	3.08	6.14	10.50	7.23	3.53
Volumes (€ million)							
2009							
July	2,195	356	..	332	80	..	143
August	1,594	397	..	308	67	..	113
September	1,696	335	..	291	66	..	89
October	1,765	358	..	288	80	..	78
November	1,669	322	..	286	60	..	114
December	1,597	306	..	418	49	..	261
2010							
January	1,390	264	..	235	58	..	163
February	1,399	498	..	288	59	..	116
March	1,771	846	..	345	68	..	456
April	1,572	1,923	..	177	69	..	70
May	1,442	1,158	..	206	65	..	74
June	1,365	435	..	295	52	..	58
July	1,353	490	..	153	55	..	79

Notes: The interest rate and volume data refer to euro-denominated deposits and loans *vis-à-vis* households and non-financial corporations resident in Ireland and other Monetary Union Member States. Rates reported are weighted averages for each instrument category.

Data are representative of resident offices of banks and building societies. Credit union data are not included in the interest rates tables.

Table B.2.1 — *continued*

Loans				Deposits		
Non-financial corporations						
Loans up to €1 million		Loans over €1 million		Households	Non-financial corporations	
Floating rate and up to 1 year fixation	Over 1 year fixation	Floating rate and up to 1 year fixation	Over 1 year fixation	With agreed maturity	With agreed maturity	
						Rates (%)
						2009
3.89	4.24	3.03	2.53	1.48	1.22	July
3.58	4.23	3.01	3.66	1.40	1.02	August
3.50	4.39	2.71	2.29	1.23	1.00	September
3.59	4.35	2.71	2.74	1.33	0.96	October
3.94	4.35	2.59	2.88	1.49	0.94	November
3.32	4.27	2.50	3.88	1.62	1.12	December
						2010
3.81	4.39	2.68	2.83	1.57	1.10	January
3.81	4.67	2.89	2.73	1.62	1.04	February
3.67	4.71	2.54	2.52	1.59	1.05	March
3.82	4.63	2.74	1.94	1.51	1.14	April
3.75	4.60	2.87	2.57	1.51	1.09	May
3.71	4.10	2.80	3.16	1.45	1.04	June
3.73	4.44	2.66	2.56	1.55	1.27	July
						Volumes (€ million)
						2009
897	121	7,028	191	13,029	12,485	July
646	93	4,934	253	10,578	11,180	August
642	93	4,122	235	11,882	11,858	September
542	86	3,651	184	11,325	10,300	October
627	85	2,761	252	11,461	10,579	November
1,022	74	7,219	631	11,021	11,042	December
						2010
389	68	1,899	196	10,080	9,128	January
473	80	1,325	346	10,263	8,999	February
618	79	4,082	171	11,335	10,863	March
473	81	1,926	410	10,616	8,578	April
547	72	2,183	187	10,191	8,260	May
635	180	2,615	183	10,472	8,422	June
510	75	2,776	326	9,953	7,858	July

Table B.3: Official and Selected Interest Rates

	Eurosystem official interest rates			Interbank market				Clearing banks' prime rates
	Marginal lending facility	Deposit facility	Main refinancing operations	Eonia (overnight)	1 month Euribor	3 month Euribor	12 month Euribor	Ireland
2009								
July	1.75	0.25	1.00	0.36	0.53	0.89	1.36	0.95-2.20
August	1.75	0.25	1.00	0.34	0.48	0.82	1.30	0.75-2.10
September	1.75	0.25	1.00	0.53	0.44	0.75	1.24	0.70-2.10
October	1.75	0.25	1.00	0.40	0.42	0.72	1.24	0.70-2.00
November	1.75	0.25	1.00	0.43	0.47	0.72	1.23	0.70-2.00
December	1.75	0.25	1.00	0.41	0.45	0.70	1.25	0.75-2.00
2010								
January	1.75	0.25	1.00	0.33	0.43	0.67	1.23	0.70-2.00
February	1.75	0.25	1.00	0.32	0.42	0.66	1.22	0.65-2.00
March	1.75	0.25	1.00	0.40	0.40	0.63	1.21	0.65-1.90
April	1.75	0.25	1.00	0.34	0.41	0.66	1.24	0.65-2.00
May	1.75	0.25	1.00	0.33	0.43	0.70	1.26	0.65-2.00
June	1.75	0.25	1.00	0.54	0.49	0.77	1.31	0.65-2.00
July	1.75	0.25	1.00	0.42	0.65	0.90	1.42	0.85-2.20

Note: 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.

Section C

Other Financial Data

Table C.1: Investment Funds Aggregate Balance Sheet

	Total Assets						
		Deposit and loan claims			Securities other than shares		
		Domestic Total	OMUMs' total	ROW total	Domestic Total	OMUMs' total	ROW total
Outstanding amounts — € million							
2008							
December	349,931	4,375	1,141	11,547	1,743	32,188	63,843
2009							
March	348,190	6,238	1,260	13,615	3,398	31,856	61,358
June	375,897	5,685	1,865	12,610	3,065	29,634	79,157
September	414,566	4,991	2,474	12,936	4,123	34,227	87,934
December	458,630	4,613	2,534	13,193	4,596	34,855	109,592
2010							
March	510,571	4,448	2,484	12,604	5,918	33,115	120,299
Transactions — € million							
2009							
March	7,972	1,770	123	1,949	1,741	–451	–2,441
June	–5,828	–1,019	605	–3,896	–496	–2,990	17,909
September	12,333	–687	611	–202	1,218	3,699	8,021
December	15,831	–348	10	–650	77	–1,763	14,907
2010							
March	25,062	–197	–41	–1,068	1,579	–2,806	6,528

	Total Liabilities								
		Investment fund shares/units							
		Domestic MFIs	Domestic non-MFIs	Domestic total	OMUMs' MFI	OMUMs' non-MFI	OMUMs' total	ROW total	Total
Outstanding amounts — € million									
2008									
December	349,931	312	20,506	20,818	1,849	121,433	123,283	185,388	329,489
2009									
March	348,190	304	21,934	22,237	1,796	117,954	119,750	189,370	331,357
June	375,897	5,305	20,053	25,357	24,686	93,317	118,003	213,718	357,078
September	414,566	5,043	19,065	24,108	28,289	106,934	135,223	237,393	396,724
December	458,630	5,796	21,908	27,703	32,221	121,797	154,018	259,419	441,141
2010									
March	510,571	7,132	26,961	34,093	33,933	128,271	162,204	288,097	484,395
Transactions — € million									
2009									
March	7,972	–3	1,802	1,799	–4	–240	–243	9,298	10,854
June	–5,828	4,607	–3,372	1,235	19,958	–35,721	–15,764	6,995	–7,534
September	12,333	–475	–1,797	–2,272	1,480	5,594	7,074	9,141	13,943
December	15,831	325	1,227	1,551	2,382	9,005	11,387	5,158	18,096
2010									
March	25,062	598	2,262	2,860	–89	–338	–427	13,605	16,038

Table C.1 — *continued*

Shares and other equity			Investment fund shares/units (incl. MMF shares)			Non-financial assets			Other assets	
Domestic Total	OMUMs' total	ROW total	Domestic Total	OMUMs' total	ROW total	Domestic Total	OMUMs' total	ROW total	Total	
										Outstanding amounts — € million
										2008
7,721	29,342	115,502	24,595	3,488	27,796	5,437	249	2,266	18,699	December
										2009
13,549	23,113	125,530	21,124	1,965	23,818	3,305	268	5,600	12,193	March
8,782	25,725	134,295	25,714	3,526	17,861	8,876	289	5,936	12,877	June
9,915	31,883	152,107	25,247	4,138	17,478	6,881	311	8,134	11,789	September
9,018	33,188	168,351	25,863	4,557	20,094	8,290	270	7,744	11,870	December
										2010
10,390	35,532	186,836	29,445	4,950	20,395	16,242	524	14,934	12,455	March
										Transactions — € million
										2009
5,850	–3,435	14,154	–2,446	–1,494	–2,707	–2,065	26	3,519	–6,123	March
–5,794	–1,039	–12,456	4,337	852	–6,859	5,394	–15	–1,164	804	June
1,216	734	1,777	–1,056	717	–888	–2,161	22	2,421	–3,109	September
–1,181	–712	5,709	–941	351	1,261	661	–16	–648	–885	December
										2010
850	1,927	3,031	2,211	123	–865	7,011	271	6,451	59	March

Loans and deposits received	Other liabilities	
Total	Total	
		Outstanding amounts — € million
		2008
1,857	18,586	December
		2009
986	15,847	March
661	18,158	June
528	17,315	September
2,581	14,908	December
		2010
4,082	22,095	March
		Transactions — € million
		2009
–881	–2,000	March
–243	1,949	June
–190	–1,421	September
710	–2,975	December
		2010
1,615	7,408	March

Table C.2.1: Securities Issues Statistics: Debt Securities

€ Million	Debt securities: all currencies					
	Short-term securities					
	Total	MFIs	OFIs	IC & PF	NFCs	Govt
Outstanding amounts						
2009						
December	95,737	46,496	36,504	—	—	12,737
2010						
January	96,030	46,771	36,708	—	—	12,552
February	85,841	47,448	27,097	—	—	11,296
March	86,210	47,975	26,183	—	—	12,051
April	87,766	46,971	28,816	—	—	11,979
May	81,067	41,251	31,898	—	—	7,918
June	79,680	38,201	32,506	—	—	8,973
July	72,122	35,251	30,230	—	—	6,641
Transactions						
2009						
December						
2010						
January	293	275	204	—	—	–185
February	–10,201	665	–9,610	—	—	–1,256
March	369	528	–914	—	—	755
April	1,556	–1,004	2,632	—	—	–72
May	–6,699	–5,720	3,083	—	—	–4,061
June	–1,387	–3,050	608	—	—	1,055
July	–7,558	–2,950	–2,276	—	—	–2,332

€ Million	Debt securities: Euro denominated					
	Short-term securities					
	Total	MFIs	OFIs	IC & PF	NFCs	Govt
Outstanding amounts						
2009						
December	62,915	24,071	29,574	—	—	9,270
2010						
January	62,826	23,782	29,774	—	—	9,270
February	52,016	24,285	20,133	—	—	7,597
March	54,167	25,420	20,224	—	—	8,523
April	57,511	26,122	22,756	—	—	8,634
May	56,046	24,950	25,751	—	—	5,345
June	55,073	21,605	26,786	—	—	6,683
July	50,169	20,151	24,884	—	—	5,134
Transactions						
2009						
December						
2010						
January	–89	–289	200	—	—	—
February	–10,822	491	–9,640	—	—	–1,673
March	2,151	1,135	90	—	—	926
April	3,344	702	2,532	—	—	110
May	–1,465	–1,171	2,995	—	—	–3,289
June	–973	–3,346	1,035	—	—	1,338
July	–4,904	–1,453	–1,901	—	—	–1,549

Table C.2.1 — *continued*

Long-term securities						
Total	MFIs	OFIs	IC & PF	NFCs	Govt	
						Outstanding amounts
						2009
959,790	132,681	751,528	2,302	1,997	71,283	December
						2010
970,413	135,817	752,390	2,245	2,006	77,955	January
967,817	136,067	747,158	2,299	2,233	80,059	February
972,759	141,941	744,918	2,385	2,201	81,313	March
982,948	144,801	750,554	2,346	3,273	81,975	April
998,287	145,348	762,450	2,537	4,189	83,763	May
995,603	142,696	761,563	2,557	3,537	85,249	June
940,798	138,000	711,253	2,214	2,665	86,667	June
						Transactions
						2009
	December					
						2010
10,623	3,136	863	–57	9	6,672	January
4,942	5,874	–2,240	86	–32	1,254	February
–2,596	251	–5,232	55	227	2,104	March
10,190	2,860	5,636	–39	1,071	662	April
15,339	547	11,896	191	917	1,789	May
–2,684	–2,652	–887	21	–652	1,486	June
–54,805	–4,697	–50,310	–344	–872	1,417	July

Long-term securities						
Total	MFIs	OFIs	IC & PF	NFCs	Govt	
						Outstanding amounts
						2009
718,360	98,355	547,409	120	1,617	70,858	December
						2010
727,609	100,469	548,008	—	1,617	77,515	January
723,770	100,292	542,013	—	1,857	79,608	February
730,972	105,637	542,714	—	1,757	80,863	March
734,414	109,444	540,552	—	2,899	81,519	April
734,169	108,778	539,264	—	2,859	83,268	May
728,284	106,381	534,964	—	2,192	84,747	June
714,431	104,508	521,244	—	2,100	86,578	July
						Transactions
						2009
	December					
						2010
9,249	2,113	599	–120	—	6,657	January
–3,839	–177	–5,995	—	239	2,093	February
7,202	5,345	701	—	–100	1,255	March
3,442	3,807	–2,162	—	1,143	655	April
–246	–666	–1,289	—	–40	1,749	May
–5,884	–2,396	–4,299	—	–668	1,479	June
–13,853	–1,873	–13,720	—	–91	1,831	July

Table C.2.2: Securities Issues Statistics: Equities

€ Million	Equity securities					
	Quoted securities					
	Total	MFIs	OFIs	IC & PF	NFCs	Govt
Outstanding amounts						
2009						
December	172,236	10,836	3,775	230	157,396	..
2010						
January	162,053	10,079	3,692	201	148,080	..
February	150,012	9,931	3,948	201	135,931	..
March	153,173	9,882	4,151	243	138,897	..
April	160,227	10,193	4,662	260	145,113	..
May	151,846	11,022	4,987	212	135,625	..
June	153,971	11,443	4,819	222	137,487	..
July	151,334	12,465	4,671	226	133,972	..
Transactions						
2009						
December						
2010						
January	2	—	—	—	2	..
February	939	—	–17	—	957	..
March	135	—	—	—	135	..
April	129	—	—	—	129	..
May	1,949	1,725	57	—	167	..
June	1,081	910	—	—	172	..
July	6	—	—	—	6	..

Table C.2.2 — *continued*

Unquoted securities						
Total	MFIs	OFIs	IC & PF	NFCs	Govt	
						Outstanding amounts
						2009
504	—	14	—	490	..	December
						2010
504	—	14	—	490	..	January
490	—	14	—	476	..	February
490	—	14	—	476	..	March
490	—	14	—	476	..	April
490	—	14	—	476	..	May
490	—	14	—	476	..	June
490	—	14	—	476	..	July
						Transactions
						2009
						December
						2010
—	—	—	—	—	..	January
—	—	—	—	—	..	February
—	—	—	—	—	..	March
—	—	—	—	—	..	April
—	—	—	—	—	..	May
—	—	—	—	—	..	June
—	—	—	—	—	..	July

Section D

Quarterly Financial Accounts

Table D.1: Financial Balance Sheet by Sector, Q1 2010

	Total assets	Total liabilities	Net financial wealth	Total assets transactions	Total liabilities transactions	Net financial borrowing/ lending
Non-financial corporations	**594,329**	**798,115**	**–203,786**	**9,120**	**12,170**	**–3,049**
Financial corporations	**3,344,785**	**3,364,340**	**–19,555**	**39,492**	**25,737**	**13,755**
Monetary financial institutions	1,744,214	1,754,198	–9,984	8,049	7,085	964
Other financial intermediaries & financial auxiliaries	1,323,548	1,328,781	–5,233	25,503	12,576	12,927
Insurance corporations & pension funds	277,024	281,361	–4,338	5,940	6,077	–136
General government	**83,374**	**141,673**	**–58,299**	**7,895**	**19,983**	**–12,088**
Households & non-profit institutions serving households	**290,128**	**194,239**	**95,889**	**1,033**	**–2,150**	**3,183**
Rest of world	**2,830,674**	**2,643,917**	**186,757**	**22,283**	**24,085**	**–1,802**

Table D.1.1: Financial Balance Sheet by Sector, Q1 2010

Total assets

		Gold & SDRs	Currency & deposits			Securities other than shares				Loans		
				Currency & transferable deposits	Other deposits		Short-term securities	Long-term securities	Financial derivatives		Short-term loans	Long-term loans
Non-financial corporations	**594,329**	**—**	**64,300**	**19,167**	**45,133**	**8,007**	**3,120**	**3,576**	**1,311**	**197,774**	**67,020**	**130,753**
Financial corporations	**3,344,785**	**1,006**	**632,589**	**64,090**	**568,499**	**1,050,097**	**368,610**	**633,689**	**47,798**	**1,048,263**	**258,991**	**789,273**
Monetary financial institutions	1,744,214	1,006	553,120	39,450	513,669	714,775	335,729	342,245	36,801	447,321	117,202	330,119
Other financial intermediaries & financial auxiliaries	1,323,548	—	57,179	21,965	35,213	269,231	29,159	230,731	9,342	596,612	139,785	456,827
Insurance corporations & pension funds	277,024	—	22,291	2,674	19,617	66,091	3,723	60,714	1,655	4,330	2,003	2,327
General government	**83,374**	**—**	**33,099**	**—**	**33,099**	**9,754**	**63**	**8,847**	**844**	**8,291**	**116**	**8,176**
Households & non-profit institutions serving households	**290,128**	**—**	**124,114**	**45,910**	**78,204**	**502**	**—**	**221**	**281**	**—**	**—**	**—**
Rest of world	**2,830,674**	**—**	**594,687**	**48,204**	**546,483**	**579,934**	**71,892**	**475,355**	**32,686**	**357,303**	**156,028**	**201,274**

Total liabilities

		Gold & SDRs	Currency & deposits			Securities other than shares				Loans		
				Currency & transferable deposits	Other deposits		Short-term securities	Long-term securities	Financial derivatives		Short-term loans	Long-term loans
Non-financial corporations	**798,115**	**—**	**—**	**—**	**—**	**2,331**	**—**	**2,201**	**130**	**327,926**	**102,963**	**224,963**
Financial corporations	**3,364,340**	**—**	**1,094,802**	**120,948**	**973,853**	**616,607**	**63,200**	**509,377**	**44,029**	**382,701**	**191,742**	**190,959**
Monetary financial institutions	1,754,198	—	1,094,802	120,948	973,853	238,201	48,991	150,339	38,871	—	—	—
Other financial intermediaries & financial auxiliaries	1,328,781	—	—	—	—	376,021	14,209	356,653	5,158	379,389	190,448	188,942
Insurance corporations & pension funds	281,361	—	—	—	—	2,385	—	2,385	—	3,312	1,294	2,018
General government	**141,673**	**—**	**11,016**	**665**	**10,351**	**105,435**	**18,506**	**86,822**	**107**	**18,255**	**843**	**17,412**
Households & non-profit institutions serving households	**194,239**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**185,558**	**8,401**	**177,158**
Rest of world	**2,643,917**	**—**	**342,971**	**55,758**	**287,213**	**923,922**	**361,979**	**523,288**	**38,654**	**697,191**	**178,207**	**518,984**

Table D.1.1 — *continued*

Shares & other equity				Insurance technical reserves				Other accounts receivable/ payable	
	Quoted shares	Un-quoted shares & other equity	Mutual fund shares		Net equity of house-holds in life insurance reserves	Net equity of house-holds in pension fund reserves	Pre-payment of insurance premiums & reserves for out-standing claims		
209,863	**10,719**	**195,992**	**3,152**	**3,652**	**—**	**—**	**3,652**	**110,733**	**Non-financial corporations**
511,328	**324,819**	**65,835**	**120,673**	**43,990**	**—**	**—**	**43,990**	**57,511**	**Financial corporations**
17,766	9,845	6,226	1,695	—	—	—	—	10,226	Monetary financial institutions
368,523	254,124	59,609	54,790	—	—	—	—	32,003	Other financial intermediaries & financial auxiliaries
125,039	60,851	—	64,188	43,990	—	—	43,990	15,282	Insurance corporations & pension funds
24,812	**9,298**	**13,360**	**2,154**	**—**	**—**	**—**	**—**	**7,418**	**General government**
44,921	**8,699**	**36,222**	**—**	**118,287**	**46,368**	**69,553**	**2,366**	**2,304**	**Households & non-profit institutions serving households**
1,113,548	**111,193**	**246,027**	**756,328**	**116,495**	**73,431**	**—**	**43,064**	**68,708**	**Rest of world**

Shares & other equity				Insurance technical reserves				Other accounts receivable/ payable	
	Quoted shares	Un-quoted shares & other equity	Mutual fund shares		Net equity of house-holds in life insurance reserves	Net equity of house-holds in pension fund reserves	Pre-payment of insurance premiums & reserves for out-standing claims		
363,036	**n.a.**	**n.a.**	**—**	**—**	**—**	**—**	**—**	**104,823**	**Non-financial corporations**
975,120	**7,276**	**164,247**	**803,597**	**241,523**	**119,800**	**69,553**	**52,171**	**53,587**	**Financial corporations**
402,100	2,882	80,015	319,203	—	—	—	—	19,096	Monetary financial institutions
549,588	4,151	61,044	484,394	—	—	—	—	23,782	Other financial intermediaries & financial auxiliaries
23,432	243	23,189	—	241,523	119,800	69,553	52,171	10,709	Insurance corporations & pension funds
1,190	**—**	**1,190**	**—**	**—**	**—**	**—**	**—**	**5,776**	**General government**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**8,680**	**Households & non-profit institutions serving households**
565,126	**318,554**	**167,861**	**78,710**	**40,901**	**—**	**—**	**40,901**	**73,807**	**Rest of world**

Table D.1.2: Financial Transactions by Sector, Q1 2010

Total assets transactions

		Gold & SDRs	Currency & deposits			Securities other than shares				Loans		
				Currency & transferable deposits	Other deposits		Short-term securities	Long-term securities	Financial derivatives		Short-term loans	Long-term loans
Non-financial corporations	**9,120**	**—**	**–3,390**	**–3,534**	**144**	**925**	**438**	**959**	**–472**	**7,895**	**6,156**	**1,739**
Financial corporations	**39,492**	**—**	**2,943**	**9,355**	**–6,412**	**13,713**	**1,661**	**9,410**	**2,642**	**7,772**	**415**	**7,357**
Monetary financial institutions	8,049	—	–3,278	7,022	–10,300	8,641	1,896	4,334	2,411	6,446	–1,755	8,201
Other financial intermediaries & financial auxiliaries	25,503	—	6,312	2,799	3,513	3,027	–245	3,024	248	1,667	2,258	–591
Insurance corporations & pension funds	5,940	—	–91	–466	375	2,046	11	2,052	–16	–341	–88	–253
General government	**7,895**	**—**	**5,032**	**—**	**5,032**	**502**	**–17**	**176**	**343**	**–935**	**—**	**–935**
Households & non-profit institutions serving households	**1,033**	**—**	**80**	**–532**	**611**	**–109**	**—**	**27**	**–136**	**—**	**—**	**—**
Rest of world	**22,283**	**—**	**–20,139**	**–800**	**–19,339**	**12,077**	**1,816**	**8,971**	**1,290**	**1,202**	**1,403**	**–201**

Total liabilities transactions

		Gold & SDRs	Currency & deposits			Securities other than shares				Loans		
				Currency & transferable deposits	Other deposits		Short-term securities	Long-term securities	Financial derivatives		Short-term loans	Long-term loans
Non-financial corporations	**12,170**	**—**	**—**	**—**	**—**	**185**	**—**	**204**	**–19**	**1,575**	**5,906**	**–4,331**
Financial corporations	**25,737**	**—**	**–26,117**	**–4,266**	**–21,850**	**12,759**	**3,289**	**9,669**	**–199**	**–4,293**	**–6,490**	**2,197**
Monetary financial institutions	7,085	—	–26,117	–4,266	–21,850	12,104	1,585	12,487	–1,968	—	—	—
Other financial intermediaries & financial auxiliaries	12,576	—	—	—	—	573	1,704	–2,901	1,769	–4,561	–6,458	1,897
Insurance corporations & pension funds	6,077	—	—	—	—	83	—	83	—	269	–31	300
General government	**19,983**	**—**	**665**	**–9**	**673**	**8,595**	**–1,947**	**10,536**	**6**	**10,546**	**76**	**10,470**
Households & non-profit institutions serving households	**–2,150**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**–2,375**	**–479**	**–1,896**
Rest of world	**24,085**	**—**	**9,978**	**8,765**	**1,213**	**5,569**	**2,557**	**–866**	**3,878**	**10,480**	**8,961**	**1,520**

Table D.1.2 — *continued*

Shares & other equity				Insurance technical reserves				Other accounts receivable/ payable	
	Quoted shares	Un-quoted shares & other equity	Mutual fund shares		Net equity of house-holds in life insurance reserves	Net equity of house-holds in pension fund reserves	Pre-payment of insurance premiums & reserves for out-standing claims		
1,670	**49**	**1,084**	**537**	**–8**	**—**	**—**	**–8**	**2,028**	**Non-financial corporations**
9,007	**2,867**	**513**	**5,627**	**645**	**—**	**—**	**645**	**5,412**	**Financial corporations**
–714	–709	97	–102	—	—	—	—	–3,045	Monetary financial institutions
6,875	4,208	416	2,250	—	—	—	—	7,623	Other financial intermediaries & financial auxiliaries
2,846	–632	—	3,478	645	—	—	645	834	Insurance corporations & pension funds
3,350	**523**	**2,746**	**81**	**—**	**—**	**—**	**—**	**–54**	**General government**
267	**—**	**267**	**—**	**831**	**494**	**118**	**220**	**–36**	**Households & non-profit institutions serving households**
36,880	**173**	**12,809**	**23,899**	**3,930**	**3,092**	**—**	**839**	**–11,668**	**Rest of world**

Shares & other equity				Insurance technical reserves				Other accounts receivable/ payable	
	Quoted shares	Un-quoted shares & other equity	Mutual fund shares		Net equity of house-holds in life insurance reserves	Net equity of house-holds in pension fund reserves	Pre-payment of insurance premiums & reserves for out-standing claims		
12,883	**n.a.**	**n.a.**	**—**	**—**	**—**	**—**	**—**	**–2,474**	**Non-financial corporations**
28,243	**—**	**858**	**27,386**	**5,064**	**3,585**	**118**	**1,361**	**10,080**	**Financial corporations**
18,351	—	7,073	11,278	—	—	—	—	2,747	Monetary financial institutions
9,834	—	–6,274	16,108	—	—	—	—	6,730	Other financial intermediaries & financial auxiliaries
59	—	59	—	5,064	3,585	118	1,361	603	Insurance corporations & pension funds
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**177**	**General government**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**225**	**Households & non-profit institutions serving households**
10,048	**3,478**	**3,813**	**2,758**	**335**	**—**	**—**	**335**	**–12,326**	**Rest of world**

Section E

Public Finances and Competitiveness Indicators

Table E.1: Government Debt[a]

€ million	2009		2010	
End-quarter	30 Sep.	31 Dec.	31 Mar.	30 June
Government Debt				
Amount outstanding (gross)				
Euro-denominated debt				
Government stock	61,262	70,858	80,863	84,747
Exchequer Bills/Notes, Central Treasury Notes	13,701	9,265	9,214	4,944
Saving Certificates/Stamps, National Solidarity Bonds	2,950	3,105	3,320	3,599
Prize Bonds	1,015	1,073	1,151	1,203
Savings Bonds	2,526	2,761	3,105	3,517
National Instalment Savings	449	456	459	464
Ways and means	2,247	1,783	2,046	2,160
Borrowings from Central Bank, etc.	—	—	—	—
Local loans funds	5	5	5	5
Short-term paper	3,649	1,746	521	2,020
FX contracts	7,345	5,258	4,650	973
EIB loans	—	—	—	—
Public bond issues	—	—	—	—
Private placements	218	218	217	447
Medium-term notes	—	—	—	—
Swaps	448	448	448	448
Total euro-denominated debt	95,815	96,975	105,998	104,529
Non-euro-denominated debt				
EIB loans	—	—	—	—
Public bond issues	—	—	—	—
Private placements	—	—	—	—
Medium-term notes	418	422	450	499
Swaps	–418	–422	–450	–499
Short-term paper	7,115	5,373	5,011	1,018
FX contracts	–7,142	–5,381	–4,794	–1,023
Total non-euro-denominated debt	–27	–8	218	–5
Gross debt	**95,788**	**96,967**	**106,216**	**104,524**
Residual Maturity Profile				
Amounts due to mature in:				
— ≤ 1 year	25,409	19,967	18,632	9,970
— Over 1 year but ≤ 5 years	22,035	27,849	29,283	31,727
— Over 5 years but ≤ 10 years	25,556	33,059	33,898	36,442
— Over 10 years	22,788	16,092	24,403	26,385
Total	95,788	96,967	106,216	10,524

a The term Government debt refers to central government debt. An advance release calendar for central government debt is shown on the IMF Special Data Dissemination Standards (SDDS) Bulletin Board.

Source: NTMA.

Table E.2: Government Stock — Nominal Holdings

€ million	2009		2010	
End-quarter	September	December	March	June
1. Resident[a]	11,360	11,865	12,144	12,583
— MFIs and Central Bank	8,074	8,297	8,234	9,778
— General government	337	314	312	416
— Financial intermediaries	2,623	2,921	3,352	2,135
i) Financial auxiliaries	270	299	302	285
ii) Insurance corporations and pension funds	2,307	2,568	2,688	1,789
iii) Other financial intermediaries	46	54	362	61
— Non Financial Corporations	199	128	38	32
— Households	127	205	208	222
2. Rest of world	49,903	58,993	68,719	72,164
Total	61,263	70,858	80,863	84,747
3. Amounts due to mature in:				
— Less than 3 years	10,258	11,062	10,841	16,012
— 3 or more years but less than 5 years	14,422	14,625	16,021	10,837
— 5 or more years but less than 10 years	21,712	29,296	29,815	43,861
— 10 or more years but less than 15 years	14,871	8,875	24,186	14,037
— 15 or more years		7,000		
Total	61,263	70,858	80,863	84,747

a Above conform to ESA95 standard. Financial auxiliaries include, for example, insurance and security brokers and investment advisors, etc. Other financial intermediaries include mutual funds, financial leasing, etc.

Table E.3: Harmonised Competitiveness Indicators for Ireland (HCIs)

1999 Q1 = 100	Nominal HCI (Monthly average)	Real HCI (Deflated by consumer prices)	Real HCI (Deflated by producer prices)
2005			
January	106.57	117.75	106.98
February	105.93	116.96	106.83
March	106.53	117.31	107.24
April	105.69	116.56	106.78
May	104.89	115.81	107.02
June	102.84	113.62	104.34
July	103.14	114.02	105.53
August	103.68	114.52	105.83
September	103.36	114.48	105.29
October	102.95	114.04	105.44
November	102.28	113.14	105.01
December	102.36	112.76	105.01
2006			
January	102.97	113.67	104.49
February	102.36	113.27	104.91
March	102.88	113.86	104.94
April	103.72	114.76	105.80
May	104.73	116.03	107.30
June	104.89	116.11	107.22
July	105.01	116.29	106.67
August	105.00	116.68	107.36
September	104.79	116.14	108.06
October	104.38	115.94	105.64
November	105.00	116.39	106.62
December	105.82	117.44	106.77
2007			
January	105.07	116.85	106.75
February	105.39	117.16	105.64
March	106.12	118.09	105.61
April	106.78	118.89	106.74
May	106.76	118.85	107.20
June	106.34	118.30	107.69
July	106.91	119.10	107.88
August	106.78	118.99	108.87
September	107.68	119.87	108.39
October	108.49	120.62	109.77
November	109.88	122.04	109.90
December	109.97	122.09	111.46
2008			
January	110.79	122.78	110.99
February	110.76	122.98	111.69
March	113.22	126.07	113.30
April	114.38	126.82	115.62
May	113.88	126.19	113.99
June	113.92	126.03	113.17
July	114.39	125.85	112.92
August	112.53	123.69	113.74
September	111.33	122.35	110.53
October	108.71	119.61	109.53
November	108.30	119.51	109.41
December	112.34	123.99	111.98
2009			
January	112.04	123.43	111.65
February	110.46	120.92	111.04
March	112.48	122.84	112.70
April	111.86	121.88	112.49
May	112.33	121.73	112.97
June	112.76	121.71	113.06
July	112.91	121.38	114.77
August	113.21	121.36	112.79
September	114.47	122.12	114.79
October	115.46	122.82	114.95
November	115.27	122.12	113.96
December	114.42	120.72	113.01
2010			
January	112.82	118.84	110.28
February	110.89	116.16	109.43
March	110.77	115.41	108.10
April	109.48	113.69	107.91
May	106.68	110.98	105.86
June	104.84	108.79	102.90
July	106.53	110.34	104.21

Notes:
1. See article entitled "Measuring Ireland's Price and Labour Cost Competitiveness" in the Bank's Quarterly Bulletin No. 1 of 2010.
2. A rise in an indicator implies a disimprovement in competitiveness while a fall in an indicator implies an improvement.
3. These indicators are available from January 1995 in excel format on the Bank's website.
4. Real HCIs may be subject to revisions to reflect latest available price data.

Table E.3: Harmonised Competitiveness Indicators for Ireland (HCIs) — *continued*

1999 Q1 = 100		Real HCI (Deflated by GDP)	Real HCI (Deflated by whole economy Unit Labour Costs)
1995	Q1	92.52	106.16
	Q2	91.75	106.08
	Q3	92.11	106.88
	Q4	92.19	106.09
1996	Q1	92.44	106.07
	Q2	93.18	106.96
	Q3	94.68	107.56
	Q4	97.01	108.78
1997	Q1	98.43	109.04
	Q2	98.24	105.22
	Q3	96.92	108.32
	Q4	99.92	107.03
1998	Q1	96.06	100.89
	Q2	99.82	101.92
	Q3	100.86	102.18
	Q4	102.01	106.66
1999	Q1	100.00	100.00
	Q2	97.72	100.75
	Q3	99.24	97.47
	Q4	98.20	96.36
2000	Q1	96.89	94.61
	Q2	95.31	91.91
	Q3	95.46	91.93
	Q4	94.34	90.96
2001	Q1	98.56	93.62
	Q2	97.86	93.16
	Q3	100.21	95.56
	Q4	100.37	95.64
2002	Q1	101.35	92.64
	Q2	101.21	94.58
	Q3	105.34	95.78
	Q4	107.12	96.86
2003	Q1	110.78	102.07
	Q2	113.43	104.67
	Q3	113.56	105.69
	Q4	114.54	104.69
2004	Q1	116.06	108.70
	Q2	114.52	108.86
	Q3	114.84	111.51
	Q4	116.42	111.91
2005	Q1	117.28	113.36
	Q2	116.62	112.58
	Q3	114.79	114.63
	Q4	113.63	114.34
2006	Q1	116.71	114.63
	Q2	116.99	117.12
	Q3	119.18	115.85
	Q4	116.49	118.21
2007	Q1	118.45	115.12
	Q2	119.99	119.85
	Q3	117.08	124.57
	Q4	118.30	124.64
2008	Q1	119.20	130.97
	Q2	120.82	133.79
	Q3	119.23	128.06
	Q4	115.95	126.70
2009	Q1	113.45	125.33
	Q2	114.73	124.48
	Q3	114.46	125.00
	Q4	111.67	129.15
2010	Q1	108.09	118.74

Table E.4: Indices of Relative Wage Costs in Manufacturing Industry

	Average Hourly Earnings[a]		Unit Wage Costs[a]	
1999 = 100	Ireland	Major Trading Partners	Ireland[c]	Major Trading Partners
Year				
1990	69	71	166	90
1991	73	75	171	94
1992	76	79	163	97
1993	81	83	164	99
1994	82	86	155	98
1995	84	89	136	99
1996	87	92	135	100
1997	90	95	124	100
1998	95	97	110	101
1999	100	100	100	100
2000	106	105	97	99
2001	117	108	95	101
2002	125	112	88	101
2003	131	116	85	101
2004	137	119	85	99
2005	142	122	84	98
2006	149	126	85	98
2007	155	130	85	98
2008	163	134	87	102
2009[f]	171	137	84	108
2010[f]	169	139	77	106
2011[f]	170	142	77	107

	Relative Hourly Earnings[b]		Relative Unit Wage Costs[b]	
1999 = 100	National Currencies	Common Currency (€)	National Currencies	Common Currency (€)
Year				
1990	97	110	185	209
1991	97	107	181	201
1992	96	109	169	192
1993	97	102	165	174
1994	96	101	157	166
1995	95	101	137	146
1996	95	104	135	147
1997	95	104	124	136
1998	97	101	109	113
1999	100	100	100	100
2000	102	95	98	91
2001	108	102	94	88
2002	113	108	87	83
2003	113	117	84	87
2004	116	122	86	90
2005	116	123	86	90
2006	118	125	87	92
2007	119	130	86	94
2008	121	139	86	98
2009[f]	124	143	77	89
2010[f]	121	134	72	80
2011[f]	119	130	72	78

a In national currencies.
b A rise in the index implies a disimprovement in competitiveness while a fall in the index implies an improvement.
c Changes in domestic unit wage costs should be interpreted with caution because of the strong influence of the chemicals sector in recent years.
Sources: Ireland — Central Statistics Office and Central Bank estimates.
Major trading partners comprise the United Kingdom, the United States, Germany, France, Italy, Belgium, the Netherlands, Spain and Singapore. Data on these were derived from the OECD and other sources.