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Central Bank Quarterly Bulletin



CENTRAL BANK &
FINANCIAL SERVICES
AUTHORITY OF IRELAND

EUROSYSTEM

BANC CEANNAIS
AGUS ÚDARÁS SEIRBHÍSÍ
AIRGEADAIS NA HÉIREANN

CÓRAS AN EURO

Forecast Summary Table

	2008	2009	2010(e)	2011(f)
Real Economic Activity				
(Percentage Change)				
Personal Consumer Expenditure	-1.0	-7.2	-2.6	1.1
Public Consumption	2.6	-1.2	-3.0	-0.5
Gross Fixed Capital Formation	-15.5	-29.7	-16.1	-3.4
<i>of which:</i> Building and Construction	-15.5	-33.8	-20.8	-6.7
Machinery and Equipment	-15.4	-15.7	-6.0	2.0
Exports of Goods and Services	-1.0	-2.3	2.0	4.3
Imports of Goods and Services	-2.1	-9.3	-1.1	2.6
Gross Domestic Product (GDP)	-3.0	-7.1	-0.5	2.8
Gross National Product (GNP)	-2.8	-11.3	-1.5	2.4
External Trade and Payments				
Balance of Payments Current Account (€m)	-9,435	-4,814	-1,519	438
Current Account (% of GNP)	-6.1	-3.7	-1.2	0.3
Prices, Costs and Competitiveness				
(Percentage Change)				
Harmonised Index of Consumer Prices (HICP)	3.1	-1.7	-1.3	0.7
<i>of which:</i> Goods	2.9	-4.1	-2.2	0.3
Services	3.4	1.2	-0.6	1.0
HICP Excluding Energy	2.6	-1.0	-2.4	0.5
Consumer Price Index (CPI)	4.1	-4.5	-1.4	1.1
Nominal Harmonised Competitiveness Indicator (Nominal HCI)	4.5	1.0	0.5 ^a	n.a.
Compensation per Non-Agricultural Employee	4.0	-2.9	-2.8	1.1
Labour Market				
(% Change Year-on-Year)				
Total Employment	-1.1	-8.2	-3.9	-0.5
Labour Force	0.8	-2.4	-1.9	-0.9
Unemployment Rate (ILO)	6.3	11.8	13.7	13.2
Public Finances^b				
(% of GDP)				
General Government Balance	-7.2	-11.7	-11.6	-10.0
Government Debt	44.1	64.5	77.9	82.9
Technical Assumptions^c				
(Annual Average)				
EUR/USD Exchange Rate	1.47	1.39	1.37	1.36
EUR/GBP Exchange Rate	0.80	0.89	0.90	0.91
Oil Price (\$ per barrel)	97.7	61.9	80.7	84.5
Interbank Market — Euribor ^d (3 month fixed)	4.6	1.23	0.82	1.61

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

^b Department of Finance.

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

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

Comment

The indications are that domestic economic activity is evolving broadly as was expected at the time of the last Bulletin. Recently published national accounts data confirm that, on an aggregate income basis, the economy contracted by 11.3 per cent last year in GNP terms, following a decline of 3 per cent in 2008. A significant part of the steep decline in GNP in 2009 reflected a sharp increase in net factor income outflows. The decline in GDP in 2009, at 7.1, was noticeably less steep. Negative carryover into 2010, and the prospect that economic weakness will persist in the first half of the year, suggest that, on an average annual basis, the economy will contract by a further 1.5 per cent this year, in GNP terms, or 0.5 per cent in GDP terms, but with a modest upward trend likely to emerge in the second half. Growth of about 2.4 per cent and 2.8 per cent in GNP and GDP respectively is currently expected for next year.

The prospects for domestic demand remain subdued, with the outlook for construction investment being particularly unfavourable. While also remaining weak, the evidence suggests that the contraction in consumer demand is continuing to moderate. Both sentiment indicators and retail sales data point towards some stabilisation and there is a prospect of a return to moderate growth later in the year. Significant headwinds, however, in the form of downward pressure on employment and incomes, as well as the need for households to maintain savings from current income at relatively high levels in order to reduce their indebtedness, will tend to restrain spending.

As employment developments tend to lag output, the prospects are for some further drop in employment this year, though at a moderating rate. This will put upward pressure on unemployment, although this will be reduced somewhat by the pick-up in outward migration and the fall in labour force participation. It is likely to be 2011, however, before output growth will be strong enough to exert any noticeable downward pressure on unemployment.

The timing and the strength of a recovery will depend heavily on the economy's external performance. While the global economy recovered more strongly than expected in the second half of 2009, the performance of the major industrialised economies is patchy and uneven. On the basis of the projections from the main international forecasting agencies,

however, demand is set to expand modestly in Ireland's main export markets in 2010, in marked contrast to the contraction last year. Against this background, moderate export growth is projected to re-emerge this year following last year's decline.

Given the importance of the economy's external performance, competitiveness developments are critical to recovery. Ireland's unit labour costs — the labour costs of producing an additional unit of output — deteriorated by about 15 per cent between 2000 and 2008 relative to the euro area as a whole. Last year, in contrast, this measure of competitiveness improved by up to 7 per cent, partly reflecting favourable wage developments in Ireland. The country's productivity performance was also somewhat better than many of its trading partners, although this partly reflected the sharp falls in output in low productivity sectors such as construction. During 2010, a further improvement in this measure of competitiveness is expected, perhaps of about 4 per cent. This will contribute to a significant improvement in the Balance of Payments, with the prospect of a return to a broadly balanced current account position by next year.

These developments are positive but two factors limit their significance. First, there has been a divergence in competitiveness trends within the euro area over the last ten years with peripheral economies losing competitiveness relative to core economies. Ireland has reversed this trend recently but is still left with a

competitiveness loss relative to these core economies. Second, much of our external trade remains with the UK, with competitiveness *vis-à-vis* that economy adversely affected by the sizeable weakening of sterling in recent years.

The effects of reductions in nominal wages are being mitigated by the reduction in the price level that is underway. This decline reflects two largely distinct factors. The first is the general weakness in international traded goods prices. An additional factor, however, in Ireland is the weakness of domestic demand which is causing prices to fall more rapidly than elsewhere.

While much of the economy is characterised by flexibility, there are some sectors and markets that would benefit from further reform to increase competition. These include those identified by the National Competitiveness Council and mentioned in previous Bulletins, such as health care, health insurance, utilities and public transport. As recognised in the recent negotiations, public sector reform is also another key ingredient in boosting the performance of the economy. Flexibility in work practices and other measures to maximise the provision of services for a given cost level are essential. Widespread acceptance of the need for reform, and an agreed approach to implementing it, would be a major contribution to confidence in the economy at this point.

The restoration of the banking sector to a condition where it can assist recovery is a key focus at the moment. Recent statements have clarified the distinct steps that are being taken. First, severely impaired loans are being removed from the balance sheet of banks through their purchase on discounted terms by the National Asset Management Agency (NAMA). Second, recapitalisation is occurring, taking account not only of the losses incurred in the transfer of these loans to NAMA but also of likely further losses on the banks' other loans. This is intended to ensure that, at no point over the next few years, will banks' capital positions fall below an acceptable level by international standards, even if the economic situation is worse than currently projected or loan losses turn out to be relatively

high. Recapitalisation will create a buffer in the banks' capital positions which will place them in a better position to access funding and assist in the recovery of the economy. Lastly, a restructuring of the banking sector, taking into account the need to maintain competition, is required.

Credit developments in the economy are being driven by a number of different factors at the moment. The first is a demand side effect, essentially the reduced demand for credit from households and firms due to the economic downturn. A second factor is a supply-side effect which also naturally occurs in a downturn, which is that the creditworthiness of borrowers deteriorates so that banks are, quite rationally, less willing to extend credit. Forcing banks to extend credit to non-creditworthy borrowers in such circumstances is inadvisable, as it will only hinder adjustment in the economy and will damage the banks themselves. However, the measures proposed by the Government with the intention of improving the supply of credit to viable borrowers are appropriately designed to avoid such concerns and could contribute to stimulating more non-property lending by banks on a sustainable basis. Lastly, there is a second supply side factor, which reflects a decline in banks' willingness to extend credit because of their own financial position. Banks that feel they have no margin for error in terms of extending loans may over-restrict credit, damaging growth in the real economy and feeding back on the banks' own position. Recapitalisation is designed to address this issue by creating solid banking institutions that will advance credit in a normal manner. Close monitoring of the situation will be required, to establish if the measures taken are being successful in restoring the banking system to its normal functioning. Banks may also need to invest in their appraisal techniques in the area of lending to small and medium-sized enterprises, which will inevitably be one of their main business areas in the future.

Another concern for policy at the moment is the situation of households, especially those affected by unemployment, who are experiencing difficulties in servicing their

mortgages. While mortgage rates still remain relatively low by historical standards, the fall in the price level has had the effect of increasing the real burden of borrowing. The aim here has to be to find approaches that assist them without damaging the newly-recapitalised banks or putting a significant extra burden on the public finances. This issue and, indeed, issues related to negative equity such as reduced mobility, are being considered by a group set up by the Government, which includes a representative of the Financial Regulator.

As far as the public finances are concerned, the measures taken to date should have the effect of halting the pattern of deterioration. These have, of course, impacted negatively on demand, but there have also been positive effects. For example, the premium for government borrowing over and above benchmark rates, such as German bond yields, remained broadly stable through February and March, despite a background of increasing premia for some other countries. Domestic consumer and investor confidence, while still well below the levels obtaining prior to the downturn, has also continued to edge upwards.

In the current international environment, it is more important than ever to adhere strictly to the agreed fiscal consolidation plan. The fiscal situation of other countries has deteriorated recently and it has become increasingly clear that the severe downturn globally will exert pressure on government finances for some time to come. Against this background, it is important to ensure that the state can access funds on good terms and avoid being classified amongst those countries whose fiscal situation is the most worrying. Any slippage would be certain to damage confidence, both internationally and domestically, which will adversely impact on the economy. While the overall extent of the fiscal adjustment has been clearly indicated and an impressive start has been made, it would enhance confidence further to set out in somewhat greater detail the nature of the further adjustment measures planned for future years. In addition, given that the adjustment programme assumes average economic growth of about 4 per cent between 2011 and 2014 and, in order to adhere to the agreed consolidation plan, the Government must stand ready to take further action if growth is weaker than assumed.

The Domestic Economy

Forecast Highlights

- Preliminary National Accounts data for 2009 point to a decline of 7.1 per cent in GDP terms and a decline in the volume of GNP of 11.3 per cent. The larger decline in GNP reflected a sharp increase in net factor income outflows which are counted in the measurement of GNP but not GDP.
- A significant moderation in the rate of decline in output is projected for this year with GDP and GNP forecast to contract by about 0.5 per cent and 1.5 per cent, respectively. Growth, on a year-on-year basis should re-emerge in the second half of this year giving a reasonably positive carryover into next year. This outcome is predicated on a gradual recovery in exports and a moderation in the rate of decline in domestic demand.
- At this stage the prospects are for growth in GDP terms of about 2.8 per cent next year with GNP increasing by about 2.4 per cent. While exports are likely to be the main growth driver next year, domestic demand could make a small positive contribution.
- The improved trade performance should contribute to a significant improvement in the Balance of Payments. The deficit on the Current Account of the Balance of Payments as a percentage of GNP is projected to decline from 3.7 per cent last year to 1.2 per cent this year with the prospect of a small surplus of about 0.3 per cent of GNP next year.
- Employment declined last year by 8.2 per cent which was somewhat ahead of the decline in GDP. A further significant decline in employment of the order of 3.9 per cent is forecast for 2010. In 2011, the likelihood of positive output growth should limit the decline in employment to about 0.5 per cent with the prospect of a return to employment growth in the second half of the year.
- The impact of employment losses on the unemployment rate has been mitigated by declining labour supply and this trend is expected to persist over the forecast horizon. The unemployment rate is projected to increase to an average of 13.7 per cent this year before easing back slightly to 13.2 per cent next year.
- The consumer price level declined by 1.7 per cent last year and inflation is projected to remain negative in 2010. Harmonised Index of Consumer Prices (HICP) inflation is forecast to average about –1.3 per cent in 2010 while the Irish Consumer Price Index (CPI) is forecast to decline by 1.4 per cent.
- Annual inflation is set to turn positive at the end of this year but overall inflationary pressures are likely to remain subdued into next year as labour market weakness persists. HICP inflation is forecast to average about 0.7 per cent in 2011, remaining below the euro area average and indicating a further improvement in price competitiveness with respect to our trading partners in the euro area.

Overview

Following a period of exceptional weakness, the pace of decline in activity in the Irish economy is projected to moderate significantly this year. Preliminary National Accounts data for 2009 point to a decline of 7.1 per cent in GDP terms and a decline in the volume of GNP of 11.3 per cent. The larger decline in GNP reflects a sharp increase in net factor payments last year due both to a significant decline in earnings inflows from Irish owned firms abroad and an increase in profit repatriation by foreign owned entities in Ireland together with increased national debt interest payments abroad. Domestic demand was the main driver of the contraction in activity last year reflecting exceptional weakness in both investment and consumer expenditure and a significant run down in stocks. Exports also declined but by less than the contraction in world trade, mainly due to a resilient performance by the pharmaceutical sector which in turn accounted for the sharp rise in net factor income outflows and the consequential divergence between GNP and GDP last year.

A significant moderation in the rate of decline in output is projected for this year with GDP and GNP forecast to contract by about 0.5 per cent and 1.5 per cent, respectively. This outcome is predicated on a gradual recovery in exports and a moderation in the rate of decline in domestic demand. Growth, on a year-on-year basis should re-emerge in the second half of this year giving a reasonably positive carryover into next year. Given the relatively positive prospects for external demand and taking account of the significant improvement in cost competitiveness, exports are likely to be the main growth driver next year. However, with the rebalancing in the domestic economy likely, at that stage to be largely complete, domestic demand should also make a small positive contribution to growth next year. At this stage the prospects are for growth in GDP terms of about 2.8 per cent next year with GNP increasing by about 2.4 per cent.

External demand conditions are set to improve gradually this year following a sharp contraction in world trade last year. The recovery in world demand, which has been

driven by an exceptional degree of both fiscal and monetary policy easing, has nevertheless, been somewhat uneven and sluggish, compared to previous recessions, at least in advanced economies. While the most likely outlook is for the as yet modest rebound in world demand to gain some momentum over the next two years, there remains the danger that the recovery will not be sustained. Of particular concern is the timing of the return to more normal fiscal and monetary policy stances. While a premature withdrawal of support could undermine what remains a fairly fragile recovery, it is clear that, in particular, current fiscal imbalances are not consistent with long term sustainability. On the basis of 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 1.5 per cent in 2010 and 2.0 per cent in 2011.

The resilient performance of exports last year in the face of exceptionally weak external demand reflected a strong performance for the pharmaceutical sector which masked a relatively poor trend in a number of other sectors most notably IT manufacturing and the relatively labour intensive food sector which is particularly dependent on the UK market. Overall, goods and services exports declined by 2.3 per cent last year. Taking account of the projected recovery in world demand, together with a welcome improvement in relative cost competitiveness, the prospects are for a return to modest export growth this year of 2.0 per cent increasing to about 4.3 per cent next year. Import volumes declined sharply last year reflecting the impact of the contraction in domestic demand. While the projected recovery in export volumes this year will, given the high import content of Irish exports, provide some support to import demand, this is likely to be more than offset by continued weakness in domestic demand and a further decline in import volumes is likely. With domestic demand projected to increase slightly and taking account of a projected acceleration in exports, a return to positive import volume growth

is likely next year. The improved trade performance should contribute to a significant improvement in the balance of payments and the prospect of a return to a broadly balanced position by next year.

Domestic demand which was the main driver of the contraction of overall GDP last year is likely to exhibit further weakness this year.

Investment expenditure is again likely to be the weakest component with a decline of about 16 per cent forecast following a decline of almost 30 per cent last year. A further decline of about 3½ per cent is projected for 2011. In the housing market, forward looking indicators point to around 12,000 completions this year with a further decline to about 10,000 units in prospect for next year. Oversupply and stagnant demand conditions point to a continued contraction in commercial construction in 2010 with a further albeit less significant decline in prospect for 2011. The planned consolidation of public expenditure this year and in the following years includes significant savings in public infrastructure expenditure. However, tender price reductions will mitigate the impact on volumes to a significant extent. Consumer expenditure declined significantly last year reflecting a steep fall in disposable incomes and an increase in precautionary savings on the part of consumers. Despite some tentative signs of stabilisation in the early months of the year, a further albeit more modest decline in consumption is likely this year given the outlook for employment and disposable incomes. A modest pick-up in consumer spending is projected for 2011 against a background of a gradual stabilisation in labour market conditions and improving consumer sentiment.

Labour market conditions have been exceptionally weak in recent years against a background of sharply contracting aggregate demand. Employment losses have been widespread with the greatest declines occurring in the construction sector, in domestically orientated services and in labour intensive manufacturing firms. Employment declined last year by 8.2 per cent which was somewhat ahead of the decline in GDP. With employment trends likely to lag the gradual stabilisation of output over the course of this

year, a further significant decline in employment of the order of 3.9 per cent is forecast. The likelihood of positive output growth in 2011 should limit the decline in employment to about 0.5 per cent next year. The impact of employment losses on the unemployment rate has been mitigated to a significant extent by declining labour supply reflecting both declining participation rates and a return of net outward migration. This trend is expected to persist over the forecast horizon thereby limiting the increase in the unemployment rate to an average of 13.7 per cent this year from 11.8 per cent last year with the prospect of a modest reduction in the unemployment rate to about 13.2 per cent next year.

Challenging labour market conditions and declines in disposable incomes will continue to constrain demand and the pricing power of firms during this year. Upward base effects will play a prominent role and will likely push the headline annual inflation rates into positive territory during the final quarter of this year. Taking into account some negative carryover from 2009, the annual HICP inflation rate is projected to be about -1.3 per cent in 2010 while the corresponding annual CPI inflation rate is projected to be about -1.4 per cent. Inflation is likely to turn positive in 2011, averaging about 0.7 per cent on a HICP basis, with the risks broadly balanced and relating in the main to the projected muted recovery domestically and the evolution of oil prices. Meanwhile, CPI annual inflation for next year is projected to be about 1.1 per cent, with mortgage interest rates posing some upside risk to the outlook.

With the CPI and the HICP annual inflation rates likely to be significantly lower than the HICP projection for the euro area this year, there is set to be a continued marked improvement in price competitiveness with respect to our trading partners in the euro area. Still, it is worth noting that the price level in Ireland is falling from a particularly elevated level. For consumer goods, Ireland had the highest price level in the euro area in 2008 and the gap between the price level in Ireland and Finland and the remaining euro area countries was quite large. According to current

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	84,173	-2.6	-1.4	80,798	1.1	0.7	82,242
Public consumption	28,205	-3.0	-3.9	26,292	-0.5	0.4	26,269
Gross domestic fixed capital formation	25,484	-16.1	-4.9	20,323	-3.4	-0.4	19,539
<i>of which:</i>							
• Building and construction	17,400	-20.8	-7.6	12,732	-6.7	-1.0	11,763
• Machinery and equipment	8,084	-6.0	-0.1	7,591	2.0	0.4	7,776
Value of physical changes in stocks	-2,828			-750			200
Statistical discrepancy	327			327			327
Gross domestic expenditure	135,361	-3.8	-2.5	126,990	0.8	0.5	128,577
Exports of goods & services	148,455	2.0	0.4	152,106	4.3	0.7	159,811
Final demand	283,816	-0.7	-0.9	279,096	2.7	0.6	288,388
Imports of goods & services	-120,273	-1.1	0.1	-119,096	2.6	0.7	-123,033
Gross domestic product	163,543	-0.5	-1.7	160,000	2.8	0.5	165,355
Net factor income from rest of the world	-32,111			-33,487			-35,197
Gross national product	131,432	-1.5	-2.3	126,513	2.4	0.5	130,158

projections, Ireland will have the second highest price level, after Finland, in the euro area in 2010. For consumer services, Ireland again had the highest price level in the euro area in 2008 and Ireland looks set to have the third highest price level, below Finland and Luxembourg, in 2010.

Demand

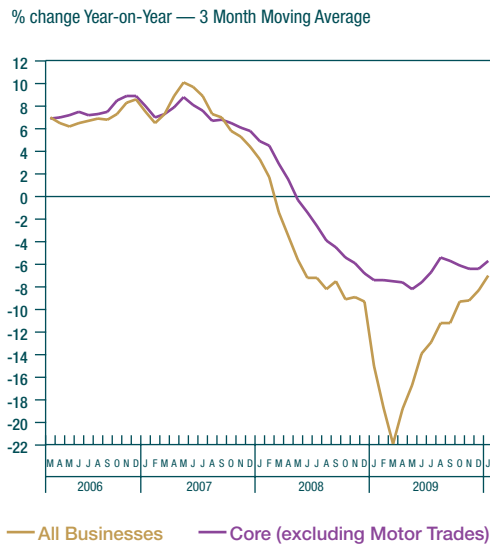
Consumer Spending

According to the latest Quarterly National Accounts, the annual average decline in consumer expenditure for the whole of 2009 was estimated to be about 7.2 per cent but the trend during the year was not uniformly downwards. A sharp decline in the first quarter of last year, reflecting a large jump in precautionary savings, produced a strong negative carryover for the remainder of the year. Consumer spending recovered slightly in the second quarter, as sentiment moved off exceptionally weak levels. Thereafter, spending recorded relatively modest declines, as the falls in disposable incomes and employment put further downward pressure on spending. Strong discounting in the retail sector continued through to the final quarter of the year as firms attempted to stem volume declines and respond to shifts in consumer buying habits. The sharp depreciation of sterling during the final quarter of 2008 widened cross-border price differentials and

the consequent transfer of expenditure across the border further weakened retail spending domestically. There was also a steady decline in the services consumption component during much of the year as consumers pared back on expenditure on non-essential services items.

There were tentative signs of some stabilisation in personal consumption at the beginning of this year although seasonal influences, extreme weather conditions and volatility in the data, make discerning the underlying trend challenging. Uncertainty has eased somewhat following the publication of Budget 2010, but domestic consumer sentiment continues to recover only gradually as further disposable income declines and employment losses are in prospect and the recovery in many advanced economies has been patchy and uneven. Spending is unlikely to gain much traction during the first half of this year and will also be weighed by further precautionary saving in the household sector. In this respect, household net worth is still under pressure as property prices have continued to fall while households are likely to pay down unsecured debt in the face of higher non-mortgage interest rates. At the same time, real incomes are projected to be supported by negative inflation and government transfers and there may be some pick-up in non-labour income this year, albeit from a particularly low base. The savings ratio is likely to be similar to last year as

Chart 1: Index of Volume of Retail Sales



Source: CSO

the decline in personal consumption of about 2.6 per cent for the year as a whole is set to be matched by a decline in real personal disposable incomes of a similar order of magnitude. A modest pick-up in personal consumption of 1.1 per cent is projected for 2011, in line with some recovery in disposable incomes and a further gradual improvement in consumer sentiment.

Investment

As signalled in previous Bulletins, the most significant drag on domestic demand is coming from a sustained contraction in the economy's fixed capital formation, driven principally by a rapidly declining construction sector. The Quarterly National Accounts for the fourth quarter of 2009 indicate that, despite 10 consecutive quarters of decline, the construction sector continued to act as a significant negative drag on growth. In the final quarter of last year, building and construction declined by a further 33.8 per cent. The building and construction sector has now shrunk by over 51 per cent in real terms since its peak in the first quarter of 2007. Coupled with a small increase of 2.2 per cent from machinery and equipment, investment declined by 28.2 per cent in the fourth quarter of last

year, or, provisionally, 29.7 per cent for the year as a whole.

For this year, available data and forward-looking indicators would suggest that activity is likely to decline further, with very little new construction activity in the pipeline given stagnant demand, significant levels of oversupply and limited availability of credit. For the housing sector, following approximately 26,500 completions last year, the Bank's statistical model, based on forward looking indicators, suggests that house completions are likely to fall to approximately 12,000 units this year — comprising mostly one-off units as new schemes and apartment developments come almost to a halt. This forecast includes an assumption that a portion of currently unfinished developments transferred to NAMA will be completed towards the end of the year. Coupled with some limited growth in repairs and maintenance, investment in residential housing is forecast to decline by approximately 31 per cent this year, following a projected decline of 38 per cent last year. House-building activity is likely to remain at this low level next year — with the current forecast assuming 10,000 completions — as overcapacity, financial constraints and a lack of demand are still the prevalent forces in the market. With activity at a virtual standstill, the year-on-year decline in residential construction in 2011 is forecast to moderate to approximately 6 per cent.

Following a decline of 29.5 per cent in 2009, weakness in non-residential construction is also set to continue into 2010 as commercial, retail and industrial market fundamentals remain weak and government investment records significant declines outlined under the Public Capital Programme¹ in Budget 2010. The demand for property in most sectors remains weak, with oversupply, falling capital values and rents (see the section on commercial property prices) impacting the market. There are, however, some tentative signs of stabilisation in the market with regard to rents and yields. On the other hand, the appetite for funding further investment in this area is likely

¹ Falling tender prices means that the volume decline in government investment will be less than that indicated in value terms.

to remain weak over the forecast horizon. Accordingly, non-residential investment is forecast to fall by 12.8 and 7 per cent in 2010 and 2011, respectively.

Taken together, the forecasts for residential and non-residential investment imply that investment in building and construction is forecast to decrease by almost 21 per cent in 2010, followed by a further reduction of almost 7 per cent in 2011.

In conjunction with the downsizing of the construction sector, a weak manufacturing sector outlook and broad-based weakness in the economy more generally, investment in machinery and equipment is forecast to decrease by 6 per cent this year before increasing by 2 per cent in 2011. These forecasts are, however, tentative in nature given the uncertainty surrounding the timing and magnitude of aircraft purchases and the recovery more generally. Given the assumptions for construction and machinery and equipment investment, overall investment is forecast to contract by 16.1 per cent and 3.4 per cent in 2010 and 2011, respectively.

Stock Changes

There was a significant decline in the stock of inventory levels last year which made a negative contribution to the change in GDP last year of 1.7 percentage points. A modest deceleration in destocking is assumed this year in line with improving prospects for output growth.

Government Consumption

Preliminary National Accounts data show a decline in the volume of Government consumption of 1.2 per cent last year. 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 3 per cent this year.

External Demand and the Balance of Payments

Merchandise Trade

Merchandise exports were resilient amid the collapse in world trade during much of 2009.

Considerable weakening was, however, evident in the fourth quarter of 2009, with an annual decline in merchandise exports of 8.3 per cent in volume terms. According to CSO External Trade Statistics, the weakened fourth quarter outturn may partly be attributed to the broad chemicals sector, most notably, organic chemicals. The performance of the more traditional exporting sectors, such as food and beverages remained weak.

Some improvement in the performance of merchandise exports is in prospect, with Irish exporters set to benefit from favourable developments in external demand and cost competitiveness, albeit to varying degrees across 2010 and 2011. Monthly data for world trade in goods² suggests that international trade volumes have begun to recover, with a quarter-on-quarter increase of 6.0 per cent in the final quarter of 2009. External demand is expected to strengthen further throughout the projection period. The NCB Purchasing Managers' Index (PMI) for manufacturing provides some evidence of the recovery in external demand, with the export orders index exceeding the expansion/contraction threshold of 50 in both January and February 2010. Furthermore, the export orders index for February was the highest reading registered since May 2006. The recovery in external demand seems set to be complemented by the improving competitiveness of Irish exporters — the lowering of the cost base arising from the decline in wages and prices across the economy is expected to place Ireland in a favourable position to benefit from the recovery in trade flows. It is envisaged that any rebound in exports may be held back somewhat by sector-specific effects. For instance, the chemicals sector, which accounts for almost half of overall merchandise exports, is expected to face somewhat limited upside potential amid the recovery in external demand in view of the somewhat acyclical nature of demand for its output. Reflecting such a combination of developments, a modest increase in merchandise export volumes of around 0.7 per cent is envisaged during 2010. Looking ahead to 2011, merchandise exports

² CPB Netherlands Bureau for Economic Policy Analysis.

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	77,951	0.7	0.6	78,933	2.9	0.5	81,578
Merchandise imports	-45,304	-6.8	0.1	-42,259	1.0	0.3	-42,798
Merchandise trade balance (adjusted)	32,647			36,674			38,780
(% of GNP)	24.8			29.0			29.8

are expected to gain momentum, with a projected increase in volume terms of around 3.0 per cent. There are, however, some risks attached to such an outlook given the uncertainty surrounding the prospects for external demand and, in particular, its sustainability.

The fall in merchandise imports decelerated further in the final quarter of 2009, with a decline in volume terms of 14.1 per cent. While the performance of merchandise imports tends to be strongly correlated with export growth, reflecting the high import content of Irish exports, the impact of the return to positive growth in merchandise exports during 2010 is expected to be outweighed by the weakness of domestic demand. Accordingly, a further, albeit less marked, decline in the volume of merchandise imports is projected in 2010, with a fall of around 6.8 per cent. Given the envisaged pick-up in export-driven demand for imports and the stabilisation of domestic demand in 2011, merchandise imports are projected to increase by 1.0 per cent next year.

Services, Factor Incomes and International Transfers

The tentative signs of recovery in services exports evident in the third quarter of 2009 strengthened considerably in the final quarter of 2009, with an annual increase of 7.0 per cent in volume terms. Such signs of recovery have been further reflected in the new export orders index of the NCB Services PMI; a sustained expansion of the new export orders index was evident in February as it registered its sixth consecutive month of expansion. At a sectoral level, a significant divergence in

performance was evident during the year to the fourth quarter of 2009 as the performance of insurance and financial services continued to weigh heavily while the recovery in computer and business services gathered momentum. Similar to merchandise exports, services trade seems set to benefit from the recovery in external demand and improvements in cost competitiveness throughout the projection period. In particular, the performances of computer services and business services are projected to improve further. The volume of services imports declined by 3.3 per cent annually in the fourth quarter of 2009. At a sectoral level, much of this weakness emanated from tourism and travel services and insurance services. Some recovery in services imports is, however, envisaged during 2010 and 2011.

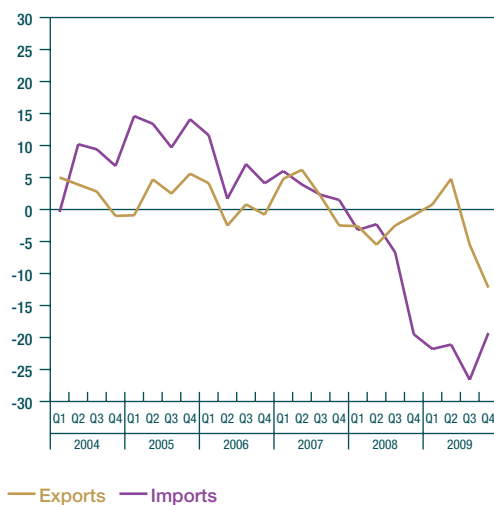
Net factor income outflows rose by 18.2 per cent in 2009, reflecting in the main a sizable falloff in income inflows. It is anticipated that net factor income outflows will increase further during 2010 followed by a somewhat more pronounced rise next year. The international transfers component of the current account was negative during 2009 as a whole. The negative contribution to the current account arising from this component is projected to continue throughout the projection period. Combining the prospective trends across the current account, a deficit of around 3.7 per cent of GNP is estimated to have occurred during 2009. The current account deficit is projected to narrow further this year, with a projected deficit of around 1.2 per cent of GNP. Some further improvement is anticipated in 2011, with a current account surplus of 0.3 per cent of GNP projected.

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

€ million	2009	2010 ^f	2011 ^f
Current account			
• Merchandise trade balance (Adjusted)	32,647	36,674	38,780
• Services	-4,957	-4,183	-2,572
• Net factor income from rest of the world	-31,582	-33,040	-34,750
• Current international transfers	-923	-970	-1,020
Balance on current account	-4,815	-1,519	438
(% of GNP)	-3.7	-1.2	0.3

Chart 2: Value of External Trade

% change Year-on-Year



Source: CSO

Supply

Industry and Services Output

According to recently released final data from the CSO, manufacturing output contracted by 3.5 per cent in 2009. The year as a whole was marked by extreme volatility across industrial subsectors, during which the divergence in performance between the modern and traditional sectors gathered considerable pace, with the modern sector growing by 2.9 per cent and the traditional sector contracting by 14.4 per cent in annual terms. Year-end figures corroborate the story which prevailed at the time of the last Bulletin, confirming that output in the modern sector in 2009 was supported solely by the rapid rise of the pharmaceutical

subsector, now accounting for 58 per cent of gross output, and which expanded by 20.5 per cent in 2009, relative to growth of 1.2 per cent a year previously. Chemicals and pharmaceuticals combined ended the year on a very strong footing growing by 18.0 per cent in 2009. However, this buoyancy masks divergent trends, with chemicals ending the year down 9.3 per cent. The weakness of chemicals in evidence throughout the year contrasts starkly against their more resilient performance in 2008. Output in manufacturing once chemicals are excluded fell by 18.7 per cent in 2009, with this fall off having accelerated since the last Bulletin, thus providing further evidence to bolster the need for caution. Whilst one month's provisional data is insufficient to draw conclusive trends from in relation to 2010, output in manufacturing was up 2.5 per cent in January relative to a year earlier. Modern sector output grew by 4.8 per cent in annual terms. Output in the traditional sector declined by 3.6 per cent in January, registering by far the smallest fall since early-2008. This provides tentative evidence that the sharp rate of decline in the sector evident throughout 2009 may have abated.

The NCB Purchasing Managers Index (PMI), a composite indicator used to monitor the performance of the manufacturing industry overall, confirms that activity has now contracted in each of the past 27 months. The headline index registered 48.6 in February (where a value under 50 is indicative of contraction in activity levels), having remained at or above 48 since October 2009, following sluggish readings in the year to October. This suggests that the former precipitous decline appears to have been arrested. Recovery in the headline indicator has been driven almost

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	3.8	1.6	3.1	2.9
2007	6.6	3.0	5.3	5.0
2008	0.4	-4.1	-1.9	-1.8
2009	2.9	-14.4	-3.8	-3.5
2010 ^f	3.1	-2.4	1.4	1.6
2011 ^f	3.5	-1.7	2.3	2.2
Average 1999-2011	7.9	1.4	5.1	5.0

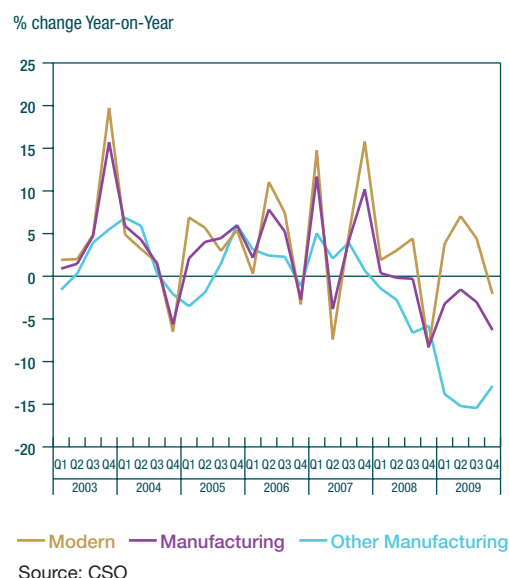
Note: Output data produced by the CSO now conforms with NACE Rev2 categorisation practices and has been re-based to 2005.

exclusively by improvements in the export sales component, which has been particularly buoyant since September.

Ongoing volatility in this sector, combined with sharp sectoral divergences renders accurate forecasting difficult. Taking account of the expected recovery in world demand for 2010, output in manufacturing is expected to grow by 1.4 per cent in 2010, up modestly since the last Bulletin. Again, ongoing weakness in the traditional sector is expected to weigh on an otherwise resilient modern sector, albeit to a lesser extent than previously envisaged.

The latest Quarterly National Accounts indicate that output in the services sector also contracted in 2009, with annual output in the fourth quarter for both the Other Services and Public Administration sectors down 2.3 per cent and 3.1 per cent, respectively. Declines were also posted in the Output in the Distribution, Transport and Communications sub-sector which contracted throughout the year with output falling by 7 per cent in annual terms in the fourth quarter of 2009. The NCB Purchasing Managers Index for Services, which excludes retail and wholesale service activities, provides evidence of stabilisation, having moved back towards the 50 mark in the last quarter of 2009, driven by particularly strong gains in the confidence and exports components.

Chart 3: Volume of Industrial Production



Agricultural Output

Preliminary CSO estimates from the 'Output, Input and Income in Agriculture' release suggest that the volume of output in the agricultural sector declined by 4 per cent in 2009, following a 1.2 per cent fall in the previous year and representing the fifth consecutive year of contraction in the sector. The value of agricultural output, however, declined by 18.8 per cent in 2009 and was driven mainly by the substantial price declines that dominated the sector during the year. Final price estimates suggest that output prices

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

	2009 ^{e b}	% change in			2010 ^f	% change in			2011 ^f
	€ million	Value	Volume	Price	€ million	Value	Volume	Price	€ million
Goods output at producer prices ^a	4,733	2.9	-0.8	3.7	4,870	3.5	1.2	2.3	5,041
Intermediate consumption	4,066	-0.3	-1.8	1.5	4,054	3.9	1.8	2.1	4,212
Net subsidies plus services output less expenses	1,846	-2.6			1,798	-2.1			1,761
Operating surplus	1,615	6.1			1,713	3.4			1,771

^aIncluding the value of stock changes.^bCSO estimates.

were down 15.4 per cent on the previous year, while input prices declined 8.8 per cent in annual terms. As the rate of decline in output prices outpaced those of input prices, there was a worsening in the terms of trade of 7.3 per cent in 2009.

The outlook for the sector is for some improvement in incomes following the severe setbacks of the previous two years. The global commodity prices are anticipated to stabilise and pick-up over the coming year and during 2011, while the downward pressure on input prices is expected to persist in 2010, suggesting a strong potential for a return to positive income growth this year. The impact on yields and, consequently, on prices of the severe weather experienced over the past months has yet to be determined but may, on balance, weigh on farm incomes in the near term.

The Labour Market

According to the most recent Quarterly National Household Survey, the deterioration in labour market conditions continued during the final quarter of 2009. One of the most noticeable aspects of the fourth quarter outturn was the magnitude of the fall in full-time employment, with a year-on-year decline of 11.6 per cent. This was, however, partly offset by a 6.7 per cent increase in part-time employment. The sharpness of the employment decline reflects the fact that the labour-intensive construction and manufacturing sectors continue to witness the largest falls — job losses in the construction sector accounted for almost half of the overall decline in employment during the

year to the fourth quarter. Nevertheless, the contraction in employment has been quite broadly based, with declines in nine of the fourteen economic sectors, albeit of varying magnitude. The sectoral composition of the fall in employment has meant that the rise in unemployment has had an unequal impact upon the gender and age profile of unemployment. As a higher proportion of young males are employed in the economic sectors experiencing the sharpest falls in employment, most notably, the construction sector, they have been unduly affected by the contraction in labour demand. Unemployment amongst males aged 15-24 years almost doubled annually in the fourth quarter of 2009. The contraction of labour demand placed considerable downward pressure on the labour force, as evidenced by the 3.1 per cent fall annually in the fourth quarter of 2009. Such a falloff in labour supply was primarily driven by a decline in participation, with the labour force participation rate falling by 1.7 percentage points, year-on-year, in the fourth quarter. Another factor applying downward pressure on the labour force is migratory flows, with the number of non-Irish nationals in the labour force tentatively estimated to have declined by 33,600 during the year to the fourth quarter of 2009. In addition, while actual data is not available, some outward migration of Irish nationals is likely to have added to the net outflow.

The Live Register provides some tentative signs of improvement in labour market conditions during the early part of 2010, with the number of persons on the Register,

Table 6: Employment and Unemployment 2009, 2010^f and 2011^f

(annual average '000)	2009	2010^f	2011^f
Agriculture	96	92	91
Industry (including construction)	411	377	373
Services	1,422	1,385	1,381
Total employment	1,929	1,854	1,845
Unemployment	259	293	282
Labour force	2,187	2,147	2,127
Unemployment rate (%)	11.8	13.7	13.2

Note: Figures may not sum due to rounding.

adjusted for seasonal factors, falling by 2,300 in February. This represents the largest monthly fall since April 2005. Nevertheless, labour market conditions are projected to remain weak in 2010 and 2011 as labour market developments tend to lag business cycle fluctuations. As regards the outlook for employment, weakness is expected to persist throughout the projection period. Given that a further decline in output in year-on-year terms is expected during 2010, labour demand is projected to continue to contract, with an estimated average annual decline of 3.9 per cent. While positive GDP growth is expected in 2011, a further, albeit less severe, decline in employment of around 0.5 per cent is likely reflecting the typical lag between labour market developments and movements in the economic cycle. It is anticipated that a return to positive employment growth will take place during the second half of 2011.

The labour force is expected to continue on its downward trend during 2010 and 2011, with projected declines of 1.9 per cent and 0.9 per cent, respectively. It is anticipated that this downward adjustment will largely reflect the response of migratory flows. Contracting labour demand is expected to have a dampening effect on inward migration as it is envisaged that potential migrants will be discouraged from moving to Ireland. Outward migration is simultaneously projected to gather pace, with previous migrants returning home or moving elsewhere. Accordingly, a net outflow of migrants is expected throughout the projection horizon. Weak labour demand conditions are also projected to weigh upon labour force participation, with the participation rate expected to fall back further in 2010 and 2011.

The projected decline in the labour force during 2010 will serve to partially offset the impact of contracting labour demand and, thereby, limit the upward pressure on the unemployment rate. Nevertheless, a further rise is in prospect, with the unemployment rate expected to average around 13.7 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 expected, with an average of around 13.2 per cent.

Pay

Wage pressures, as measured by average weekly earnings, eased somewhat during the year to the second quarter of 2009³, with a decline of 1.1 per cent on a whole economy basis. However, this decline conceals contrasting developments in the two components of average weekly earnings, namely, average hourly earnings and weekly hours worked. The 1.1 per cent fall in average weekly earnings reflected a sharp reduction in hours worked together with some deceleration in hourly earnings growth owing to cuts in irregular earnings such as bonus payments. This suggests that firms were generally targeting the most flexible elements of pay, such as hours and bonuses, in an attempt to limit labour shedding whilst reducing labour costs. At a sectoral level, the downward movement in average weekly earnings was broadly based, with adjustments across both the private and public sectors in the second quarter of 2009⁴. However, an important consideration in relation to recent sectoral level wage developments, particularly in the industrial sector, relates to changes in the

³ Official pay data is currently limited to the second quarter of 2009.

composition of employment, which can place upward pressure on average wage developments. It is likely that the downward movement in wages continued during the second half of 2009 amid the downturn in economic activity and rising unemployment. An average annual decline in compensation per employee of 2.9 per cent is estimated to have occurred during 2009 as a whole.

Cyclical factors are expected to dominate wage developments during 2010, with a further downward adjustment projected given the backdrop of high unemployment. Furthermore, as announced in Budget 2010, a fall in public sector pay will take effect this year, with deductions ranging from 5 to 8 per cent. Reflecting such a combination of developments, it is estimated that compensation per employee will fall by around 2.8 per cent in 2010. Looking ahead to 2011, some recovery in nominal wage levels is expected reflecting the gradual improvement in economic activity. Nevertheless, growth in compensation per employee seems set to be dampened by the persistent weakness of the labour market. Accordingly, an increase in compensation per non-agricultural employee of 1.1 per cent is envisaged. Combining the outlook for wages with that of employment suggests that a fall in the non-agricultural pay bill of 6.6 per cent is likely in 2010 while a slight increase of 0.6 per cent is projected for 2011.

Inflation

Consumer Prices

The average rate of Irish Harmonised Index of Consumer Prices (HICP) inflation was –1.7 per cent in 2009. Base effects arising from volatility in international commodity prices, especially oil prices, strongly influenced the profile of the headline annual inflation rate during last year.

Strong and increasing negative base effects from energy prices intensified the year-on-year fall in the price level in the third quarter. Abstracting from the subsequent rapidly receding energy base effects, downward pressure on prices continued towards the close of the year. In particular, strong discounting for processed food and non-energy industrial goods reflected the continued falls in demand and the pass-through of lower input costs. These trends persisted into this year culminating in an annual rate of HICP inflation in February of –2.4 per cent while the corresponding annual rate of CPI inflation was –3.2 per cent.

While HICP services prices fell annually by 1.3 per cent in February, trends in prices across its sub-components were not uniformly downwards. Prices for non-essential items, often relating to leisure consumption, have generally recorded stronger price falls. Consumers tend to forego such purchases or show markedly higher price sensitivity when economic circumstances become more challenging and uncertain, with the result that firms are forced to compete more intensely on prices. This has been particularly apparent for a range of personal care items, where prices overall were down 9.2 per cent in February, year-on-year. Also, prices in the restaurants and hotels sector fell by 3 per cent over the same period, with a sharp decline in tourist numbers from abroad intensifying the competitive pressures. Due to broadly similar competitive factors, prices for recreation and culture fell by 1.4 per cent. In contrast, the average price of administered services continued to increase, with medical insurance premiums making a significant positive contribution. Transport prices, which include some administered services items, increased by 4.1 per cent in February although this was heavily influenced by the indirect effects of higher international oil prices. In addition, total education costs increased by 10.7 per cent over the year to February, driven by a particularly large jump in third-level education costs of 20.5 per cent, while total health prices were broadly comparable to February of last

⁴ Average weekly earnings data published in the Earnings, Hours and Employment Costs Survey are gross amounts before deductions for PRSI, tax and other levies. Accordingly, public sector wage developments do not incorporate the public service pension levy. It is, however, necessary to take the pension levy into account in a comparison of sectoral wage developments as public sector pay was effectively cut via the introduction of the pension levy.

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	-1.3	-2.4	-0.6	-2.2	-1.4
2011 ^f	0.7	0.5	1.0	0.3	1.1

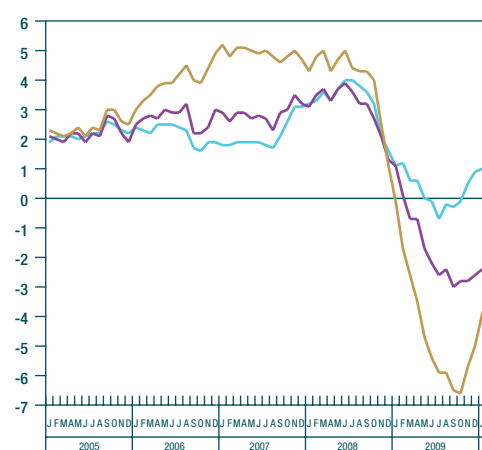
^aGoods and services inflation refer to the HICP goods and services components.

year. Finally, prices for alcohol-related services were almost 3 per cent lower annually mainly due to the impact of recent excise duty changes. These annual inflation trends across components are likely to persist during much of 2010.

Prices for food and non-alcoholic beverages were down annually by 8 per cent in February. However, there are a number of reasons to expect that food prices may level off in the coming months. Firstly, it is estimated that about 20 per cent of food produce sold in the Irish market is imported from the UK and one of the factors that facilitated a large decline in food prices in recent years has been the sharp depreciation of sterling against the euro between mid-2007 and the final quarter of 2009. However, the pass-through of the most recent episode of sterling depreciation is likely to be near complete and, consistent with the Bank's purely technical assumption of unchanged nominal exchange rates, further significant downward price pressures arising from nominal exchange rate movements are not expected to emerge during the remainder of this year or next year. Secondly, international food commodity prices have picked up sharply since last Autumn, which will apply upward pressure on domestic food retail prices. Thirdly, with disposable incomes and employment projected to continue to decline during much of this year, margins will continue to come under pressure but perhaps not to the same degree now that the economic environment generally is showing some early signs of stabilising. Finally, the recent narrowing of the VAT differential between Ireland and the UK, to 3.5 percentage points, along with excise duty changes in Ireland, may help to stem the flow of cross-border shopping and ease the downward pressure on prices by supporting demand on the domestic front.

Chart 4: Consumer Prices

% change Year-on-Year



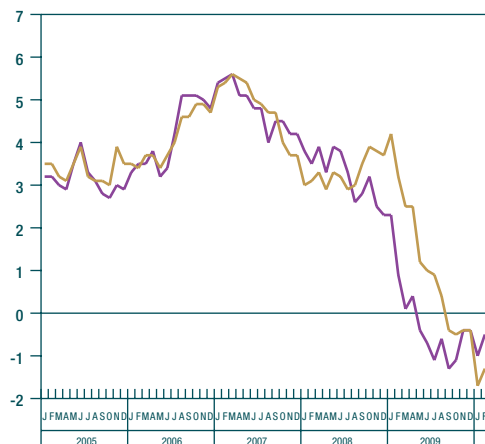
— Ireland: Consumer Price Index
 — Ireland: Harmonised Index of Consumer Prices (HICP)
 — Euro-16: Monetary Union Index of Consumer Prices (MUICP)

Source: CSO

The effects on Irish inflation from a rebound in international commodity prices will likely be mitigated by weak domestic factors such that overall inflationary pressures are likely to remain muted during 2010. In particular, challenging labour market conditions and declines in disposable incomes will constrain demand and the pricing power of firms. There is also some negative carryover from 2009 while upward base effects will play a prominent role and will likely push the headline annual inflation rates into positive territory during the final quarter of this year. Accordingly, the annual HICP inflation rate is projected to record negative inflation of about 1.3 per cent this year. Meanwhile, the annual CPI inflation rate is projected to be about -1.4 per cent this year. Inflation is likely to turn positive in 2011, averaging about 0.7 per cent on a HICP basis with CPI inflation about 1.1 per cent. The risks

Chart 5: Services Sector Inflation

% change Year-on-Year



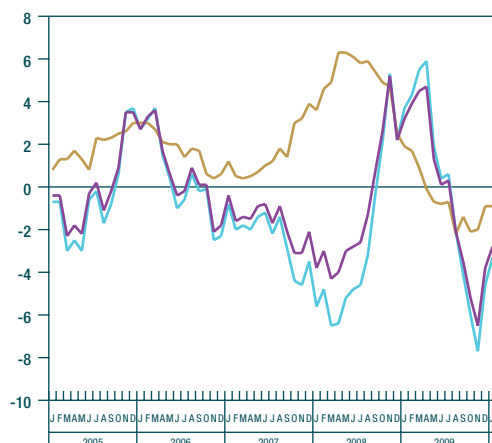
— HICP Services (Overall)
— HICP Core Services

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

Source: CSO

Chart 6: Manufacturing Producer Price Inflation

% change Year-on-Year



— Home Sales
— Total Manufacturing
— Export Sales

Source: CSO

for the inflation outlook appear to be broadly balanced and relate in the main to the projected muted recovery domestically and the evolution of international commodity prices.

Property Prices

The ESRI/permanent TSB house price index

indicates a cumulative nominal fall in house prices of 31.5 per cent between the peak of early 2007 and the end of last year. The annual fall in December was 18.5 per cent, a marked acceleration on the decrease of 9.1 per cent for the same period the previous year. During last year, sentiment weakened sharply and access to mortgage credit tightened, outweighing the further easing in affordability pressures. As the index tends to lag the market by some months and the numbers of transactions have been unusually low of late, the index may understate to a significant extent the actual fall in house prices. Indeed, alternative private sector indices suggest, to varying degrees, that the cumulative fall in prices from peak may be over 40 per cent. Turning to private rents, the CSO quarterly index fell by just 0.7 per cent in February, compared with a fall of 2.4 per cent in November last year. Further signs of an imminent stabilisation or turning point in the official rental index can be observed in the Daft.ie rental index, which recorded a rise of just over 1 per cent in January, the first rise in over two years. The number of properties available to rent declined by 20 per cent, between August last year and February this year, to about 19,000 properties. Although the number of properties available for rent still remains high by historical standards, rents have likely reached a trough. However, there is little prospect of any notable pick-up in rents this year, given the challenging labour market for younger cohorts, further declines in disposable incomes and continued net outward migration.

According to data from the Society of Chartered Surveyors/Investment Property Databank, commercial property prices have fallen by a cumulative 54.5 per cent in nominal terms between their peak of late 2007 and the final quarter of last year. Transaction activity remains subdued but the rate of the decline in capital values shows some signs of moderating, with quarter-on-quarter falls in the region of 5 per cent recorded during the final quarter of last year. This compares with quarterly falls of close to 8 per cent for each of the previous two quarters. According to the Jones Lang LaSalle Irish Rental Index, rents in

Chart 7: Permanent tsb / ESRI House Price Index

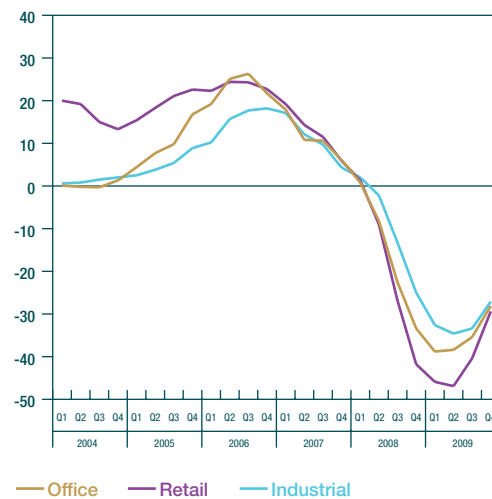
% change Year-on-Year



Source: Permanent tsb/ESRI

Chart 8: SCS / IPD Irish Commercial Property Index

% change in capital values, Year-on-Year



Source: SCS/IPD

the retail sector fell by a further 5.5 per cent in the final quarter of last year, to give a cumulative decline from peak of 22.1 per cent. Rents in the office and industrial sectors began to decline during the second half of 2008 and have since fallen by 23.4 per cent and 25.2 per cent, respectively. The ban on upward only rent reviews, which came into effect recently, is not

retrospective and may only have a modest impact in the short-term. Still, increased flexibility in rents to underlying business demand is warranted and over time will serve to enhance the competitiveness of the Irish economy.

Competitiveness

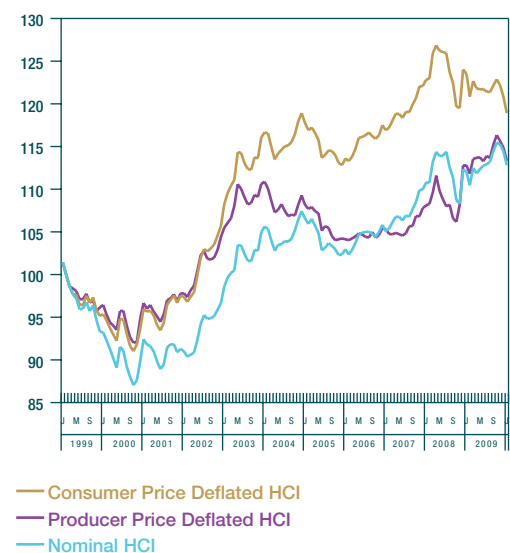
There are increasing signs of an improvement in the underlying competitiveness position of the Irish economy. Although Ireland's nominal effective exchange rate has appreciated over the past few years, domestic price and cost developments are helping to reduce the domestic cost base, both in absolute terms and relative to Ireland's main trading partners. Nevertheless, significant challenges remain, not least in terms of continued high prices in certain sheltered sectors of the economy and the challenges posed by a stronger exchange rate.

Exchange Rate Developments

The euro declined in value against sterling and the dollar in the early part of 2010, which is particularly important given that the UK and US constitute Ireland's two largest trading partners⁵. In the three month period to end-

Chart 9: Harmonised Competitiveness Indicators

Base: Quarter 1, 1999 = 100



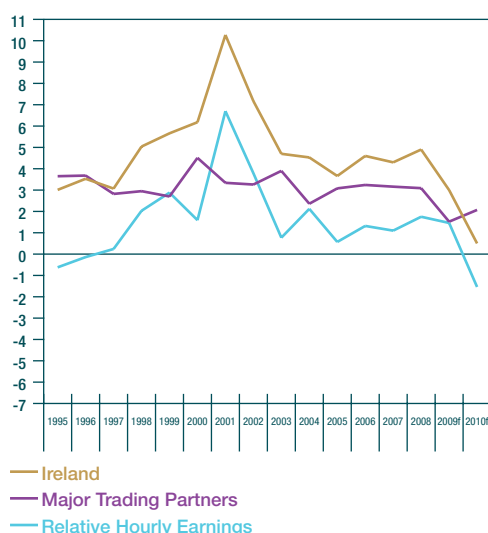
Sources: Central Bank of Ireland and ECB

⁵ The latest full year merchandise trade data show that in 2008, approximately 20 per cent of Irish exports were destined for the US, with just over 18 per cent exported to the UK.

February, the euro depreciated by 3.9 per cent, quarter-on-quarter against the dollar, and by 1.7 per cent against sterling. Despite the recent fall in the value of the euro, the exchange rate has strengthened over the past year as reflected by movements in Ireland's nominal Harmonised Competitiveness Indicator (HCI), which can be interpreted as an effective exchange rate⁶. In the three-month period to end-January (the latest month for which data are available), the HCI was 3.0 per cent stronger than a year previously. In contrast, the consumer price deflated HCI declined for a third successive month in January due in large part to lower inflation in Ireland relative to our main trading partners. As a result, in the quarter to end-January, the real HCI was down 1.2 per cent relative to the previous three months, and down 1.4 per cent year-on-year. This follows an annual decline of 1.5 per cent for 2009 as a whole, which was the first annual decline since 2005. The real HCI has been on a fairly consistent downward trend since the latter part of 2008, which will help to improve Irish price competitiveness.

Chart 10: Hourly Earnings in Manufacturing (in Local Currency)

% change Year-on-Year



Source: Central Bank of Ireland calculations

Productivity and Cost Competitiveness

Economy-wide labour productivity improved in 2009, with an increase in real GDP per person employed by 1.2 per cent. On an hourly basis, the increase was stronger at 3.4 per cent, which was the fastest rate of increase since 2003 indicating a rapid labour market adjustment to the changed economic environment. Compositional changes have also had a significant impact due to the decline in low productivity sectors such as construction. The usual caveat with Irish GDP measures however is again relevant, in that the figures may be heavily influenced by the performance of a certain limited number of multinational firms. In fact, productivity growth on a GNP basis has remained sluggish. Despite this, the latest preliminary CSO Quarterly National Accounts data again show a further pick up in measured productivity at the end of 2009. Given the labour market and macroeconomic outlook described above and the restructuring underway in the economy away from lower productivity sectors, notably the building and construction sector, it is envisaged that productivity growth will become more broadly based in 2010 and 2011. In light of this, productivity on a GDP per person employed basis, is projected to increase by 3.5 per cent this year and by a further 3.3 per cent in 2011.

The recent improvement in productivity coupled with the marked adjustment in labour market wages resulted in a significant fall in unit labour costs in Ireland in 2009, by an estimated 4.0 per cent. The outlook for wages and labour productivity growth should lead to a further improvement in labour cost competitiveness over the short-term, with unit labour costs expected to fall by 6.1 per cent in 2010 and by a further 2.1 per cent in 2011. This compares favourably with projected trends in Ireland's major trading partners according to European Commission estimates, with unit labour costs in the euro area expected to increase by 1.2 per cent per annum on average between 2009 and 2011. In the UK, unit labour costs are expected to increase by 1.7 per cent on average over the same period, as compared with an average annual decline of 4.1 per cent in Ireland. That said, the strong depreciation of sterling against the euro of 11.9 per cent in 2009, is likely to

⁶ For a more detailed description of this indicator and other competitiveness indicators, see article "Measuring Ireland's Price and Labour Cost Competitiveness" in Quarterly Bulletin 1, 2010.

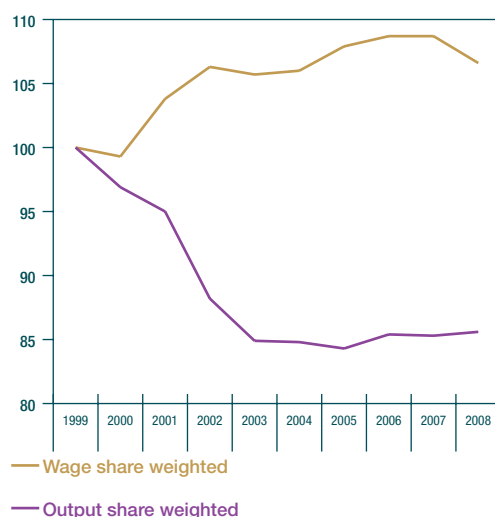
Table 8: Comparative Price Level Indices for Ireland in 2008, EU27 = 100

	Index	Irish Ranking in EU
Health	150.2	1 st
Transport	110.7	4 th
Electricity, gas and water	113.4	6 th
Education	150.2	5 th
Government Services	136.3	3 rd
Total Goods	112.0	4 th
Total Services	136.2	3 rd

Source: Eurostat, Purchasing power parties (PPPs), price level indices and real expenditure for selected ESA95 aggregates.

Chart 11: Unit Wage Costs in Manufacturing

Base: 1999 = 100



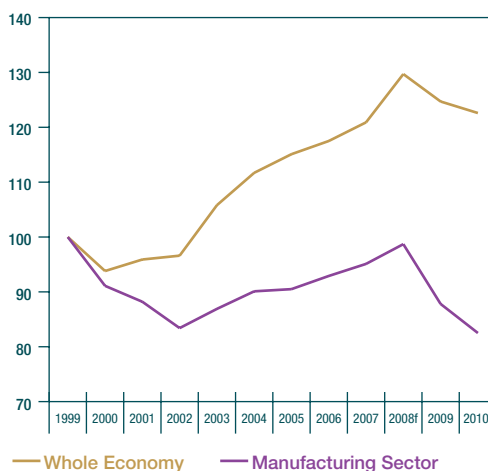
Source: Central Bank of Ireland calculations

have more than offset the gain in Irish labour cost competitiveness *vis-à-vis* the UK.

While there would appear to be downward price and cost pressure in certain sectors of the economy, high prices in the non-traded or sheltered sector in Ireland is evident when international comparisons are made. In Table 8, comparative price level indices are shown for Ireland, relative to the EU in 2008. Abstracting from differences in quality, it is evident that the prices for non-traded goods and services are significantly higher in Ireland than in the rest of the EU, and notably so, in the area of health and education, where price levels were 50 per cent above the EU average in 2008, with Ireland ranking as the most expensive in terms of health and the third most expensive in terms of education. For overall goods prices, Ireland was much closer to the EU average in 2008, reflecting the open nature

Chart 12: Irish Unit Wage Costs Relative to Main Trading Partners (in Common Currency)

Base: 1999 = 100



Source: Central Bank of Ireland, ECB and AMECO

of the economy and the competition provided by imports. It is imperative that improvements in price competitiveness are achieved in the non-traded sectors in the years ahead, whether it is in the form of more competition, improved regulation or a combination of both.

Public Finances

In 2009, the Exchequer deficit was €24.6 billion, which was approximately €0.6 billion better than estimated in Budget 2010. For 2010, the Budget is targeting an Exchequer deficit of €18.8 billion and a General Government Deficit of 11.6 per cent of GDP, compared with an estimated Deficit of 11.7 per cent in 2009.

Revised Estimates for 2010

In February, the 2010 Revised Estimates Volume (REV) was published. This provides

Table 9: Exchequer Returns, end-February 2010

	2009 Outturn €m	2009 End-February €m	2010 End-February €m	End-February % Annual Change
Current Expenditure				
— Voted ^a	40,256	7,009	6,442	-8.1
— Non Voted ^b	4,992	635	846	33.2
Total	45,248	7,644	7,288	-4.7
Current Revenue				
— Tax revenue	33,043	5,759	4,736	-17.8
— Non-tax revenue ^c	836	60	58	-4.9
Total	33,879	5,819	4,794	-17.6
Current Budget Balance	-11,369	-1,824		-2,494
Capital Budget Balance	-13,272	-260	86	
Exchequer Balance	-24,641	-2,085	-2,407	
General Government Balance (% of GDP)^d	-11.7			
Source and Application of Funds				
Total Borrowing/Repayments	-24,474	-6,398	-7,201	
Total Increase in Exchequer Deposits	-167	4,313	4,793	
Exchequer Balance	-24,641	-2,085	-2,407	

^aGovernment current expenditure voted on by the Dáil in the areas of Social Welfare, Health, etc.

^bDebt servicing, judicial salaries and pensions and EU Budget contribution.

^cCentral Bank surplus income, National Lottery surplus, interest and dividends.

^dBudget 2010 estimate.

additional information on the profile for expenditure for 2010 as set out in the Budget, as well as details on the 2009 outturn. The REV shows a targeted 3 per cent reduction in overall gross expenditure⁷ in 2010 to €61.2 billion, from €63.1 billion in 2009. Within this, current expenditure is projected to fall by 1.8 per cent, with capital spending down 12.3 per cent. In terms of the former, this includes higher welfare related spending in 2010 given the labour market outlook. The Exchequer pay bill is projected to fall by 7.7 per cent in 2010, a saving of €1.3 billion, as a result of the cuts to the public sector pay bill. The projected fall in capital spending in 2010 is particularly large, although the impact of this is ameliorated by significantly lower tender prices. The REV also show that numbers employed in the public service (in whole time equivalents), are projected to fall marginally in 2010 to 309,740 persons (down 0.1 per cent).

Exchequer Returns

The Exchequer returns figures for the first two months of 2010, show an Exchequer Deficit of

€2.4 billion up from €2.1 billion over the same period in 2009 (Table 9). On the Revenue side, tax receipts at end-February amounted to €4.7 billion, a fall of 17.8 per cent year-on-year, which was largely anticipated, although there was a modest shortfall of 1.3 per cent. Within this, VAT and Income taxes, the two largest tax heads, were down annually by 13.4 and 11.8 per cent respectively. Furthermore, income taxes were 5.9 per cent behind their expected target, although VAT receipts were 4.2 per cent ahead of profile. The shortfall in income taxes is of some concern although it is still too early in the year to draw any firm conclusions. Corporation tax was also down sharply in year-on-year terms, although much of this was anticipated. Capital taxes in general remained very weak in the first two months of the year, reflecting the weakness in the housing sector and in asset markets in general, but their significance in terms of the overall public finances has been much reduced.

On the expenditure side, total net voted spending fell by 10.2 per cent in the year to end-February, to €7.2 billion. This was driven by an 8 per cent fall in current spending and a

⁷ This includes voted expenditure and expenditure from the Social Insurance and National Training Funds.

25 per cent reduction in capital expenditure. These large annual decreases reflect the policy measures introduced over the past year as well as timing issues. For 2010 as a whole, a targeted reduction of 1.9 per cent in net voted spending is projected in the REV. In contrast, there was a further significant increase in non-voted current expenditure in the first two months of 2010, much of this due to much higher national debt interest payments. The latter increased to €363 million by end-February 2010 from €193 million a year previously. As a result, national debt interest and servicing costs doubled as a share of tax revenue from 3.3 per cent in February 2009 to 7.7 per cent in February 2010.

Exchequer Financing

The Exchequer Returns show borrowing of €7.2 billion in the first two months of 2010, up from €6.4 billion at end-February 2009. This funding

was mainly raised through the issuance of Government bonds. This borrowing, coupled with the Exchequer Deficit, resulted in an increase in Exchequer deposits of €4.8 billion in the first two months of the year (Table 9).

Conclusion

The Exchequer Returns for end-February were broadly in line with expectations for a third successive month. This tentatively points to a further stabilisation in the public finances, albeit at a very low level. Tax receipts are expected to improve as the year progresses, with the 2010 Budget projecting a 6 per cent fall in tax receipts for the year as a whole. On the expenditure side, significant consolidation measures have been introduced since mid-2008. It is imperative that current expenditure in 2010 is in line with the targets set out in Budget 2010 and the REV, as tax receipts are likely to remain weak given the economic outlook.

Monetary and Financial Market Developments

Overview

In the opening months of 2010, financial markets have been somewhat more volatile than in the second half of 2009. Market participants' positive expectations of the broader economic outlook were tempered by developments in the sovereign debt market, particularly in the euro area, as well as by further evidence that the recovery in the major economies was likely to be somewhat uneven. Meanwhile, the announcement of more detailed exit strategies from the non-standard support provided by monetary authorities during the height of the crisis through 2008 and 2009, and announcements on bank regulatory reform in the United States, were also being factored into market developments. Domestically, the final preparatory stages for the transfer of land and development loans and related assets to the National Asset Management Agency (NAMA) were coming to a close at the time of writing.

Equity markets began to turn in mid-January 2010 following the upward trend in stock prices which was evident from March 2009. Financials in the euro area generally underperformed relative to the market in January and February 2010. Debt market funding has, however, improved somewhat for financial institutions in recent months, including those resident in Ireland. Meanwhile, despite some volatility, government bond yields in the euro area declined between end-2009 and end-February 2010, with Greece and Portugal being the only exceptions. This development was mostly due to an increased appetite for certain sovereign debt, given the concerns over the fiscal sustainability in some euro area Member States. The yields on Irish Government bonds moved in line with the euro-area markets generally, although the greater relative flow into German debt meant that yields over Bunds increased marginally at the ten-year maturity. At the time of writing, certain Member State governments, including Greece, had announced plans to significantly curtail their budget deficits. The euro group were discussing emergency financing measures by way of bi-lateral support for Greece in the event that such measures are required.

The euro money market remained calm in early 2010, supported by the continued accommodative monetary policy stance of the Eurosystem. Risk spreads remained relatively stable as the Eonia and longer-term Euribor rates generally declined by a few basis points.

The Governing Council announced further details of the gradual exit strategy from the non-standard support measures introduced during the crisis, given the continued normalisation of the euro money market. Meanwhile market participants expect inter-bank lending rates to increase marginally through 2010 and into 2011, although not at the same pace as they had expected at end-2009.

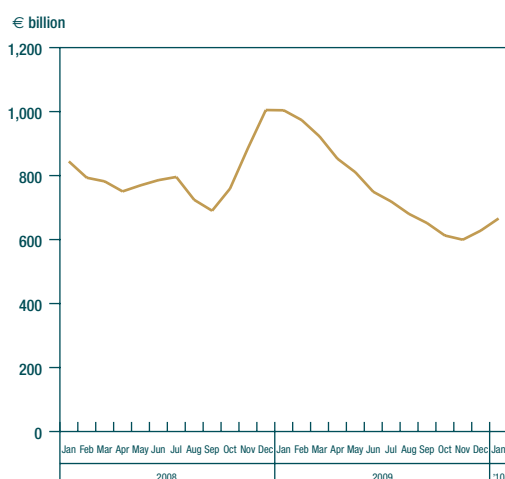
Credit developments, both domestically and in the euro area as a whole have been muted, consistent with the current stage of the economic cycle. Credit advanced to Irish households declined over the year ending January 2010 by 2.2 per cent, whereas similar figures for the euro area show an increase of 1.6 per cent. Meanwhile, credit advanced to Irish non-financial corporations declined by 4.3 per cent over the same period (minus 2.7 per cent for the euro area). Irish credit institutions have also written-down a significant portion of their loan book, particularly with reference to land and development loans in recent months. For the participating institutions, these loans will be purchased by NAMA in the coming months. The subsequent capital requirements for these institutions, and the wider restructuring of the domestic financial system will then become clearer. A return to a healthy banking system is a necessary condition to facilitate sustainable credit growth and support further economic recovery.

A: Financial Markets

Bank Funding and Money Market Developments

The wholesale bank funding markets remain challenging but have, in general, improved markedly on the situation at the height of the crisis. The trend of normalisation continued into early 2010 as access to debt and equity markets by financial institutions increased. Gross issuances of debt securities by euro area monetary financial institutions (credit institutions and money market funds) has been increasing since late 2009 following a steady decline earlier in the year. This decline in early 2009 was partly related to base effects, as there was significant recourse to debt markets following the introduction of various guarantee schemes by some euro area governments in late 2008. The recent increase in issuance, however, comes at a time where many of these guarantee schemes are coming to an end or being revised with different eligibility criteria. It also comes at a time when the exit strategy concerning the emergency support to the money markets has been clearly signalled by the Governing Council.

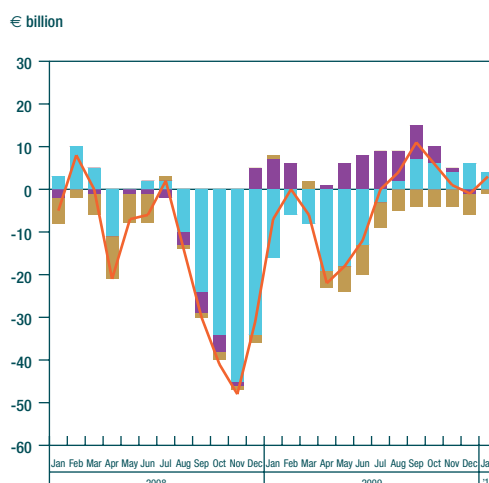
Chart 1: Gross Issues of Debt Securities by Euro Area MFIs (3-month moving average)



Source: ECB.

Meanwhile the outstanding amount of debt securities issued by Irish resident credit institutions continued to increase through most of the latter half of 2009 and into 2010. This follows a sharp contraction in the amount of outstanding debt securities issued by these institutions from mid-2008 through to early 2009. The improvement up to November 2009 was driven by increases in debt securities issued with a maturity of less than two years, with domestic banks being particularly active in this market, given the scope of the original Government guarantee from autumn 2008. The contraction in debt securities seen at that time was in the short-term (i.e. less than one year maturity) notes. The issuance of these securities has, however, been increasing on a rolling 3-month basis since August 2009. Meanwhile the contraction in debt securities with a longer term original maturity (over two years) has been minimal in recent months. This is consistent with the Irish results of the Q4 2009 Bank Lending Survey (BLS), which included questions on access to wholesale funding. Irish respondents to the BLS noted that access to wholesale unsecured money markets as well as the market for debt securities improved in the final quarter of 2009 and that conditions were expected to improve further during the first quarter of 2010 across the maturity spectrum.

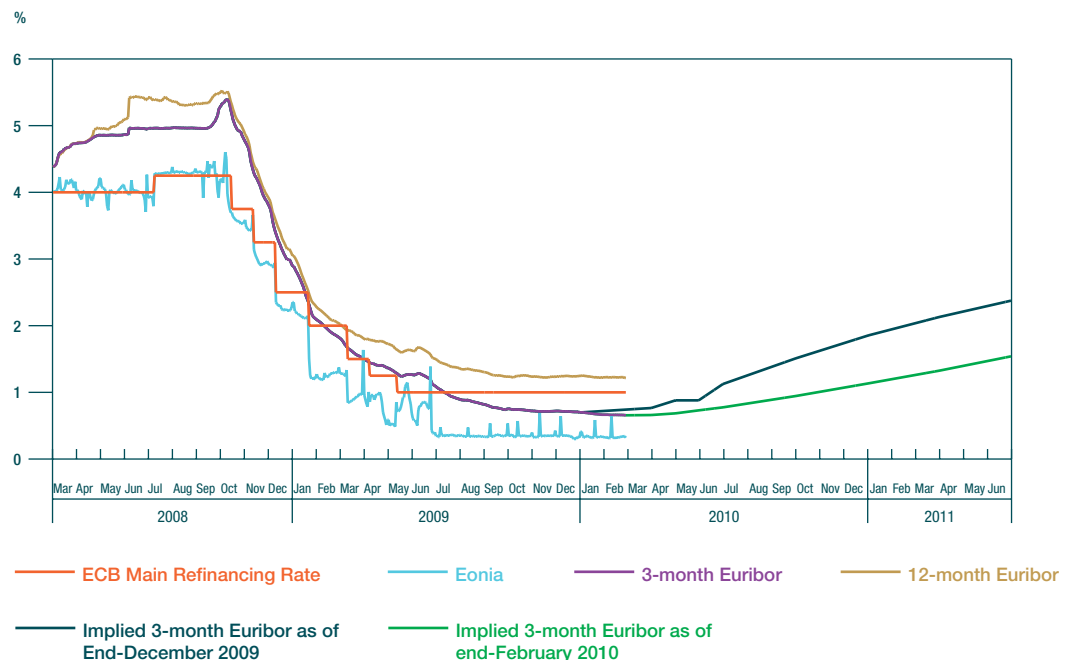
Chart 2: Net Issues of Debt Securities by Irish Resident Credit Institutions (Rolling 3-month change)



■ Maturity over 2 years ■ Maturity up to 1 year
■ Maturity over 1 year and up to 2 years — Net Change

Source: CBFSAI.

Chart 3: Main ECB and Money Market Interest Rates

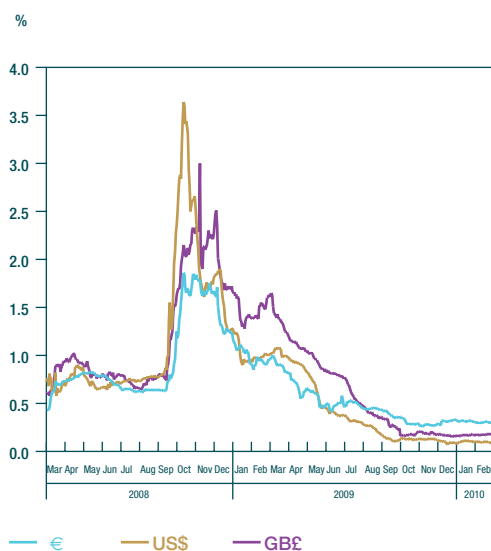


Source: CBFSAI and Thomson Reuters Datastream.

The Governing Council has maintained the ECB MRO rate at 1 per cent. Unsecured inter-bank lending rates across all maturities have declined marginally in recent months and, in the case of the overnight Eonia rate and the 3-month Euribor rate, have remained consistently below the ECB MRO rate since June and July 2009, respectively, as conditions in the money market normalised. The money market yield curve, as represented by the spread between the 12-month and 1-month Euribor, was relatively unchanged at end-February 2010 compared with end-December 2009. According to the implied path derived from 3-month Euribor futures, however, market participants at end-February did not expect interest rates to rise as fast over the coming year as they had expected at the end of 2009. Market participants at end-February expected the 3-month Euribor to be some 80 basis points lower by mid-2011 than what had been expected at year-end 2009 for the same period. This reflects concerns surrounding the pace of economic recovery in the euro area given recent developments in the sovereign debt markets in the opening months of 2010. These concerns have not, however, fed through to general levels of uncertainty in the euro

money market, as spreads between unsecured and secured rates, as represented by Euribor-OIS spreads were relatively unchanged between end-December 2009 and end-February 2010. These spreads, which declined on a relatively consistent basis through 2009 following their peak in autumn 2008, still remain above those prevailing before the onset of the turmoil in financial markets in August 2007.

The Eurosystem continued to supply its counterparties with liquidity through the main and longer-term refinancing operations using full allotment. In line, however, with the gradual exit strategy from the enhanced credit support mechanism announced by the Governing Council, the final 12-month LTRO and 6-month LTRO were settled in December 2009 and March 2010, respectively. Consistent with the continued normalisation of money market conditions, these operations were not offered at the prevailing MRO rate, as has been done for all refinancing operations since the onset of the crisis. The rate for these operations will be fixed at the average MRO rate over the maturity of the operation. In March 2010 the Governing Council announced further details of the gradual wind-down of the enhanced credit

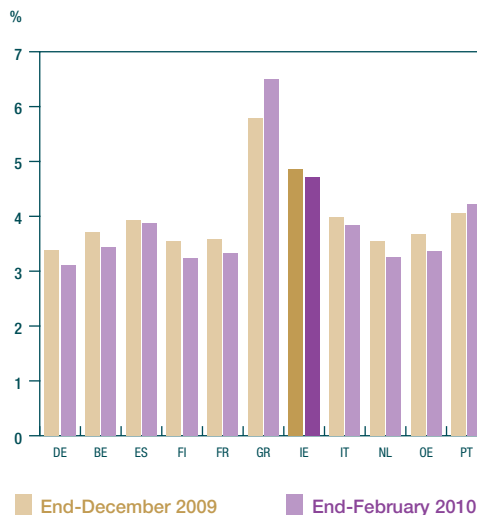
Chart 4: 3-Month Euribor (€) and Libor (GB£, US\$) Spreads versus Overnight Index Swaps

Source: Thomson Reuters Datastream.

support measures, specifically that the regular 3-month refinancing operations will be conducted as a variable rate tender from April 2010 and that the practice of full allotment for MROs will continue at least until October 2010. As part of the Eurosystem monetary policy operations, the Irish Central Bank had operations of just under €85 billion outstanding with credit institutions at end-February 2010, down from €97.7 billion at end-January. Approximately 90 per cent of this amount was in LTROs, as it has been for some time, consistent with the general trend evident across the Eurosystem, as credit institutions have opted to lock-in their liquidity requirements at the available MRO rate of 1 per cent.

Sovereign Debt Market

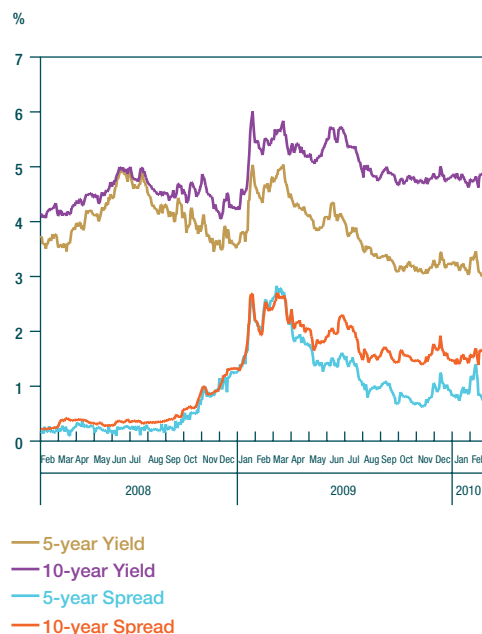
In the first two months of the year, ten-year government bond yields decreased slightly for the majority of euro area countries except for Greece and Portugal. The downward trend in yields was partly due to investors' lack of appetite for more risky bonds given this uncertainty and the return to safe-haven flows exerted downward pressure on the yields of the majority of euro sovereign bonds.

Chart 5: Euro Area Ten-Year Government Bond Yields

Source: Thomson Reuters Datastream.

In general there was a decoupling in the market's view between Greece and the rest of the euro area, which was reflected in the yield developments for most euro area sovereigns, but was less pronounced for some, including for Irish bonds. The Irish Government ten-year yield widened slightly *vis-à-vis* the German Government ten-year yield, as the spread between German bond yields and those of most other euro area states increased. This was the opposite of what was evident in Q4 2009 where the majority of euro area spreads fell against Germany. Meanwhile, the Irish five-year yield remained relatively stable in the opening months of 2010 *vis-à-vis* its German equivalent. The Irish ten-year yield averaged 4.8 per cent, while the five-year yield averaged 3.2 per cent in the opening two months of 2010. The slope of the Irish yield curve flattened in the first month of the year before steepening again in February. During this period, the NTMA was able to raise €3.7 billion in their monthly auctions with a relatively strong bid to cover ratio showing that there was still strong demand for Irish Government bonds. Despite this, Irish ten-year yields and credit default spreads still remained among the highest in the euro area, albeit at much lower levels than mid-2009.

Chart 6: Irish Government Bond Yields and Spreads over German Equivalents



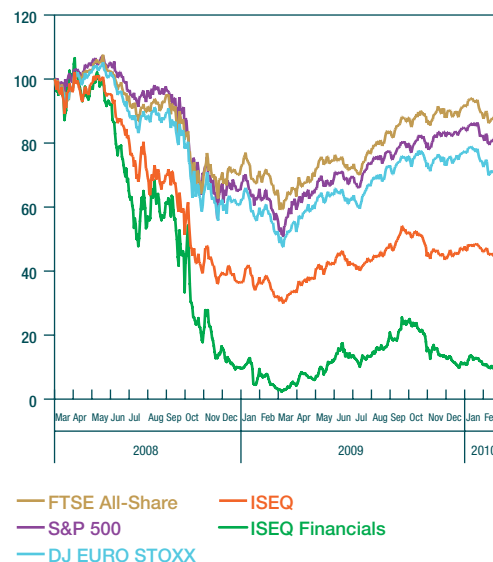
Source: Thomson Reuters Datastream.

Equity Markets

Equity markets in both Europe and the United States recorded losses in the opening two months of 2010, bringing to an end the upward trend in stock prices evident since March 2009. On an annual basis, however, the major international indices had increased by between 39.4 per cent (DJ EURO STOXX) and 50.3 per cent (S&P 500) in the twelve months ending February 2010. The ISEQ Index of Irish shares had risen by 38.5 per cent over the same period.

Developments in the first two months of 2010 saw markets in the United States and the United Kingdom decline by around 1 per cent compared with 2009 year-end, whereas the ISEQ and euro area stock prices (DJ EURO STOXX) were 3.4 and 6.5 per cent lower, respectively. Underlying these aggregate trends was a different experience for financial sector stocks in the euro area and the US and UK. Financials in Europe, generally underperformed relative to their respective aggregate indices, whereas those in the US performed better than the market as a whole. Markets were generally affected by the announcement of the Obama

Chart 7: Irish and International Share Price Indices (end-February 2008=100)



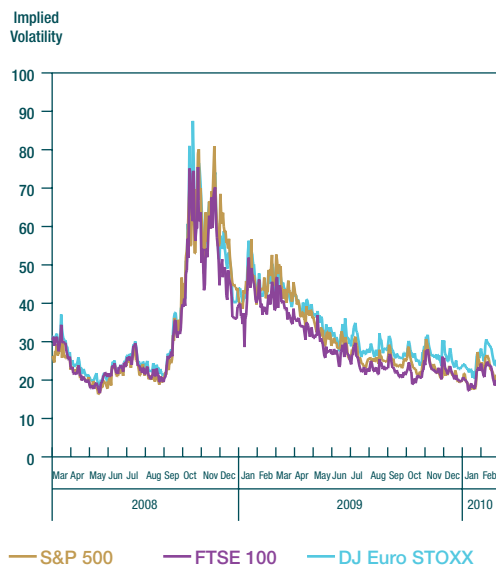
Source: Thomson Reuters Datastream.

administration's regulatory reform of the banking sector in the US and the intensification of concerns over the fiscal position of some euro area Member States. Stock-market volatility rose notably at times during late January and early February 2010, but has since declined. The movements in the volatility measures reflect the mixed macroeconomic news during the opening months of 2010.

Foreign Exchange Developments

Over the first two months of 2010 the euro depreciated against the US dollar and the Japanese yen by 5.8 per cent and 9.2 per cent, respectively. The euro strengthened marginally against sterling (0.5 per cent) during the same period. For the dollar rate, this continued a trend evident since late November 2009, which has seen the euro give up some of the gains against the dollar seen through Q2 and Q3 of 2009. At the end of February 2010, the euro was trading at 2.7 per cent below its 2009 average against the dollar. The trend of depreciation against the Japanese yen has been more pronounced in recent months, with the euro trading at 7.2 per cent below its 2009 average against the yen by end-February 2010. Meanwhile, after depreciating on a relatively

Chart 8: 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 FTSEIX index. DJ EURO STOXX is the implied volatility of DJ EURO STOXX 50 options taken from the VSTOXX index.

consistent basis through most of Q4 2009, and quite sharply in January 2010, the euro began to strengthen notably against sterling during February 2010. At end-February the euro was trading at approximately its 2009 average against sterling, however the 2009 average masks the significant swings in the euro/sterling rate witnessed through 2009. Among the factors underlying the euro's recent appreciation against sterling is uncertainty surrounding the composition of the next UK Government following elections expected there in mid-2010.

B: Money and Credit

Monetary Aggregates

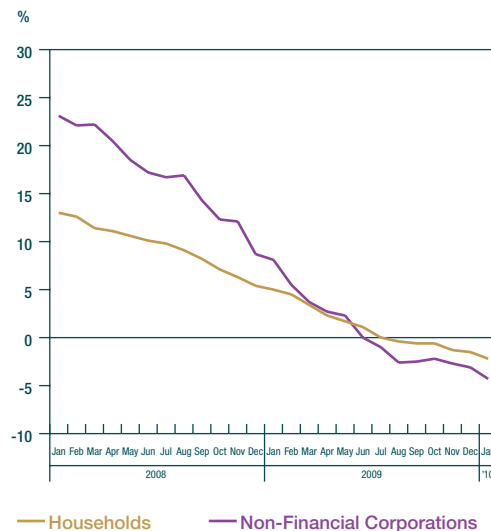
The euro area broad money supply (M3) increased by 0.1 per cent on an annual basis in January 2010, having declined by 0.3 per cent over 2009. The annual increase in January was mainly due to base effects, and the underlying trend of weak M3 growth evident through 2009 is likely to continue for some time. The Irish contribution to euro area M3 increased by 2.5 per cent on an annual basis

in January 2010, with the annual growth averaging 1.3 per cent in the three months ending January 2010. The annual growth rate averaged 2.6 per cent in the three months ending December 2009, highlighting the strong M3 growth in late Q3 and early Q4 2009, but, similar to the euro area as a whole, this has now been replaced in the most recent months with more muted broad money expansion in Ireland.

Underlying the increase in the Irish contribution to euro area M3 has been a significant expansion in M1 here from mid-2009, which recorded annual growth averaging 10.7 per cent in the three months ending January 2010. Currency in circulation had grown in excess of 40 per cent on an annual basis through most of 2009, mostly due to the large increase in currency holdings in the face of uncertainty following the Lehman Brothers collapse in October 2008. The annual rate of change in currency in circulation has declined in recent months as the base effect of this event passes, and was just 8.3 per cent in January 2010. There was also a significant reversal in the annual rate of change in overnight deposits in the third quarter of 2009 which contributed strongly to M1 growth. After declining consistently on an annual basis since April 2008, overnight deposits held at Irish credit institutions increased on an annual basis again in September 2009, and annual growth averaged 10.4 per cent in the three months ending January 2010.

This increase in overnight deposits is mirrored at a euro area level and is partly explained by the reduced opportunity cost of holding overnight deposits vis-a-vis short-term time deposits (i.e. with agreed maturity up to 2 years), given the relative developments in interest rates for term and overnight deposits since September 2008. The fall in interest rates for time deposits has now made it less costly for the money-holding sectors to keep their assets in a more liquid form of overnight or short-term savings deposits (redeemable at notice up to 3 months). This can also partially explain the continued decline in M2-M1, which

Chart 9: Household and Non-Financial Corporations Credit, Annual Change



Source: CBFSAI.

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 are also excluded. See Box A 'Measuring Credit Growth — A New Approach', in Monetary and Financial Market Developments, CBFSAI Quarterly Bulletin No.1 2010. Back-data of these series to 2004 are available at http://www.centralbank.ie/frame_main.asp?pg=sta_late.asp&nv=sta_nav.asp.

was evident both in Ireland and at a euro area level since the second half of 2009. There is also evidence of funds being moved out of the M3 measure and into less liquid assets as investors search for yield given the low short-term interest rate environment and the relatively steep yield curve which exists as a result.

Developments in Private-Sector Credit Advanced by Irish Resident MFIs

The annual rate of change in credit advanced to Irish households and non-financial corporations (NFCs) continued to decline in recent months. For NFCs, credit outstanding peaked in August 2008 and the annual rate of change turned negative in July 2009. By end-January 2010, NFC credit was 4.3 per cent lower than it had been in January 2009 when analysing the transactions related flow of credit. The outstanding amounts of NFC credit on the balance sheets of Irish resident credit institutions had, however, declined by over 11

per cent in the same period, due mainly to write-downs of loans and increased provisions for bad debts. The flow of NFC credit based solely on transactions was negative for four consecutive months from October 2009 through to January 2010, the longest period of decline since these data became available. This is consistent with the Irish results of the euro area Bank Lending Survey for Q4 2009, which indicated that the demand for credit from NFCs continued to weaken as credit standards tightened simultaneously.

Household credit outstanding peaked in November 2008, and has been declining at a consistent but less rapid pace than NFC credit since then. The decline was initially related to consumer and other non-mortgage related credit, although residential mortgages also began to decline from Q2 2009. The annual rate of change in household credit turned negative in August 2009, and stood at minus 2.2 per cent in January 2010. For nine out of the twelve months in 2009 the flow of household credit based solely on transactions was negative, as repayments were higher than draw-downs of loans during these months.

The outstanding stock of residential mortgage lending (inclusive of securitisations) declined by €269 million during January 2010, to €147.4 billion. This followed declines of €134 million and €19 million in November and December 2009 respectively. The level of outstanding mortgages has been declining consistently since its peak of €148.5 billion in March 2009. Mortgage debt outstanding fell on a year-to-year basis by approximately €1.1 billion in January 2010, or 0.7 per cent.

The latest data on the breakdown of residential mortgages relating to Q4 2009, continue to show that the decline in residential mortgage lending has mostly been concentrated in buy-to-let (BTL) mortgages and lending for the purchase of holiday homes (HH). The annual rate of change in principal dwelling house (PDH) mortgages remained positive at 0.2 per cent, compared with year-on-year growth of 1.9 per cent in Q3 2009, and 6 per cent in Q4

Box A: The Impact of NAMA on Central Bank Statistics

The purchase of land and development and associated loans from participating credit institutions by the National Asset Management Agency (NAMA) will have a noticeable impact on the statistics published by the Central Bank. The outstanding amount of loans on the aggregated balance sheet will fall significantly over the months in which these purchases take place. While most of these loans will be with respect to NFC counterparties, some may also come from the household sector as this classification also includes loans given to partnerships or individuals for the purpose of investment.

The holdings of securities, however, will increase by the value of the bonds issued by the NAMA special purpose vehicle (SPV) in acquiring these loans. The SPV structure is considered to be outside of the Government sector, as the majority of its share capital is being sourced from private investors. The securities issued by the NAMA SPV will, therefore, be shown on the credit institution's balance sheet as holdings of securities issued by a non-bank financial intermediary (OFI). The majority private-sector ownership also means that the securities issued by the NAMA SPV will not create a liability on the Government's balance sheet or increase Government debt for the purposes of the Stability and Growth Pact. The Government does, however, fully guarantee the bonds issued by the NAMA SPV.

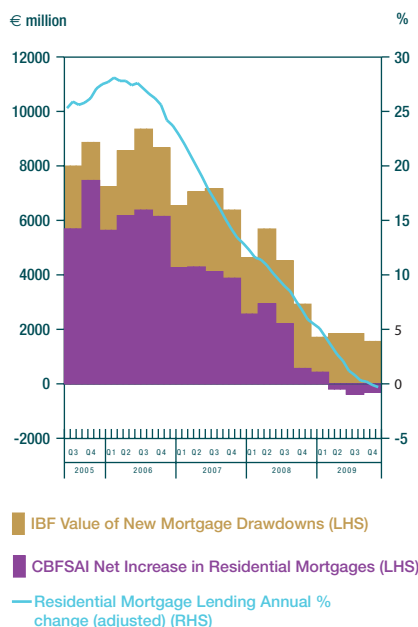
The value of the NAMA bonds issued will reflect loans transferred from both resident and non-resident offices of the participating institutions. These loans by non-resident offices would not have been captured previously in the monetary and financial statistics published by the Central Bank, which only refers to the

business written out of credit institutions' Irish resident offices.

If not accounted for correctly, these developments would cause significant difficulty in interpreting changes in the flow of credit to Irish NFCs and households. The methodology currently being introduced by the Central Bank for calculating credit growth¹ is well placed to address these difficulties. The rates of change in household and NFC credit (which are referenced above and are available on the Central Bank website) will be adjusted to account for these loan transfers. The statistical infrastructure allows for the change in credit advanced to households and NFCs to be calculated on the basis of actual transactions that take place over the period, i.e. loans being drawn-down and repaid. As a result, the flow of credit to Irish resident households and businesses will be accurately reflected in the rates of change published by the Central Bank. This presentation of credit growth statistics will be further enhanced and expanded from July 2010, with a new monthly Money and Banking statistical publication.

¹ See Box A 'Measuring Credit Growth — A New Approach' in Monetary and Financial Market Developments, CBFSAI Quarterly Bulletin No.1 2010.

Chart 10: Quarterly Increase in Residential Mortgages — New Lending and Outstanding Amounts



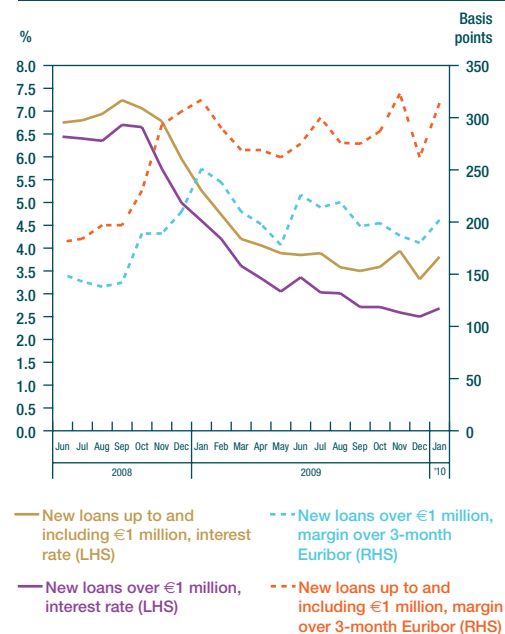
Source: CBFSAI and the Irish Banking Federation.

2008. PDH mortgages outstanding were €112.9 billion at end-2009². Meanwhile, BTL and HH mortgages were a combined 1.9 per cent lower in Q4 2009 compared with Q4 2008. The underlying decline in these mortgages is likely to have been greater, as a reclassification of PDH mortgages to HH mortgages that took place during Q4 2009 biased the growth rate of the latter upwards. The annual rate of decline in the value of new mortgage business³ in Q4 2009, as reported by the Irish Banking Federation/PricewaterhouseCoopers Mortgage Market Profile, slowed to minus 42.7 per cent from minus 58.2 per cent in Q3 2009. The annual rate of decline in the volume of new activity in the mortgage market has also slowed over Q4, particularly for first-time buyers and mover-purchasers with annual rates of decline of 11.3 per cent and 38.4 per cent respectively.

² The Financial Regulator is now publishing a series on principal dwelling mortgages with a particular emphasis on mortgage arrears. This series shows PDH mortgages outstanding at end-Q4 2009 as €118.3 billion. The difference between the two series arises mostly from the inclusion of sub-prime mortgage providers in the Financial Regulator survey. These lenders are not by statute credit institutions and are therefore not included in the reporting population for the monetary and financial statistics collected by the Central Bank for the purposes of contributing to euro area monetary analysis.

³ Excluding top-up and re-mortgaging activity.

Chart 11: New NFC Loans with Floating Rate and up to One-Year Initial Fixation



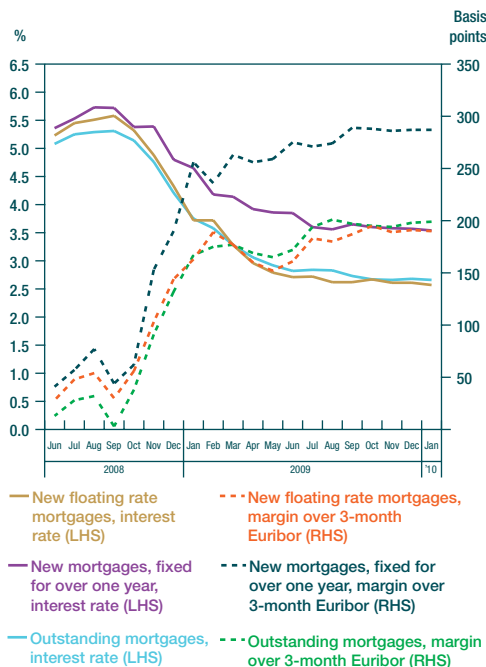
Source: CBFSAI.

Domestic Lending and Deposit Rates

Interest rates on loans and deposits remained largely unchanged in the past few months, following the steep declines between September 2008 and May 2009, when the ECB main refinancing rate was cut by a total of 3.25 percentage points. Further falls occurred in late 2009 largely due to easing inter-bank rates being passed through to household and NFC customers. However, margins between lending rates and Euribor have widened further.

Rates for new floating rate NFC loans over €1 million increased in January 2010 for the first time since June 2009. The rate increased by 9 basis points between November 2009 and January 2010 for these larger loans, and the margin over 3-month Euribor increased by 15 basis points. Rates for new NFC loans of less than €1 million rose in January, in part reversing a sharp fall in December 2009. Overall, this rate is 13 basis points lower than in November, but is still higher than the average rate during the second half of 2009. This new lending rate for smaller loans, which is used as a proxy for lending to SMEs, is

Chart 12: Mortgage Rates to Households

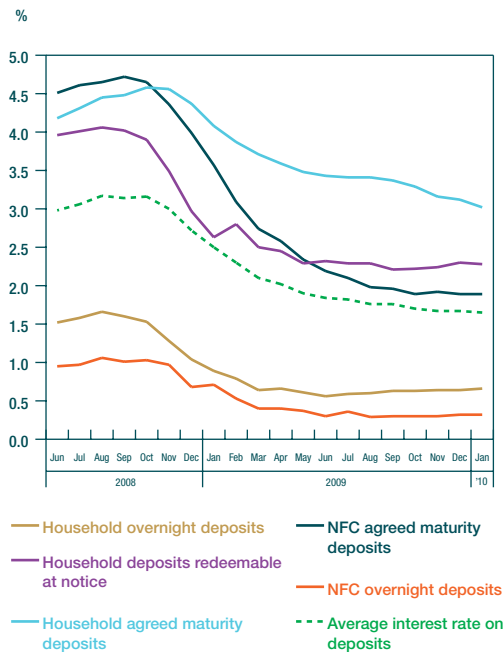


Source: CBFSAI.

1.5 percentage points lower than at the beginning of 2009, and margins over inter-bank rates are around the same level as at that time.

Interest rates for outstanding and new mortgages continued to fall, and remain among the lowest in the euro area. New mortgages with floating rates or up to one year fixation — constituting around 85 per cent of new business volumes — fell by 4 basis points between November 2009 and January 2010. New mortgages with rate fixation periods greater than one year, which have been increasing as a percentage of new mortgages in recent months, also fell by 4 basis points over the period. The average rate for existing mortgages has levelled off at 2.7 per cent although the margin over Euribor has increased slightly. As lenders seek to widen margins over funding costs, increases in this rate will be constrained by the high proportion of ‘tracker’ mortgages in banks’ loan books, which are contractually linked to the ECB main refinancing rate. In contrast, interest rates on non-mortgage lending to households have continued trend upward since the most recent ECB rate cut.

Chart 13: Interest Rates on Outstanding Deposits to Households and Non-Financial Corporations



Source: CBFSAI.

Average rates on outstanding agreed maturity deposits declined further between November and January for households and NFCs, by 14 and 2 basis points respectively. However, rates offered on new deposits with agreed maturity up to a year increased by 10 and 16 basis points for households and NFCs over the same period. Rates offered for redeemable at notice deposits increased by 4 basis points between November 2009 and January 2010, and are at the same level as May 2009. The share of household deposits which are redeemable at notice continued to rise — from 10 per cent in January 2009 to 18 per cent in January 2010 — as the share of agreed maturity deposits fell. Overnight deposit rates have remained flat since mid-2009 for both households and NFCs.

Overall, the average interest rate on all outstanding households and NFC deposits (weighted by volumes) fell slightly between November 2009 and January 2010, in line with the average monthly rate of decline since mid-2009. The difference between this rate and the weighted average interest rate charged on outstanding loans to households and NFCs has levelled off at around 1.6 per cent since September 2009. This compares to an average margin of over 3 per cent before the beginning of the rate cutting cycle in September 2008.

Developments in the International and Euro Area Economy

Overview

The global recovery has continued in recent months, supported by substantial monetary and fiscal stimulus. Economic activity increased at a stronger than expected pace in the second half of last year, and the latest data suggests that growth remained vigorous at the start of 2010. While the recovery has been led by developments in emerging economies, it has broadened out to advanced economies as financial conditions and economic sentiment have improved. The latest projections anticipate fairly robust global growth this year and next, although the recovery is still expected to be somewhat uneven and to occur at a modest pace in the advanced economies, where further balance sheet adjustments are necessary by both the private and public sector. On prices, while headline rates have picked up, inflationary pressures are expected to remain subdued, reflecting weak labour markets and substantial excess capacity.

Recent economic data have confirmed that the global economy experienced a stronger than expected recovery in the second half of last year as financial market conditions improved and stimulus policies provided significant support to activity levels. The recovery has been led by developments in emerging economies, and emerging Asia in particular, where there had been limited direct exposure to the factors behind the financial crisis. The downturn in these economies was primarily driven by the rapid contraction in world trade that occurred as global economic sentiment collapsed in the second half of 2008. As the level of uncertainty surrounding the global economy moderated last year, and sentiment levels stabilised and began to increase once again, trade levels have normalised and capital flows have resumed. The recovery has also broadened out to advanced economies, although temporary factors appear to have played a significant role here. Scrappage schemes have boosted durable goods purchases, while a turn in the inventory cycle has provided a substantial contribution to growth, particularly in the United States.

The surprising strength of activity in the second half of last year, coupled with continued robust data at the start of 2010, has resulted in a further upward revision to growth forecasts. Following a contraction of close to 1 per cent last year, the International Monetary Fund (IMF)

now expects global growth of 3.9 and 4.3 per cent in 2010 and 2011 respectively. While these rates remain weaker than those recorded in the years prior to the downturn — global growth averaged 5 per cent between 2004 and 2007 — they would nevertheless represent a robust recovery compared with earlier projections. The recovery is, nevertheless, expected to be somewhat uneven. Emerging economies are forecast to continue to lead the recovery over this period, with growth in advanced economies occurring at a more modest pace. This reflects a number of factors, including the necessity for further balance sheet adjustment by both households and firms (see Box 1), financial conditions that remain challenging (including, as outlined in Box 2, tight credit conditions), and the gradually fading effect of stimulus policies and the inventory cycle on growth rates. With regard to the latter there remains a concern that a sustainable recovery may still have not taken hold, while in the euro area recent months have seen an increased focus on the fiscal challenges facing the region following developments in the Greek economy. Within both the emerging and advanced groupings, the growth performance is expected to vary considerably. The European recovery, for example, has occurred at a slower pace than in other areas, and the IMF expect that this trend will continue this year.

Table 1: Percentage Change in Real GDP Growth

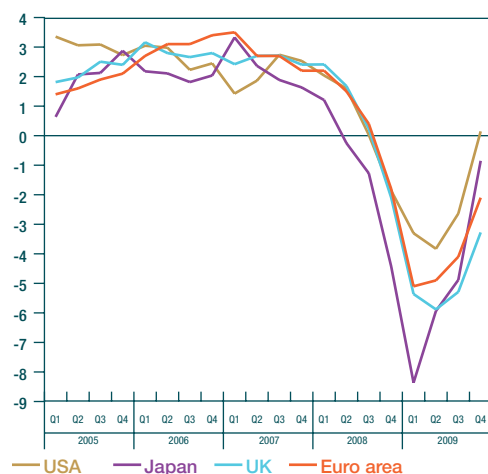
	2009 ^e	2010 ^f	2011 ^f
Global	-0.8	3.9	4.3
US	-2.5	2.7	2.4
Japan	-5.3	1.7	2.2
Euro area	-3.9	1.0	1.6
United Kingdom	-4.8	1.3	2.7

^e Estimate^f Forecast

Source: IMF Interim Forecast, January 2010.

Chart 1: GDP Growth

% Year-on-Year

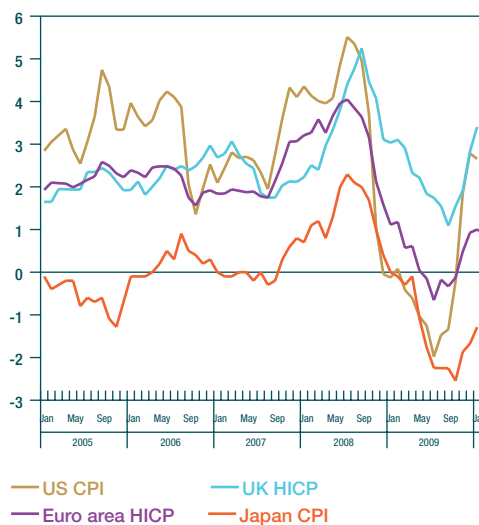


Source: Reuters EcoWin

Against the backdrop of significant base effects, global inflation rates were somewhat volatile last year, falling sharply — and in many cases turning negative — before strengthening once again in the final months of the year. Overall, however, underlying inflationary pressures have remained subdued, a trend that it appears will continue for some time. Commodity prices remain well below their pre-recession highs while weak labour markets and significant spare capacity should continue to hold down underlying price pressures. Moreover, inflationary expectations continue to remain well anchored. One potential risk to this assessment is that a liquidity surplus in the global economy could, over time, transmit itself into higher consumer prices if measures are not taken to reduce it. This risk is particularly

Chart 2: Inflation in the Major Economies

%



Source: Reuters EcoWin

evident in a number of emerging economies. Nevertheless, the existence of significant labour and capital market slack is likely to dominate inflationary developments in most economies for some time to come.

Section 1: Euro Area

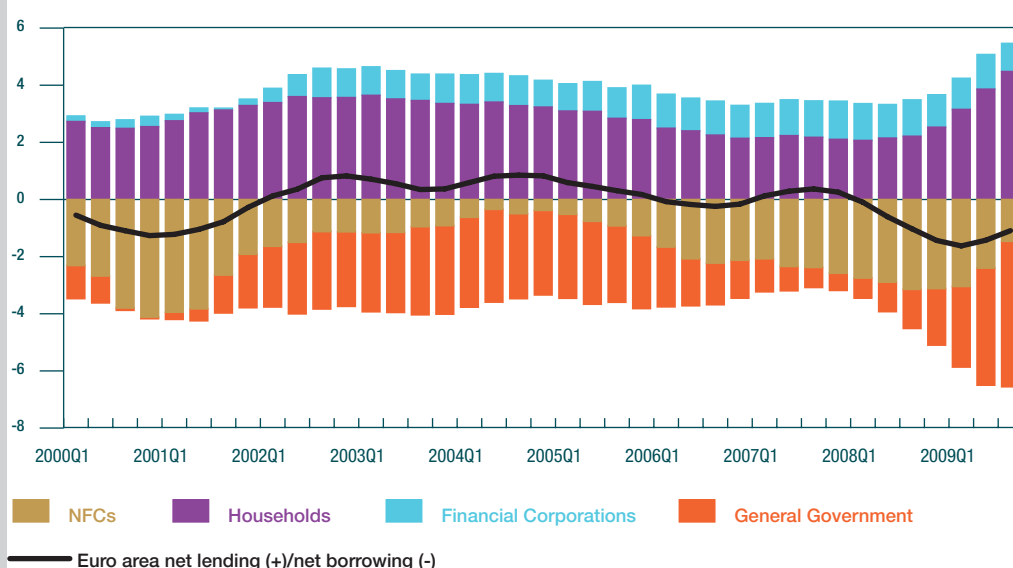
Economic Growth — Recent Developments

Following five successive quarters of GDP declines — and particularly sharp contractions in output in the final months of 2008 and the first three months of 2009 — the euro area economy returned to positive growth in the second half of last year. As Table 2 outlines, the expansion over this period primarily reflected a recovery in export growth — as global economic activity strengthened —

Box 1: The euro area accounts

The euro area accounts (EAA), first released in mid-2007, provide consistent and comprehensive information on macroeconomic and financial developments in the euro area¹. The accounts present both financial transactions and non-financial activities for individual institutional sectors (households, government, non-financial corporations and financial corporations², and allow for the analysis of interactions between these sectors and of the economy as a whole³. The accounts can enhance our understanding of the euro area and provide a valuable insight into the workings of the economy. This box outlines some information from these accounts and provides a brief overview of households' financial transactions and changes in balance sheets.

Chart 1: Net Lending/Borrowing, 4 Quarter Moving Sum, % of Gross Domestic Product



The four sectors already mentioned represent the total euro area economy and when the rest of the world sector is added, it closes the accounts (every asset transaction has a corresponding liability transaction with some other sector). Although financial assets must equal financial liabilities overall, this need not be the case at a sectoral level. For instance, as

shown in Chart 1, households have consistently run financial surpluses⁴ while non-financial corporations (NFCs) and the Government sector have had deficits in their accounts to varying degrees over the last decade. The amount by which the deficits run by domestic sectors exceed the surpluses of the domestic sectors must be financed by borrowing from the rest of the world, and this is represented by the euro area net lending/borrowing as shown in Chart 1. The line is synonymous with the current account balance and shows that the

¹ The data, going back to Q1 1999, are published quarterly at a 4 month lag. The EAA integrate both financial and non-financial accounts. Prior to their inception, Monetary Union Financial Accounts (MUFA) were published but incorporated financial elements only.

² Financial Corporations includes insurance corporations & pension funds, monetary financial institutions and other financial intermediaries and are consolidated for the purposes of this box.

³ See Castrén and Kavonius (2009).

⁴ Excludes housing assets.

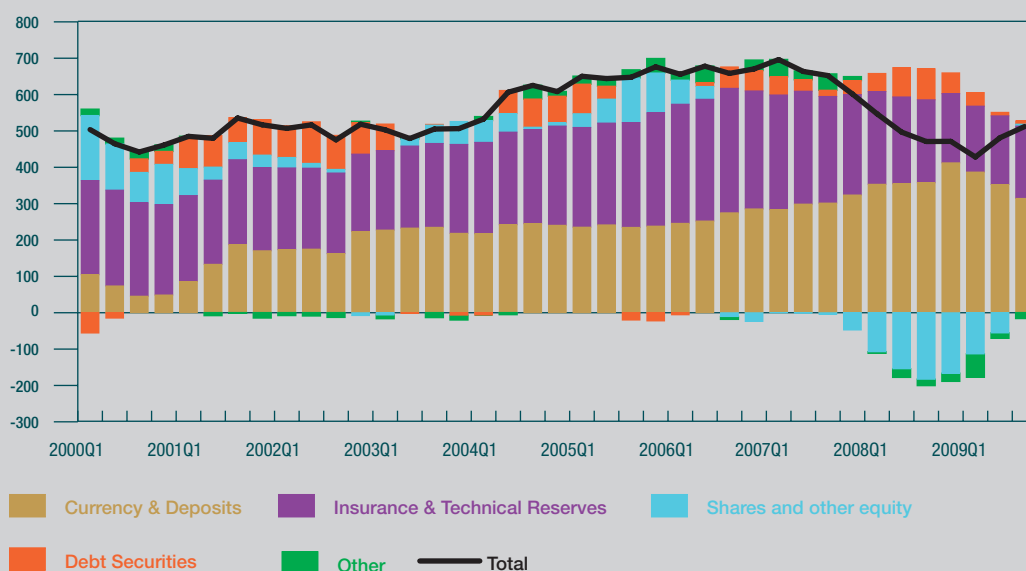
euro area as a whole has been running a current account deficit since 2008, but it has been contracting somewhat throughout 2009, due mainly to the increasing net lending by the household sector as their savings have increased in recent times. Of the net borrowers, the NFC sector has recently decreased its level of borrowing, which is unsurprising in light of the current severe downturn in the euro area economy. The net borrowing position of the euro area has recently been strongly driven by the Government sector. The expansion of government borrowing has been driven by various fiscal stimulus measures initiated by governments in response to the severe recession, the effect of automatic stabilisers and lower tax revenue in a downturn and attempts to stabilise the financial system, particularly the banking sector.

Focusing on households and changes in their financial accounts, it is clear that overall, currency & deposits and insurance & technical reserves (which include pensions) are their most important assets, as shown in Chart 2. The onset of the financial crisis and the global

economic slowdown is reflected in the decline in financial investment of households shown in Chart 2. This overall decline, however, conceals the different behaviour of the individual components. Beginning with the second quarter of 2007, households showed an increasing preference towards safer and more liquid assets with currency & deposits increasing⁵ and insurance & technical reserves decreasing. Unsurprisingly, the biggest increase in currency and deposits was in Q4 2008, in the wake of the Lehman Bros. collapse. This coincides with a move away from equities, with less investment in stocks from 2007 onward- mirroring a similar decline in equities immediately after the 'dot com' crash in 2000. The subsequent decline in transactions in deposits throughout 2009 most likely reflects households reduced earnings following the deepening of the crisis. This was offset by a reversal of the previous disinvestment in shares and other equity, which led to an overall increase in the flow of financial assets.

⁵ Currency & deposits expanded for seven consecutive quarters beginning in Q2 2007; the first time this had occurred in the time period covered by the EAA.

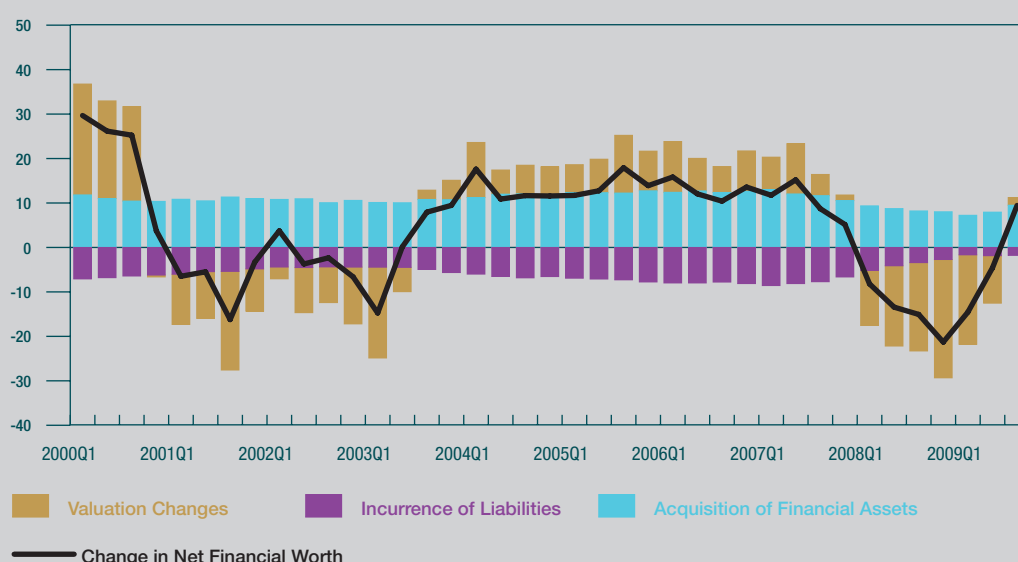
Chart 2: Financial Investment of Households 4 Quarter Moving Sum (€ billions)



The euro area accounts allow us to analyse how the financial worth of households has evolved, based on transactions and revaluations in assets and liabilities, as shown in Chart 3. From this chart, one can see the sharp decline in the overall financial net worth of the household sector driven primarily by the significant valuation changes during the recent

financial turmoil. These valuation changes were greater than those that occurred following the 'dot com' crash at the beginning of the decade. It is also notable that since 2007, households have incurred fewer liabilities, possibly reflecting the decreased demand for loans or tightening of credit conditions across the euro area.

Chart 3: Net Financial Worth of Households % of Gross Disposable Income



coupled with a slower rundown in inventories by firms in the region. Private domestic spending, by comparison, remained subdued. Despite car scrappage schemes providing a significant boost to auto sales, household spending continued to contract as the region's labour market deteriorated further. Fixed investment spending also recorded additional declines against the backdrop of low capacity utilisation, tightening credit conditions and continued uncertainty. This weakness in domestic demand is the primary factor behind the relatively slow recovery in the region — and that in Europe more generally — which has so far lagged that in most other advanced economies. For 2009 as a whole euro area real GDP declined by 4.0 per cent, the region's first annual contraction since 1993.

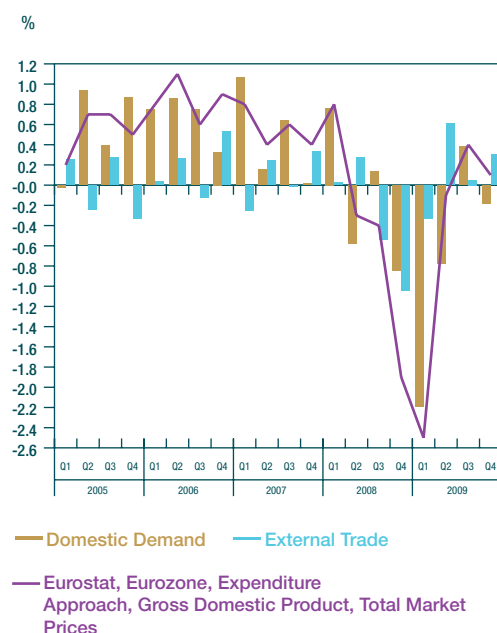
Economic Growth — Outlook

While developments may be somewhat uneven in the first half of 2010 — primarily reflecting the unseasonable weather at the start of the year — the euro area's recovery is expected to continue. The region's external environment has improved further since the start of the year; a stronger global recovery is now expected, and the euro has weakened by around 4 per cent in nominal effective terms. As a result, exports should continue to strengthen and provide the main support to the recovery this year. The inventory cycle should also contribute to the expansion; as noted above euro area firms continued to run down stock levels in the second half of this year. At the same time, however, global growth is expected to be

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

	2009			
	Q1	Q2	Q3	Q4
Personal Consumption	−0.3	0.0	−0.1	0.0
Government Consumption	0.1	0.1	0.2	0.0
Fixed Investment	−1.1	−0.4	−0.2	−0.2
Inventories	−0.9	−0.6	0.5	0.0
Exports	−3.3	−0.4	1.1	0.6
Imports	3.0	1.1	−1.0	−0.3
GDP	−2.5	−0.1	0.4	0.1

Source: Eurostat.

Chart 3: Contributions to Real GDP Growth, 2005-2009

Source: Reuters EcoWin

weaker than prior to the financial crisis, and firms in the region are likely to keep inventories at a low level reflecting continued uncertainty. It also appears that domestic demand will remain weak for some time to come, with unemployment forecast to increase this year and next and a high level of spare capacity. Further balance sheet adjustment is also required at a household, firm and government level. Accordingly, the recovery is expected to occur at a moderate pace. The latest ECB staff projections anticipate that euro area real GDP will grow by between 0.4 and 1.2 per cent in 2010 and by between 0.5 and 2.5 per cent in

2011. The IMF is somewhat more optimistic about this year — expecting growth to be at the top end of the ECB's range — but has a broadly consistent expectation for 2011.

Inflation — Recent Developments

Headline HICP inflation has stabilised at around 1 per cent since December, with the preliminary estimate from Eurostat suggesting a rate of 0.9 per cent in February. This follows the unwinding of base effects in energy and food prices, as large price increases in 2008 fell out of the calculation of annual rates; this had seen headline inflation decline to a low of −0.7 per cent last July. The breakdown of January's headline inflation rate shows energy price inflation of 4.0 per cent, with oil prices well ahead of cyclical lows around the turn of last year. Meanwhile, food prices declined by 1.2 per cent, reflecting the unwinding of large price increases in 2008. Inflation excluding energy and food prices has been showing some signs of stabilisation since late last year, from a declining trend earlier in the year. Selling-price expectations among firms, as measured by the European Commission, have recovered somewhat but remain weak.

Price pressures also appear muted. Within producer prices, higher commodity prices are feeding into energy and intermediate goods prices but final goods prices have been largely flat since the middle of last year. Meanwhile, import prices, excluding energy, have been largely unchanged for most of last year, with euro appreciation last year feeding through mostly into profit margin recovery following sharp price declines in late 2007 and early

Chart 4: Euro Area GDP Growth

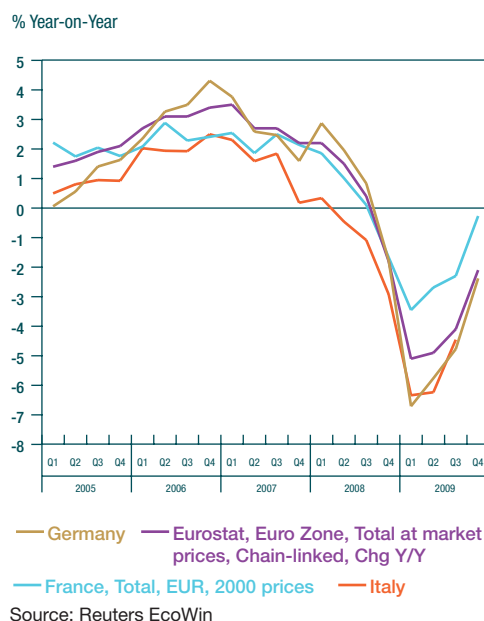


Chart 6: Euro Area Inflation Indicators

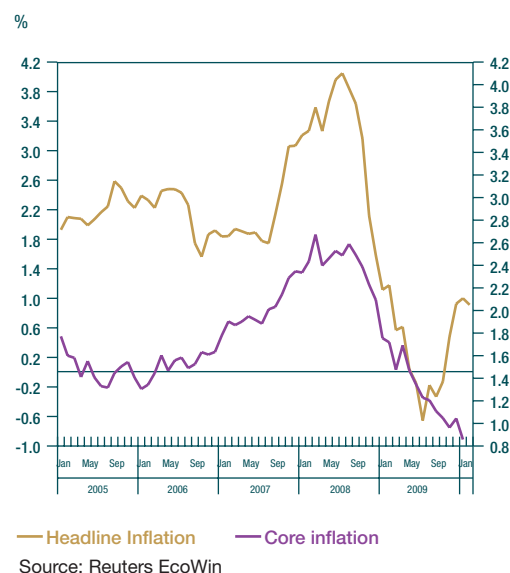
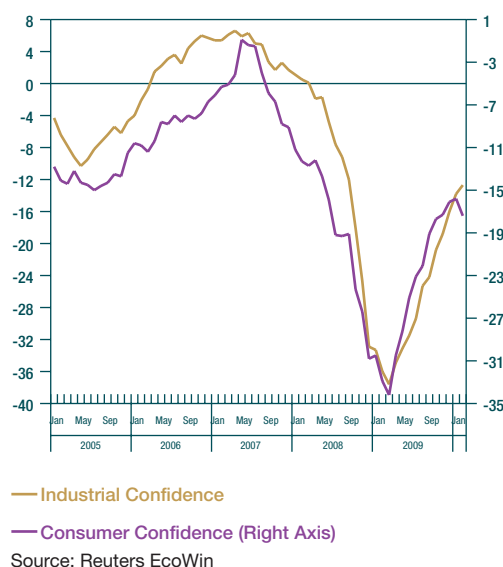


Chart 5: Euro Area Confidence Indicators



2008. Labour market dynamics are also weak, with compensation per employee growth of just 1.4 per cent in the year to the third quarter of 2009. This partly reflected reduced hours as hourly labour costs increased by 3.2 per cent though the burden of adjustment shifted to wage rates as the year progressed. Unit labour cost growth, calculated as the difference between growth in productivity and

compensation per employee, was 3.5 per cent but this reflects a sharp cyclical dip in productivity growth, which is unwinding as the economy stabilises.

Oil and Other Commodity Prices

Oil prices have broadly stabilised within, or a little above, a range of \$70 to \$80 per barrel since early October. This reflects the fact that the outlook for the global economy continued to improve, though there were some concerns regarding the impact of monetary tightening in China. Past statements from the G7 countries and Saudi Arabia, the leading oil producer, that prices within this range were “fair”, provide a further anchor. Very cold weather in the Northern hemisphere saw oil prices briefly surpass \$80 in early January but this impact unwound over the course of the month. Food commodity prices have generally declined since the start of the year, amid positive reports on supplies and as sharp increases in sugars and dairy prices unwound somewhat. Metals prices are generally somewhat lower over the period as a whole, reflecting some concerns regarding monetary tightening in China and fluctuating supply concerns in some cases.

Box 2: Borrowing conditions for Non-Financial Corporations in the euro area and the US

Following the intensification of the financial crisis in October 2008, banks in the euro area and the US came under significant pressure to reduce the size of their balance sheets. This raised concerns that inevitable deleveraging would result in a decline in loan supply to the private sector. This Box examines trends in bank credit to non-financial corporations' (NFCs) in the euro area and the US since the intensification of the crisis.

Chart A: Bank Lending to Non-Financial Corporations, Annual Growth Rates, Non-Seasonally Adjusted (US Growth Rates Refer to Non-Farm Non-Financial Corporations)

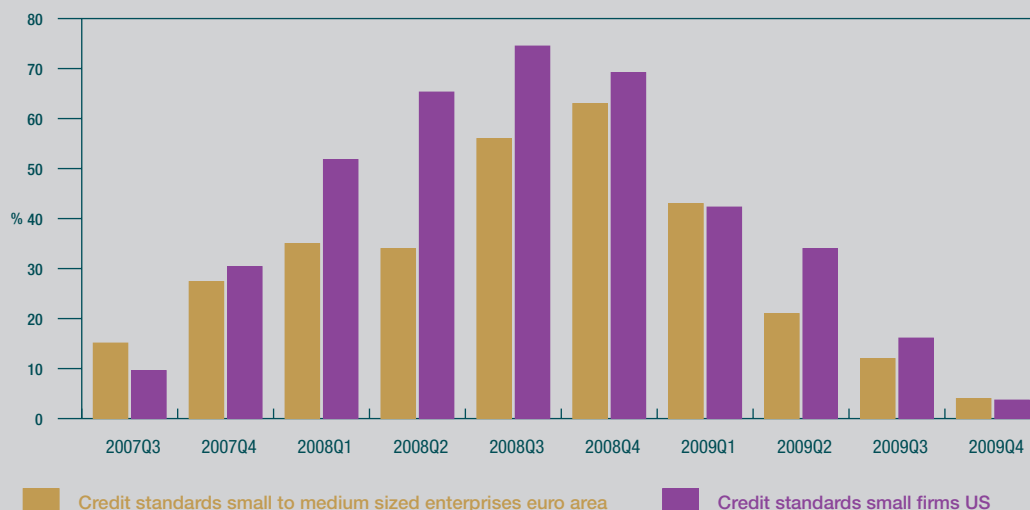


In 2009 the annual growth rate of bank loans to NFCs declined into negative territory in both the euro area and the US. The reduction in bank credit to NFCs was more dramatic in the US where annual growth rates fell from over 18 per cent in the third quarter of 2008 to minus 7 per cent by the end of 2009. In the euro area, annual growth rates declined from 15 per cent in the first quarter of 2008 to minus 2 per cent in the fourth quarter of 2009.

The Bank Lending Survey (BLS) and the Senior Loan Officer (SLO) survey examine changes in

credit market conditions in the euro area and the US respectively. During the third quarter of 2007, credit standards began to tighten sharply on loans to enterprises in both economies peaking in the third and fourth quarters of 2008, as displayed in Chart B. Although the degree of tightening decelerated during 2009, it still represents more restrictive credit conditions. In both surveys, the tightening of credit standards on loans to enterprises was attributed to similar factors: increased costs associated with banks' capital position, greater economic uncertainty, and deteriorating industry or firm-specific outlook.

Chart B: Changes in Credit Standards on Loans to Enterprises — Euro area and United States
(Net Percentages of Banks Reporting a Tightening of Standards)



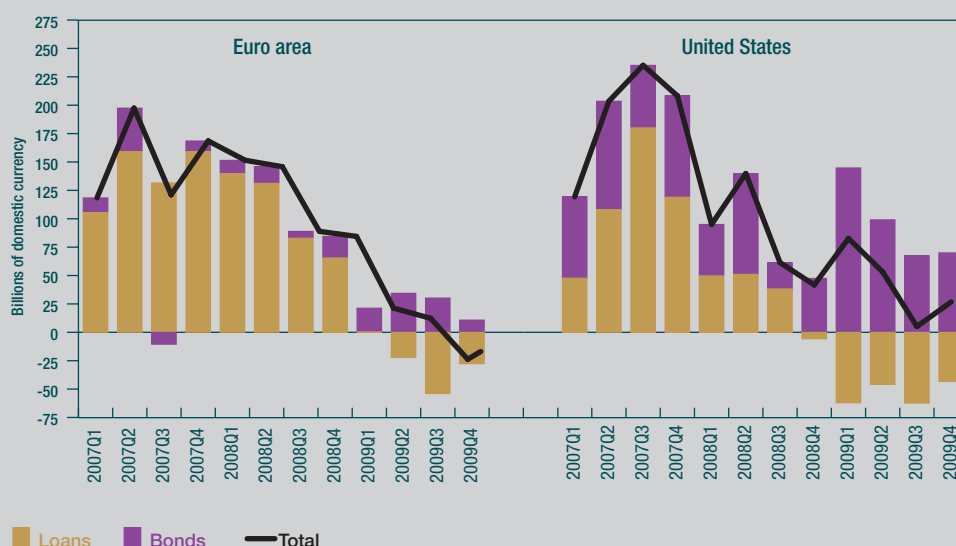
Note: Net percentages are defined as the difference between the sum of percentages of banks responding "tightened considerably" and "tightened somewhat" and the sum of the percentages of banks responding "eased considerably" and "eased somewhat". In the BLS, a firm is considered a small to medium sized enterprise (SME) if its annual net turnover is more than €50 million. In the SLO survey, small firms are those with annual sales of \$50 million or more.

The external financing structures of NFCs⁶ in the US and euro area are quite different, with the former being more reliant on market-based financing and the latter on bank-based financing. Therefore, even though the decline in

US bank credit has been more significant, it has been offset by an increase in the net issuance of corporate bonds, as seen in Chart C. NFCs in the euro area also increased their net issuance of debt securities in recent quarters; however, it has not fully offset the decline in bank credit.

⁶ NFCs in the US refers to non-farm non-financial corporate businesses. Data are sourced from the Federal Reserve and are available at www.federalreserve.gov.

Chart C: Net Borrowing of Non-Financial Corporations in Bonds and Bank Loans, Quarterly Flows, Non-Seasonally Adjusted, Billions of Domestic Currency



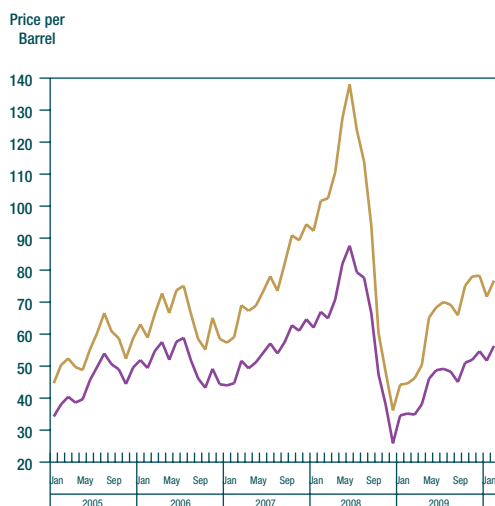
External financing structures also differ depending on firm size; it is mainly larger corporations that can avail of market-based financing, with smaller companies being almost completely reliant on banks for their credit. Surveys of SMEs in both economies report a deterioration in the availability of loans. An ECB survey⁷ of euro area SMEs in the second half of 2009 reports that 42 per cent of SMEs experienced a deterioration in the availability of bank loans while 19 per cent reported that “access to finance” was their most pressing

⁷ Survey on the access to finance of small and medium-sized enterprises in the euro area: Second half of 2009. www.ecb.int

problem. In the US, a survey⁸ conducted by the National Federation of Independent Business (NFIB) reports a deterioration in the availability of loans for small businesses with the net percentage of firms reporting a deterioration in the availability of loans reaching 14 per cent in January 2010, as compared with 5 per cent in January 2007. However, only 5 per cent of firms reported that “finance and interest rates” was their single most important problem.

⁸ Data are taken from the National Federation of Independent Business (NFIB) “Small Business Economic Trends” publication. NFIB Research Foundation.

Chart 7: Oil Prices — Brent Crude



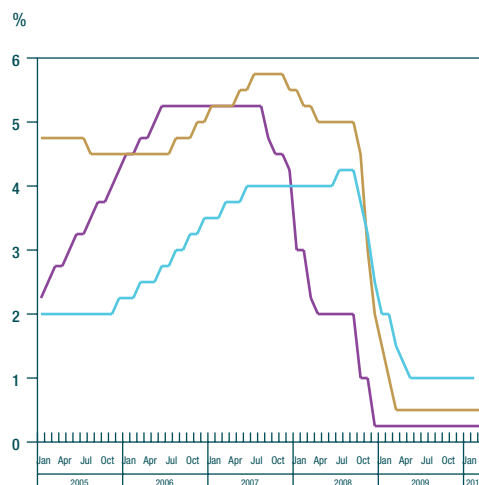
— Oil prices in dollars — Oil prices in euro

Source: Reuters EcoWin

Inflation — Outlook

Inflation is expected to remain close to 1 per cent until the middle of the year before increasing somewhat later in the year as food prices stabilise from recent weakness. Eurosystem staff projections are for inflation to average between 0.8 and 1.6 per cent for the year 2010 as a whole and between 0.9 and 2.1 per cent in 2011. Price, wage and cost pressures are expected to remain subdued, reflecting the gradual nature of economic recovery and significant spare

Chart 8: Key Policy Interest Rates



— UK Base Rate — Euro area Minimum bid rate on main refinancing operations
— US Federal Funds Rate

Source: Reuters EcoWin

capacity in labour and capital utilisation. Risks to the projections centre mainly on the outlook for economic activity and commodity prices though there is some additional uncertainty surrounding indirect taxes and administered prices as part of fiscal consolidation measures.

Section 2: External Environment

Emerging EU Member States

Economic developments in the eight emerging non-euro area EU member states have been somewhat mixed in the past few quarters, with

some countries returning to growth in the second half of last year, while others remained in contraction, albeit at a more moderate pace than earlier in the year. These tentative signs of recovery are in large part due to the improved external environment, with strong gains in exports helping to boost production in the industrial sectors, an important segment of these economies. On the other hand, domestic demand remains subdued as credit conditions are still tight and large private sector debts will need to be reduced before households and firms resume spending. Any continued recovery will be closely linked to a sustained improvement in the economic health of trade partners. Inflation declined notably in most Emerging EU countries as economic activity slowed resulting in a marked improvement in competitiveness, leaving the region well positioned to take advantage of global economic recovery. While there has been some pick up in consumer prices in the past few months, inflationary pressures are likely to remain muted in countries with substantial excess capacity.

United States

Having contracted sharply in the first quarter of 2009, and broadly stabilised by mid-year, US economic activity expanded strongly in the second half of last year. Real GDP increased by annualised rates of 2.2 and 5.9 per cent in the third and fourth quarters respectively, with the latter representing the strongest quarterly growth rate in over six years. As Table 3 outlines, however, temporary factors played a key role in supporting activity over this period. The most notable of these factors related to the inventory cycle. While US firms continued to reduce stock levels in the second half of 2009, they did so at a much slower pace than in preceding quarters, a development that contributed more than half of the total growth experienced in Q3 and Q4. An increase in personal consumption, meanwhile, received support from economic stimulus packages, which boosted automobile sales significantly and reduced individual tax rates. Estimates from the US administration's multiplier model suggest that, on an annualised basis, the American Recovery and Reinvestment Act

added on average around 3 percentage points to the growth rate in the second, third and fourth quarters of last year. Despite the stronger than expected second half of the year, US real GDP still contracted by 2.4 per cent in 2009 as a whole. This represented the first annual decline in output in 18 years and the sharpest contraction since 1946.

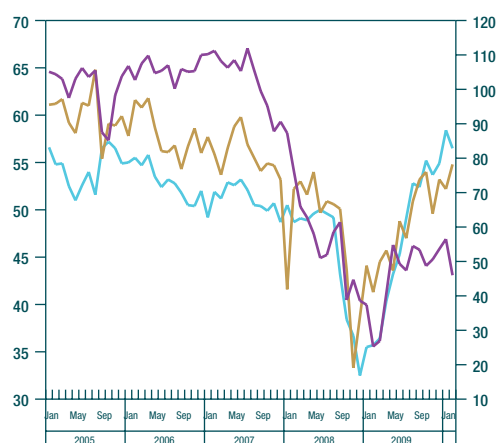
The latest economic data have remained broadly positive and points to continued robust growth in the first half of this year. Fiscal stimulus is expected to continue to have a positive impact on economic growth over this period, while the inventory cycle should also provide further support. The data has also revealed, however, that the housing market remains very weak and there is still no indication that the labour market is set to experience a strong improvement any time soon. While the US unemployment rate surprisingly declined at the start of the year, revisions to the data revealed that the economy lost significantly more jobs during the recession than had previously been thought, and the Congressional Budget Office still anticipates elevated average unemployment rates this year and next. With these factors expected to continue to weigh on consumer sentiment and spending, and the ongoing necessity for balance sheet adjustment across the economy as a whole, the US recovery is expected to occur at a slower pace than in past recoveries. The IMF anticipates real GDP growth of 2.7 per cent this year and 2.4 per cent in 2011. While the former represents a significant upward revision from the Fund's previous forecasting exercise in September, the latter figure is weaker than had been expected at that time.

The Federal Reserve's Federal Open Market Committee (FOMC) maintained the target for the federal funds rate at a historically low range of zero to 0.25 per cent at its meetings in January and March. The FOMC noted that 'inflation is likely to be subdued for some time' — the core PCE deflator's year-on-year growth rate has moved in a narrow range of 1.4 to 1.5 per cent since October of last year — and economic conditions 'are likely to warrant exceptionally low levels of the federal funds rate for an extended period'. The Committee

Table 3: Contributions of expenditure components to percent change in US GDP (annualised terms)

	2009			
	Q1	Q2	Q3	Q4
Personal Consumption	0.4	-0.6	2.0	1.2
Government Consumption	-0.5	1.3	0.6	-0.2
Fixed Investment	-6.6	-1.7	-0.2	0.8
Inventories	-2.4	-1.4	0.7	3.9
Exports	-4.0	-0.5	1.8	2.3
Imports	6.6	2.1	-2.6	-2.0
GDP	-6.4	-0.7	2.2	5.9

Source: Bureau of Economic Analysis

Chart 9: US Confidence Indicators

— US Business Sentiment (Non-manufacturing)
 — US Business Sentiment (Manufacturing)
 — US Consumer Confidence (Right Axis)

Source: Reuters EcoWin

did increase the discount rate by 25 basis points in February as it moved to normalize its lending to commercial banks through the discount window, and encourage these banks to use private funding markets for short-term credit. It has also closed a number of its special liquidity facilities in response to improvements in the functioning of financial markets. The only remaining such program — the Term Asset-Backed Securities Loan Facility — is scheduled to close on 30 June.

United Kingdom

Economic activity returned to positive territory in late 2009, while inflation has picked up sharply recently. In the final quarter of 2009, real GDP increased by 0.3 per cent, following a contraction of 0.3 per cent in the previous three months. During the quarter, consumer spending picked up while fixed capital

investment on the other hand weakened. In the coming quarters, the pace of recovery is expected to be slow and fragile, with the economy continuing to face major headwinds. Credit conditions are likely to remain restrictive for some time, labour market conditions remain weak, while the need to strengthen public and private sector finances are likely to weigh on spending. For the year as a whole, the IMF has forecast growth of 1.3 per cent, while the European Commission expects a weaker recovery with growth of just 0.6 per cent.

Examining the latest data, sentiment indicators suggest that positive output growth in the fourth quarter carried over into 2010, particularly in manufacturing, with the manufacturing PMI recording its highest reading in 15 years at the start of the year. At the same time, the impact of the January 2010 reversal of the VAT cut and poor weather conditions may well depress private consumption during the first quarter.

As regards prices, the headline rate of inflation has increased sharply in recent months to reach 3.5 per cent in January, from 1.9 per cent back in November. With inflation now more than one percentage point above its target rate, the Governor of the Bank of England was required to send an open letter to the Chancellor in January explaining recent movements. Three short-run factors appear to have driven the increase in inflation, namely the restoration of the standard rate of VAT to 17½ per cent from a temporary 15 per cent, the increase in oil prices over the past year and the effects of the continuing feed through of the sharp depreciation of sterling. Over the coming months, inflation is likely to remain high, but is expected to fall back to around its target rate

of 2 per cent in the second half of the year, according to the Bank of England. Finally, on monetary policy decisions, the Bank of England MPC decided to maintain the official bank rate at 0.5 per cent at its latest meeting on March 4, and kept the stock of asset purchases at £200 billion.

Japan

The economic situation has improved over recent months in Japan. In the final quarter of 2009, real GDP expanded by 0.9 per cent quarter-on-quarter, following a contraction of 0.1 per cent in the preceding period. During the final three months of the year, growth was predominantly driven by external demand and solid consumption supported by government stimulus, while capital investment improved on the back of strong exports. In the first quarter of 2010, it is unlikely that output will be quite so strong as the effects of stimulus measures on consumption fade and public investment reduces. In the short-term, support for GDP is expected to come largely from abroad. Exports at the start of the year increased at their fastest pace in almost 30 years, led by shipments to China, which should help to support production. On the other hand, labour market developments remain very weak despite improving marginally recently, and are expected to weigh on household consumption in the short term. Overall, following a contraction of 5.3 per cent last year, output is forecast to expand by 1.7 per cent this year, according to the IMF.

Meanwhile, deflationary pressures persist due to the substantial slack in the economy as a whole. The CPI (excluding fresh food) slid for an eleventh consecutive month in January, declining by 1.3 per cent, but the pace of decline has been moderating since peaking at

a decline of –2.4 per cent last August, reflecting developments in the price of petroleum products. With regard to monetary policy decisions, the Bank of Japan decided to keep its target for the uncollateralized overnight rate at around 0.1 per cent at its latest meeting in February.

Emerging Asia

In emerging Asia, economic activity has been rebounding significantly in recent quarters, which is helping to support the global recovery. Output has been supported by favourable policy stimulus packages, while foreign trade has also started to gradually recover. At the same time, domestic demand is improving, resulting from favourable developments in asset and real estate markets. In China, real GDP expanded a very strong 10.7 per cent year-on-year in the final quarter of last year and output is expected to remain robust this year. Likewise in India, real GDP was also very strong in the final three months of last year, increasing 6.0 per cent year-on-year. Overall, the IMF forecasts real GDP of 10 per cent and 7.7 per cent in China and India, respectively, this year.

Positive consumer price inflation has also resumed in those countries where the recovery has been quite strong, with the Chinese CPI recording a rate of 1.5 per cent in January. Against the backdrop of increased concerns over rising inflationary risks, including inflated asset prices and very strong lending, the People's Bank of China has undertaken a number of measures to manage liquidity and rein in bank lending recently. Meanwhile, in India, the annual wholesale price index (the main inflation indicator) accelerated from negative territory in 2009 to 8.6 per cent in January.

Retail Payment Practices: How They Have Evolved in Recent Times and Where They Might Be Going

by David Cronin and Anne McGuinness*

Abstract

The relative importance of different retail payment media varies across countries. There are, however, some trends in the data that are evident pan-nationally: cash seems to be playing a lesser role in payment activity; among non-cash forms of payment, there has been a substitution away from paper-based to electronic instruments; and debit cards are being more heavily used in recent years. These developments indicate progress towards a more efficient payment system as older, more expensive payment instruments are supplanted by newer, cheaper options. Viewpoints on what the future may hold in store for retail payments, including perspectives on the impact that new electronic technologies designed for making small-value payments may have on cash usage, are considered. It is argued that while its usage may decline over time, cash is unlikely to disappear from the payments landscape soon.

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1. Introduction

Retail payments is a term used to describe payments that are made among the non-bank public, be that between individuals, between businesses, or between individuals and businesses. This form of payment is mainly initiated by consumers. A retail payment usually involves a much smaller value being exchanged compared to an interbank, or wholesale, payment, which takes place between financial institutions. The volume of retail payments, however, is far greater than that in the wholesale payment system. The two payment areas are differentiated further by the range of retail payment instruments available to consumers, in contrast to the common shared technical platform used by banks in settling payments among themselves.

A retail payment can be made using cash, cheque, debit card or direct debit, to name but a few payment options. These instruments may or may not be effective replacements for one another, with their substitutability depending on the payment amount involved and the context in which the specific payment is being made. Retail payments can take place in a variety of situations and locations, such as over a shop counter, face-to-face or by being transmitted across national borders from the privacy of one's home.¹ They can occur on a recurring basis as part of a contractual relationship or they might take place on a one-off basis between the parties involved.

The differentiating characteristics between retail and wholesale payments help explain why the principal focuses of analysis in these two payment areas differ from one another. In the wholesale payment system, payment volume is relatively low and the amounts exchanged tend to be quite large so that the per-transaction cost of running the payment system is not a particularly important issue. Of much greater concern in that area of payments are the consequences of a large-value payment (or payments) not being settled and the possibility that that could put the good functioning of the payment system at risk.

Settlement risk and systemic risk are less prominent issues in retail payments because a failure to settle a transaction will not precipitate a chain reaction compromising other participants' ability to settle. A lack of disruption in retail payments systems, of course, is important to consumer confidence and business performance, including trust in the currency. The focus in the retail payments sphere, however, is more on assessing whether payments are being made in an efficient manner.

Humphrey, Pulley and Vesala (2000) indicate that the resource cost of the US payment system accounts for up to three percent of its national income. The actual cost of each national payment system will be largely dictated by the payment instruments used by the non-bank public in making payments. The cost savings to be made from adopting more efficient payment methods are not trivial. Humphrey, Willeson, Bergendahl and Linblom (2003) state that if a country was able to shift fully from a paper-based to an electronic-based payment system, annual savings of about one percent of national income could be achieved. This reflects the per-item cost of electronic payments being generally lower than paper-based alternatives.²

As will be seen in this review, the relative importance of different payment media varies across countries and payment choices may not always be driven by efficiency concerns. There are, however, some trends in the data that are evident pan-nationally: cash seems to be playing a lesser role as a payment instrument in economic activity; among non-cash forms of payment, there has been a substitution away from paper-based to electronic instruments; and, finally, debit cards are being more heavily used in recent years. These developments indicate some progress towards a more efficient payment system as older, more expensive payment instruments are supplanted by newer, cheaper payment options.

¹ According to Leinonen (2008, p.69), most payments are local transfers and in almost all EU countries the market share of cross-border payments in volume is well below three percent.

² Embracing new, more efficient forms of payment can lower business costs. This can benefit a country's competitiveness. The National Competitiveness Council (2007) also makes the point that the greater use of electronic payment technology can support innovation in specific new business models. An example would be enterprises using internet technology to market and sell products or services.

The purpose of this article is to review and comment on trends in retail payment practices over time. Particular attention is given to developments in the 1990s and the 2000s and to explaining why retail payments have evolved as they have. Viewpoints on what the future may hold in store for retail payments are also considered, including perspectives on the impact that new electronic technologies designed for making small-value payments could have on cash usage. It is argued that while it may be substituted to some extent by electronic instruments, cash is unlikely to disappear from the payments landscape soon.

2. Historical background: how payments evolved up to recent times

It could be argued that the development of modern payment instruments had its origin in the realisation by traders that certain goods were more saleable than others, i.e. that possession of particular goods helped them to acquire specific goods they desired more quickly. Over time, traders ended up choosing a small number of base metals to fill the role of common payment media. Further progress in payments included a reduction in the cost of authentication of the validity and worth of money by its coinage and, subsequently, the use of paper claims on gold to settle transactions. The risk attaching to using paper claims was addressed by the building up of information networks between banks. Those systems permitted the paper cheque and other new payment instruments to become more widely used over time.

Advances in payment technology often took time to be adopted. For example, the invention of the printing press in the fifteenth century might have been expected to herald a rapid adoption of printed money but it took many hundreds of years for paper to replace coin and even then it did not do so at the lowest denomination values. Davies (1997) points out that a “sailing-ship effect” followed the arrival of the printing press, as the technology involved led, first, to a revolution in the then-dominant technology of minting, allowing coins to be provided at a lower cost than before, and only later did it help bring paper money into

widespread use. This example points to a particular dynamic in the payments area that persists to this day whereby the advantages of an innovation are not sufficient in their own right to ensure the new technology’s prompt adoption and widespread usage in payments. New payment methods will only be adopted by the public when issues such as inertia in payment habits are overcome.

The twentieth century, particularly its second half, saw new payment methods being made available to and being adopted by the non-bank public. Whereas up until then most people were using cash (i.e., notes and coin) as their main or sole payment instrument in purchasing goods and services, cheques, credit transfers and credit cards started to be used more regularly and more widely. Recently, electronic technologies have allowed “plastic” media such as debit cards to be used to make payments at electronic points-of-sale (so-called POS payments). As a result, consumers and firms now have a variety of payment media at their disposal. Many of these are substitutes for one another, which forces users to choose between them when making payments. Home banking and home shopping are other factors shaping payment practices. Neither involves the use of cash, with electronic payment media being used for money management and for making purchases.

The next three sections examine how usage of the various retail payment media currently available has evolved in recent years in a selected number of countries. Cash usage is looked at initially, before turning to non-cash, or cashless, payment media. A chart-based analysis focuses on the following European countries: Finland, Germany, Ireland, the Netherlands and the United Kingdom (UK). Finland and the Netherlands are selected as they are countries where the public seems keen to adopt new electronic payment technologies. An enthusiasm for using cash in payments is often associated with Germany. The UK is selected because of its geographical proximity to Ireland and an expectation that its payment preferences and practices may be similar to its neighbour. Looking at United States (US) data may reveal different payment

practices in that country compared to European countries — for instance, the US public was known to be a comparatively heavy user of cheques in the 1990s. Japan is the final country examined as it is known that cash has long had prominence in payments there. The charts focus mainly on the years 1991, 1995, 1999, 2003 and 2008.³

3. The use of cash in modern payment systems

3.1 Stock-based measures of cash usage

Notes and coin have many attractions as payment media. In current payment systems, where cash is a liability of central banks or national treasury departments, notes and coin are legal tender (i.e., a payee is obliged to accept cash as tendered in settlement of a debt). They bear little or no credit or settlement risk (the main risk is that the currency tendered could be fraudulently copied). Payment by cash ensures that the anonymity of a transaction can be preserved. Notes and coin are reusable and easily exchanged, with cash payments, uniquely among current mainstream payment media, not needing to pass through the banking system.

While part of its attraction to the public, this “open circulation” nature of cash (as Snellman (2000, p.13) describes it) is a source of frustration for payment analysts as a direct quantification of the volume and value of cash transactions is impossible since many cash payments are not recorded.

Quantifying the volume and value of cash transactions in the economy then is a considerable challenge. A start can be made by examining the quantity of currency outstanding in relation to a number of other variables. An immediate caveat is that the amount of currency outstanding is a “stock” measure and, therefore, does not represent the “flow” of cash that accompanies its use in payments. Nevertheless, quantity-of-currency based measures can offer some insight on the

extent to which cash is being used in payments.

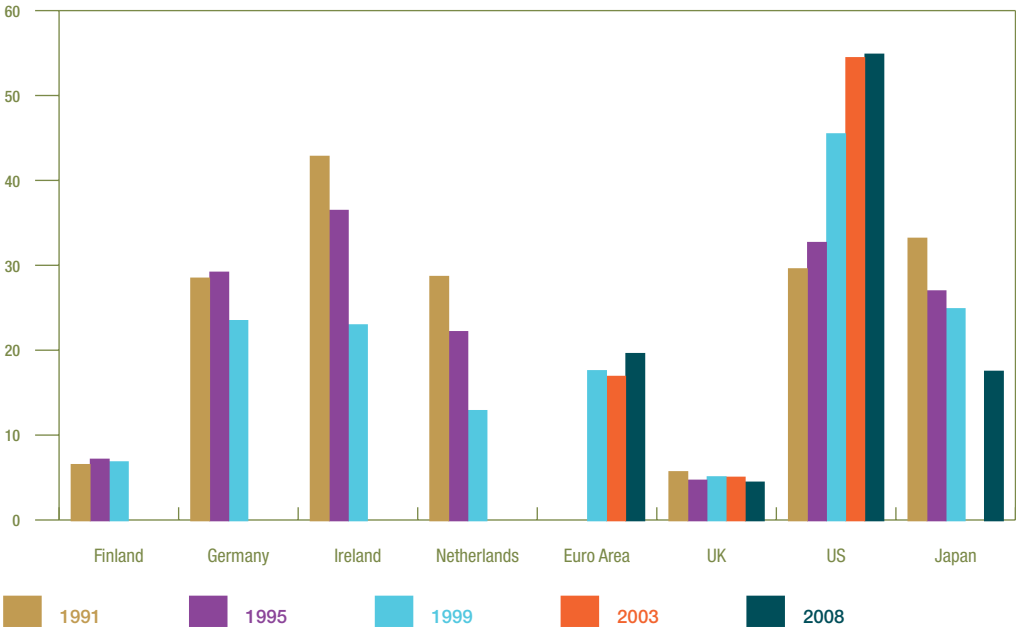
In Chart 1, the ratio of currency outstanding to a narrow money stock measure is plotted across a number of countries and regions. A narrow money measure (M2 in the case of the UK and M1 in all other cases) is the most appropriate variable to graph cash as a proportion of, given that most money balances within that measure would likely be used mainly for payment purposes. Generally, narrow money is measured by adding notes and coin held by the non-bank public and demand deposits. (Non-cash payments such as cheques and debit card transactions are usually drawn down on demand deposits.) The reason for then plotting currency outstanding as a proportion of narrow money is that a rise or fall in that proportion would point to an increase or decrease in the use of cash in payments *vis-à-vis* payment instruments which depend on demand deposits for settling payments.

The introduction of the euro as a common currency across member states means that there are no post-2002 cash data available for Finland, Germany, Ireland and the Netherlands and, accordingly, aggregate euro area currency data are shown for later years. Currency was declining as a proportion of narrow money in Germany, Ireland and the Netherlands in the 1990s. Over a longer timeframe, Japan has also shown a decline in its ratio, while the UK's ratio was low initially and remains broadly unchanged over the full sample period — something also found in the 1990s Finland data. A declining ratio may indicate a lower domestic demand for cash relative to demand deposits. This, therefore, might suggest that non-cash payment instruments, which rely on demand deposits for settlement purposes, are increasing in popularity relative to cash.

The US ratio stands out among those in Chart 1 as it has risen steadily over time, from 30 percent in 1991 to 55 percent in 2008. This likely reflects a growing foreign demand for US currency to hold as a store of value. The euro is also likely to be in demand outside the euro

³ The data used in Charts 1-20 are sourced from the ECB Statistical Data Warehouse and the Bank for International Settlements. The deflators used in Charts 3, 6, 7 and 17 are sourced from national statistical offices and Eurostat. The base year in those charts is 2008 and the data are stated in euro.

Chart 1: Currency Outstanding as a Percentage of Narrow Money



area for this purpose, possibly to a greater extent than would have been associated with the Deutschmark and other euro legacy currencies.⁴ This may explain why the decline in the currency-to-narrow-money ratio evident in Germany, the Netherlands and Ireland in the 1990s is not replicated in the euro area ratio in the 2000s.

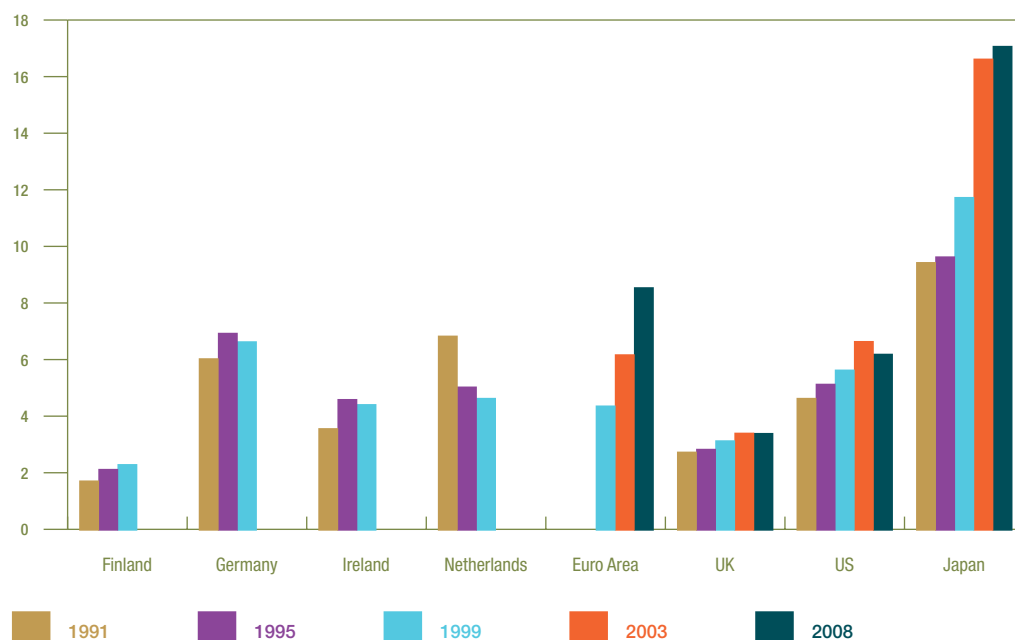
Another measure that allows some understanding of the extent to which cash is used in payments is the ratio of currency outstanding to some measure of economic activity, usually proxied by GDP (measured in nominal terms). This ratio is plotted for the euro area and the selected countries in Chart 2. The rise in the US and euro area ratios over time may reflect the foreign-demand issue discussed above. The GDP denominator in the Japan ratio grew quite slowly in the 1990s and 2000s (owing to deflation and poor economic growth), which contributes to the increase in that country's ratio. There was little change in the Finland, Germany and Ireland ratios in the

1990s and in the UK ratio over a longer timeframe. The only seemingly significant decline in the currency-to-GDP ratio occurred in the Netherlands in the 1990s. As will be shown later, electronic payment media, which are capable of substituting for cash in payments, proved increasingly popular in that country in the 1990s (as well as in the 2000s).

In Chart 3, the amount of currency outstanding in each country and in the euro area is expressed on a per capita basis, having been adjusted for inflation and, where necessary, having been converted to euro. Japan stands out both as the country with the highest holding in each sample year and the most marked increase in per capita holdings over the period examined. This reflects a preference among the Japanese public for using cash in payments and there being little opportunity cost in holding currency in that country in the 1990s and 2000s when interest rates were at low levels. A foreign demand for Japanese yen currency may also be at play. This could also explain the higher per-capita values for US dollars and euro in recent years. There were moderate increases in per capita holdings of most of the featured euro legacy currencies in

⁴ The extent to which cash can be held for other than domestic legal transactions purposes is considerable. Rogoff (1998) estimates that up to 70 percent of the value of OECD currency is held abroad or is used in illegal economic activity within the domestic economy. More recently, Fischer, Kohler and Seitz (2004) estimate that only about 25 to 35 percent of total euro currency is being used for domestic transactions purposes.

Chart 2: Currency Outstanding as a Percentage of GDP

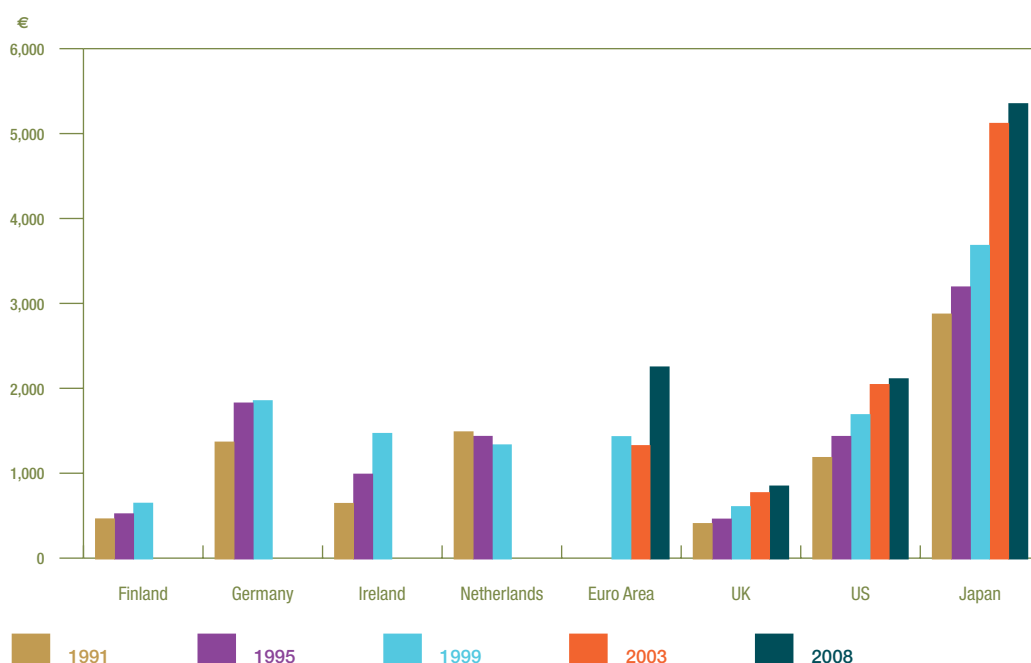


the 1990s, while per capita holdings of UK sterling cash have increased steadily but unspectacularly over time and have always remained below that of other countries.

Per-capita currency outstanding in Finland in the 1990s was low relative to other countries

and the ratios for that country in Charts 1 and 2 are also comparatively low. The measures for the Netherlands in Charts 1 to 3 all declined in the 1990s, even if they remained above the levels of some other countries. The Finland and the Netherlands data suggest that cash may have played a declining or lesser role in payments in those two countries

Chart 3: Real Currency Outstanding per Capita



at that time and that, by implication, non-cash methods must have been playing a greater role, something which is considered in the review of non-cash data in the next section. Germany appears, on the basis of the three charts, to have been a relatively heavy user of cash in the 1990s, although a foreign demand for Deutschemark notes was also likely at play. Ireland also would seem to have had a high dependence on cash in that decade.

The measures provided in Charts 1 to 3 have their limitations in indicating the part cash plays in making payments. Not only are they principally stock-based measures, but it is difficult to quantify the amount of the home currency being held abroad as opposed to being held domestically. It is also hard to distinguish between the amount of currency hoarded by the domestic public as a store of value and that quantity used by it for payment purposes and to ascertain the extent to which cash used in domestic payments is divided between legal and illegal economic activity. The implication is that the amount of currency outstanding (the numerator in Charts 1 and 2), as well as the amounts of per-capita currency outstanding in Chart 3, are, at best, proxies for the use of currency in domestic payments.

3.2 Other approaches to measuring cash usage

Alternative quantitative approaches to assessing the extent to which cash is used in payments have been developed and utilised in recent years to address the shortcomings of the type of stock-of-currency-based measures mentioned above. One approach involves deducing the share, by value, of cash in retail payments. It was applied by Humphrey, Kaloudis and Owre (2000) to Norway data and involves subtracting the aggregate value of payments by cashless payment instruments from total expenditure in the retail sector, with the residual then being taken to represent cash payments. In the case of Norway, the authors found that the share of cash used in retail sales declined from 91 percent in 1981 to 50 percent in 1999. Paunonen and Jyrkonen (2002) used this method in examining Finland data and found that the cash share of POS payments

declined steadily from about 80 percent in 1984 to 54 percent in 2000. A more recent application (De Nederlandsche Bank, 2006) found that cash usage remained relatively stable in the Netherlands up until 2002, with cash outlays declining steadily thereafter.

Another approach to gauging cash usage involves analysing how the composition of the currency stock is evolving over time. While the store-of-value demand for currency focuses mostly on large-denomination notes, smaller denomination currency is mainly demanded for transactions purposes. Bauer and Littman (2007) find that, once the positive impact that rising prices have on currency demand are accounted for, the demand for US dollar notes of between \$1 and \$20 denominations — those typically used in retail transactions — has fallen since 1980, which indicates to them fewer cash transactions occurring within the US economy. They also note that the pace of decline has quickened since 2000. Bauer and Littman also employ another method to get an indication of cash usage in the US economy. It relies on Federal Reserve System data on the destruction of notes returned to its Reserve Banks. Among the banknotes returned to the Federal Reserve, many are deemed unfit for further use and are destroyed. Notes will become unfit for use the more they are used in transactions. If the amount of such notes is in decline relative to some measure of economic activity then it would suggest that cash is being used less in payment. The data indicates that the destruction of both small-denomination notes and total notes in the US has been falling since the mid-1990s and is taken by Bauer and Littman to indicate that cash's share of total payment transactions has been falling over time.

A different method is used by Amronin and Chakravorti (2008) to examine cash usage. Their approach recognises that the transactional demand for currency constitutes only part of the overall demand for currency. How the amount of total currency outstanding is evolving over time then will not provide an accurate picture of the extent to which the more widespread adoption of non-cash

payment instruments is affecting the transactions-based demand for currency. There is a need to disentangle the demand for currency as a payment medium from that generated by its qualities as a store of value.

Amronin and Chakravorti act to separate the demand for currency as a payment medium from that as a store of value by dividing the total currency stock into three denomination categories (small, medium and large). The medium category covers those note denominations commonly dispensed by ATMs. Large-denomination notes are posited to be held for store of value purposes while notes and coin in the small-denomination category are required for the purpose of giving change. Amronin and Chakravorti's basic hypothesis is that if cash is being used less in payments then there will be less demand for change and so the demand for small-denomination currency will decline. Such a fall in demand would reflect a substitution away from cash towards electronic payment instruments. Using data for thirteen developed economies from 1988 to 2003, their results indicate that increased usage of debit cards reduces the demand for small-denomination currency.

Leinonen (2008), having studied statistical developments in payments in EU countries, is of the view that non-cash payments are increasing steadily and are replacing cash in payments.

Beyond these kinds of quantitative measures, survey and anecdotal evidence can also be employed to assess how currency is used in payments. The Committee on Payment and Settlement Systems' (1999) general reading of such evidence available at the time its report was written was that currency was likely the single most important retail payment instrument for face-to-face payments. The report suggested that the average retail transaction involving cash payment is generally low in value and cash payments, therefore, account for a much smaller share of the value of retail payments than of the volume.

3.3 ATMs

Debit cards and other payment cards are discussed in detail in the next section but it

would seem that such card technologies may be impacting cash's role in payments. Another, longstanding card technology, however, can boost cash's use in payments. Automatic teller machine (ATM) card-and-terminal technology allows bank customers access banknotes (with corresponding deductions from their bank accounts) in a variety of locations using a chip-based or magnetic-stripe card, without the need for an over-the-counter teller service. A greater provision of ATMs can maintain and even stimulate cash usage in payments. This is especially the case if the number of bank branches — the alternative means of banks distributing cash to the public — is in decline.⁵ ATMs are also more convenient than bank branches for obtaining and using cash as they tend to be available on a 24-hour basis throughout the week and are often based in retail outlets, such as shopping centres and stores, as well as at bank branches. This convenience is bolstered further by ATMs usually being linked through shared network arrangements, often spanning national boundaries, so that the bank customer does not have to locate a branch or ATM of his/her bank in order to draw down cash.

The number of ATMs per one million inhabitants has increased steadily over time in most of the countries shown in Chart 4. The exception is Finland where the number of ATMs declined during the 1990s before picking up thereafter.⁶ In line with the relatively high amount of currency usage in those countries suggested in Charts 1 to 3, ATM provision is high in Japan and in the US.⁷

Chart 5 shows that the volume of ATM transactions per capita picked up during the

⁵ Using European data, Takala and Viren (2007) point out that the distribution of cash has been moving from bank branches to ATMs and that nowadays there are typically more ATMs than bank branches.

In terms of its broader impact on retail banking, Humphrey, Willison, Bergendahl and Linblom (2003, p.6) argue that for the range of services they provide (which includes cash withdrawals, account transfers, balance statements), "ATMs have replaced the traditional banking office [in Europe] for a large and growing segment of depositors".

⁶ According to Snellman (2000), the decline in ATM provision in Finland in the 1990s reflected banks reducing both the overlapping of ATM networks and the number of bank branches.

⁷ A greater provision of ATMs has implications for banking more generally as ATMs are a more cost-efficient means of delivering certain depositor services than bank branches. Humphrey, Willison, Bergendahl and Linblom (2003) estimate that the rise in the share of electronic payments and the greater availability of ATMs in twelve European countries lowered bank operating costs by \$32 billion between 1987 and 1999, a saving of almost 0.4 percent of those countries' combined GDP.

Chart 4: Number of ATMs per 1m Inhabitants

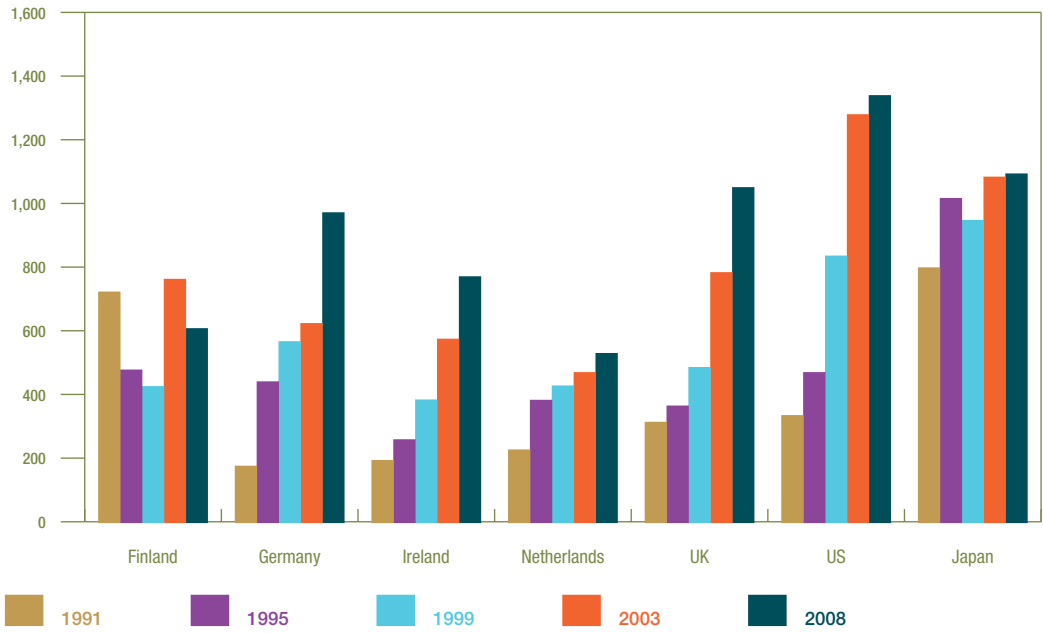


Chart 5: Number of ATM Withdrawals per Capita

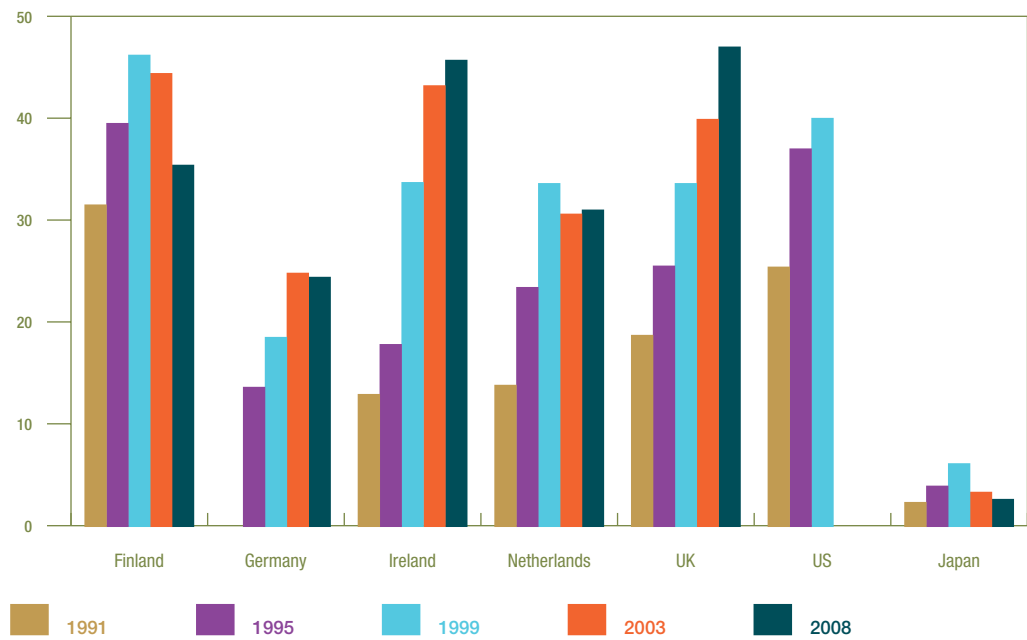
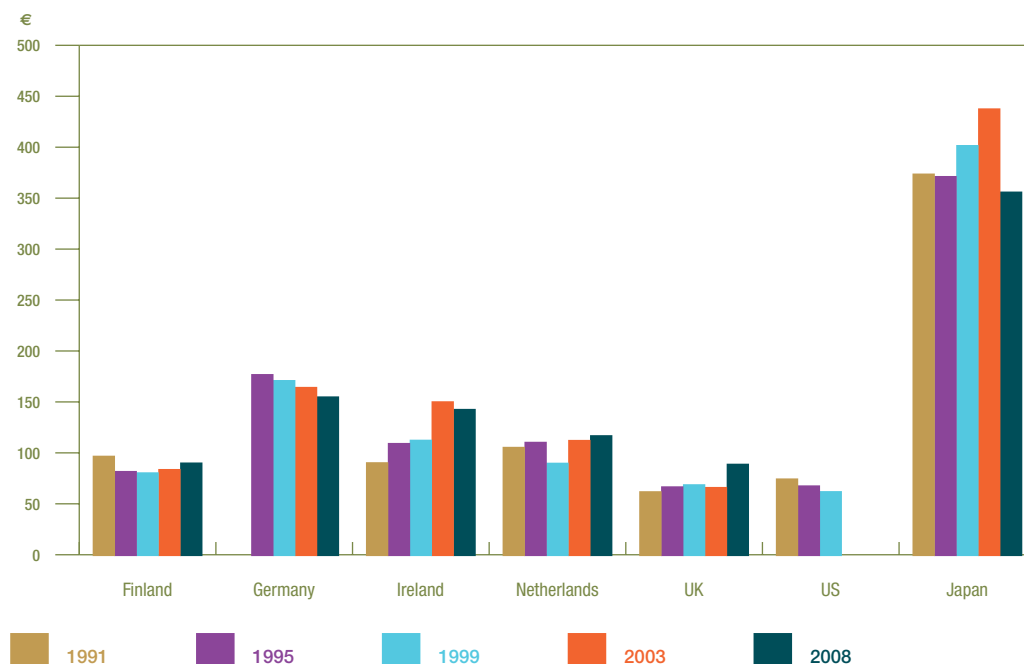


Chart 6: Average Real Value of ATM Withdrawals



1990s in all countries shown. This has continued in Germany, Ireland and the UK in the current decade. The number of ATM withdrawals per capita, however, has declined in the Netherlands and, more emphatically, in Finland during the 2000s, reflecting a 25 percent decline in the total number of ATM transactions in Finland from 1999 to 2008 and an eight percent fall in the Netherlands in the same period. A greater provision of ATMs means that it is easier to make a withdrawal from such a cash dispensing device and so it could be expected that the number of cash withdrawals from ATMs would increase over time in line with the upward trends in ATM provision evident in Chart 4. The Netherlands and Finland data in Chart 5 is at odds with this, however, suggesting that increased ATM provision may no longer be stimulating greater ATM usage in those countries.

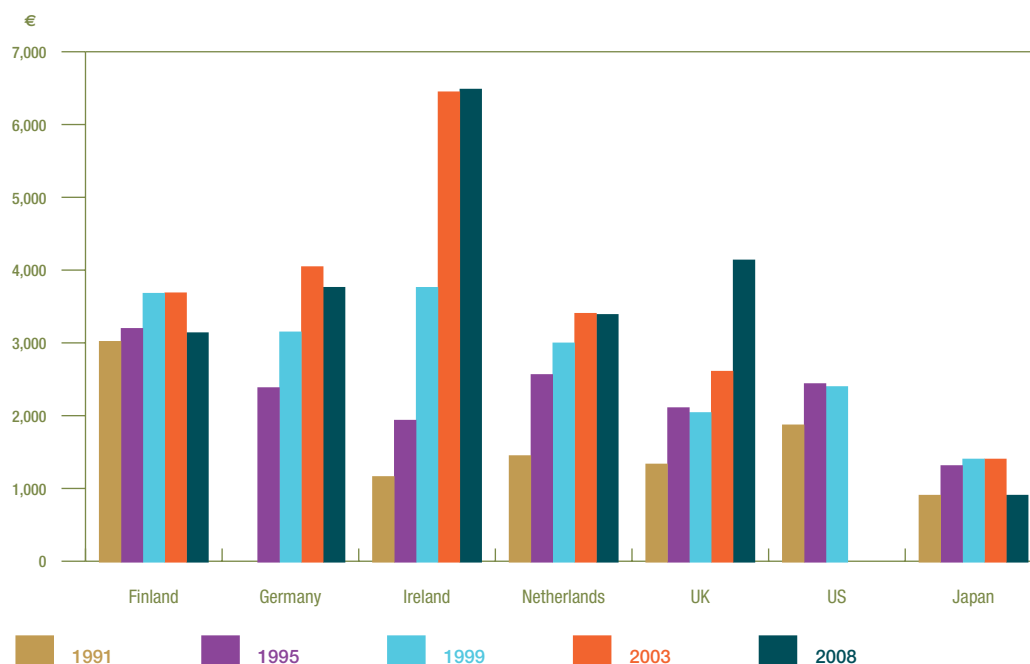
In Chart 6, it can be seen that the average amount of currency, measured in real terms, being drawn down at each visit to an ATM has not changed too much within each country over time, with the exception of Ireland where the average withdrawal amount has increased steadily, from about €90 in 1991 to just over €140 in 2008.

The Japan data stand out in Charts 4 to 6. It seems that while that country has a high per-capita provision of ATMs, the average amount of cash withdrawn is large with the result that ATMs are not used often. This may reflect Japan being a country with a relatively low level of personal crime and individuals, accordingly, being happy to hold large amounts of currency.

Across the European countries and the United States, it can be seen in Chart 6 that the average real withdrawal amount is found mainly in the range of €60 to €155. The banknotes provided in such withdrawals could be expected to be used in payments rather than hoarded. The withdrawals being made within the country means that the cash received is likely to be used domestically. The real value of total ATM withdrawals per capita per annum (Chart 7) may then provide a better indicator of trends in cash usage in payments than that shown in Chart 3.⁸ Chart 7 points to greater cash usage in Germany, Ireland and the UK now than in the past, with the average Irish ATM user drawing down more cash than that in any of the other six countries. Per capita ATM

⁸ Unlike Charts 1 to 3, it also provides us with cash data for euro area countries in the current decade.

Chart 7: Real Value of Total ATM Withdrawals per Capita



cash withdrawals appear to be in decline in Finland and broadly unchanged in the Netherlands in the 2000s. When one considers that real economic activity would have expanded significantly in those two countries over time, it suggests that currency is now playing a lesser part in payments than other media and may even be in absolute decline in that role. This would not be out of line with some of the survey and quantitative measures already discussed for those countries.⁹

4. Cashless payments in modern payment systems

4.1 Overview of cashless payments

The main instruments used to make cashless

⁹ The impact of ATM provision on the demand for average cash holdings held by individuals at any point in time has received attention in the money demand literature. It is acknowledged therein that the impact of an increase in ATM provision on the demand for cash is *a priori* ambiguous as two offsetting effects from a greater number of ATMs play out. The first effect is that demand for cash will be stimulated by its greater availability as the provision of ATMs rises. Against that, the greater convenience with which cash can now be accessed through increased ATM provision means that average cash withdrawals may decline as the public finds it more convenient to withdraw cash more frequently and in lower amounts.

Empirical studies, such as those by Viren (1992) and Stix (2003), tend to back up this ambiguous effect of ATMs on cash demand. Snellman and Viren (2006), however, conclude that the probable outcome of greater ATM provision is that it will increase cash holdings. In contrast, Amronin and Chakravorti (2008) say that there is some evidence that the greater adoption of ATMs has, on net, reduced the demand for ATM-dispensed banknotes.

payments are cheques, giros/credit transfers, direct debits, credit cards and debit cards, while a new payment instrument that can be added to that list is e-money. Excluding e-money, the payment volumes for each of these instruments are summed together in arriving at the total volume of cashless payments per capita plotted in Chart 8.¹⁰ Cashless payments have risen over the sample period in all the countries covered. There has been a steady rise in most countries, although the pattern has displayed some periodic downturns in the case of Germany, Ireland and the US.¹¹

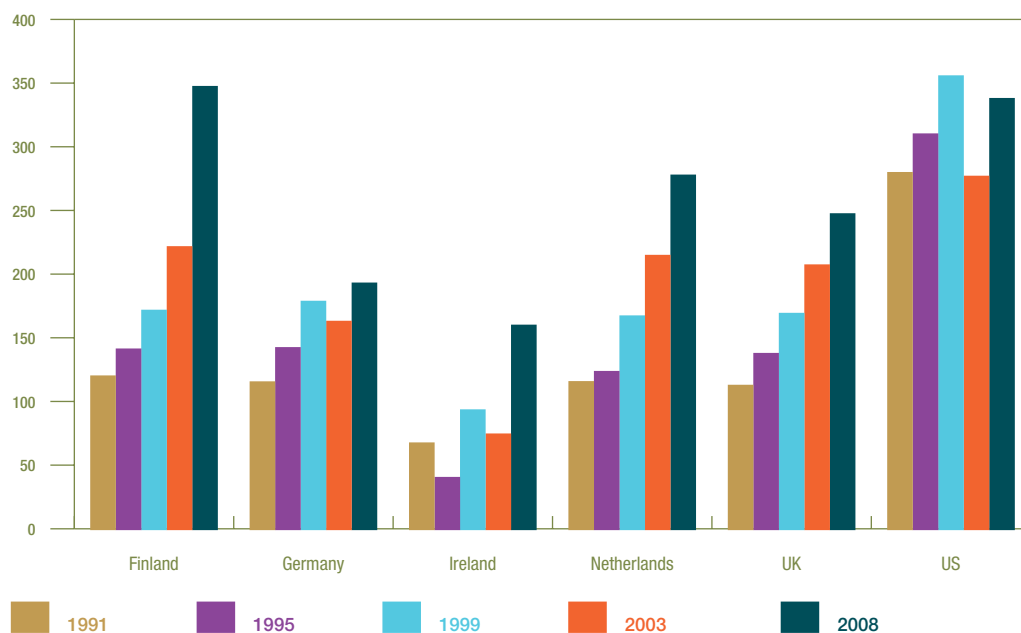
As of 2008, Finland, the Netherlands and the US are the heaviest users of cashless payments among the countries being examined. The US's standing in the ranking of cashless payment use is owing to its high usage of the paper cheque (see Chart 9).¹² The surge in cashless payments in the Netherlands and Finland over the years reflects increased

¹⁰ E-money is excluded given the poor data coverage for that payment type in many countries. Japan is excluded from this chart, given the absence of data for a number of individual payment instruments for that country.

¹¹ This may be explained, in part, by the provision of data for individual instruments in earlier years.

¹² The cheque, while still a paper-based instruction to pay, does now avail of electronic truncation and imaging procedures when being processed by banks.

Chart 8: Number of Cashless Payments per Capita



use of electronic-based instruments. Greater utilisation of electronic payment methods is also the main reason for a rise in cashless payments in the other countries covered in Chart 8, as will be seen in later charts. Humphrey, Willeson, Bergendahl and Linblom (2003) indicate that the share of electronic payments in all non-cash transactions in twelve European countries expanded from 43 percent in 1987 to 79 percent in 1999.

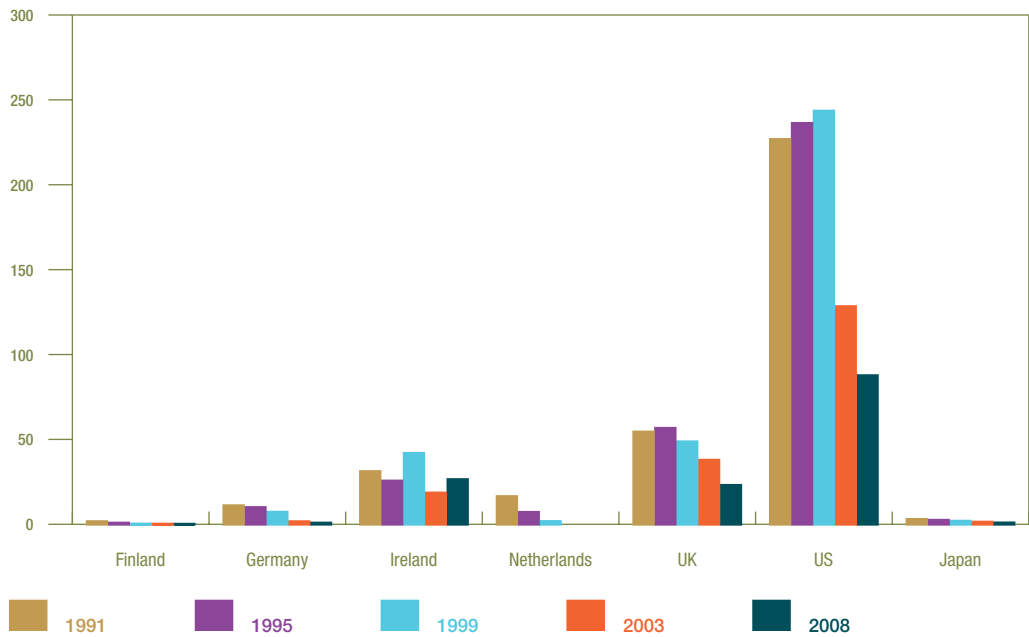
4.2 Non-card-based cashless payment instruments

In examining developments in individual non-cash payment instruments, one can start by looking at two of the older cashless payment instruments, the paper cheque and the credit transfer. Each tends to be associated with particular geographical areas, with the cheque a popular payment instrument in the United States and credit transfers prominent in Europe. Humphrey (2008) points out that a reliance on particular instruments is often the result of “historical accidents”. The credit transfer system (also known as the giro system)

in Europe may be a good example of this as its popularity there as a vehicle for making payments may be owing to the existence of national systems of postal banks. The Committee on Payment and Settlement Systems (1999) explains cross-national differences in the use of cheques and credit transfers by variations in the market concentration of the providers of retail payment services, in the legal and regulatory environment, and in the nature of the risks that occur in transferring value using each instrument.

There is considerable variation in cheque usage across the countries shown in Chart 9. Cheques have disappeared from usage in the Netherlands. The number of cheques written per capita has fallen to negligible levels in Finland, Germany and Japan in recent years. Cheque usage has declined over time in the UK, while it was lower in Ireland in 2008 compared to 1999. Usage in those countries is dwarfed by the volume of cheques written per capita in the US. This was over 240 cheques per annum (or nearly five per week) in 1999, but has fallen substantially since then.

Chart 9: Number of Cheques per Capita



A credit transfer system facilitates moving funds from the bank of the originator of the payment order to that of the intended recipient of the funds. It is nowadays a predominantly electronic-based payment method. In Chart 10, it can be seen that the number of credit transfers made per capita per annum is relatively low in the traditional cheque-using economies of Ireland, the UK and the US but is, nevertheless, on the rise in those countries;

indeed, the number of credit transfers per capita in Ireland and the UK was greater than the number of cheques written in 2008. In the selected continental European countries, the number of credit transfers per capita exceeds the number of cheques written considerably. Credit transfers remain an underused payment instrument in the US. Like cheques, they are not heavily used in Japan, reflecting the preference for cash payments in that country.

Chart 10: Number of Credit Transfers per Capita

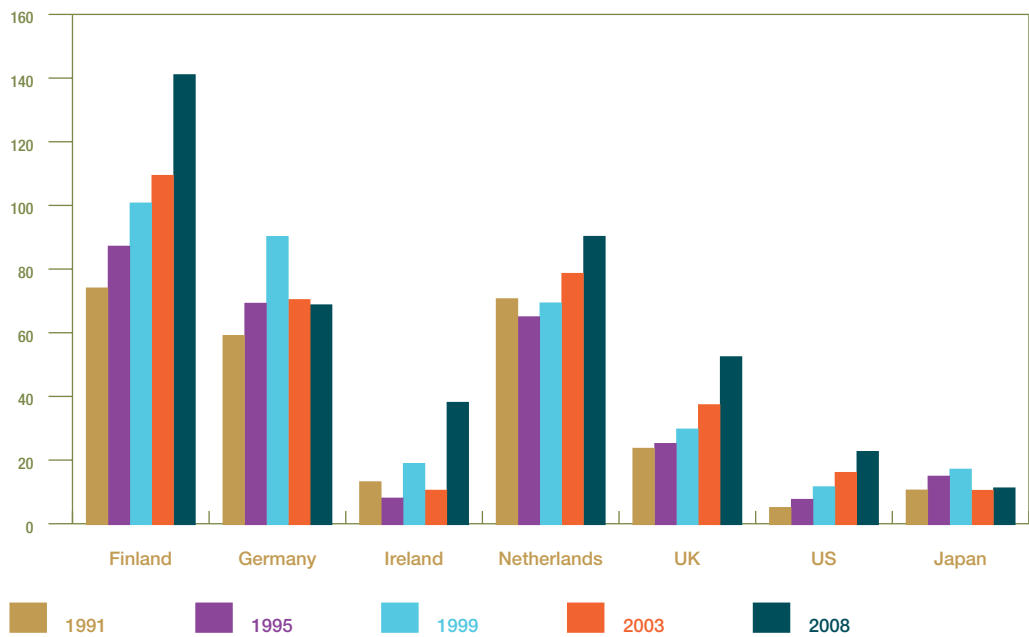
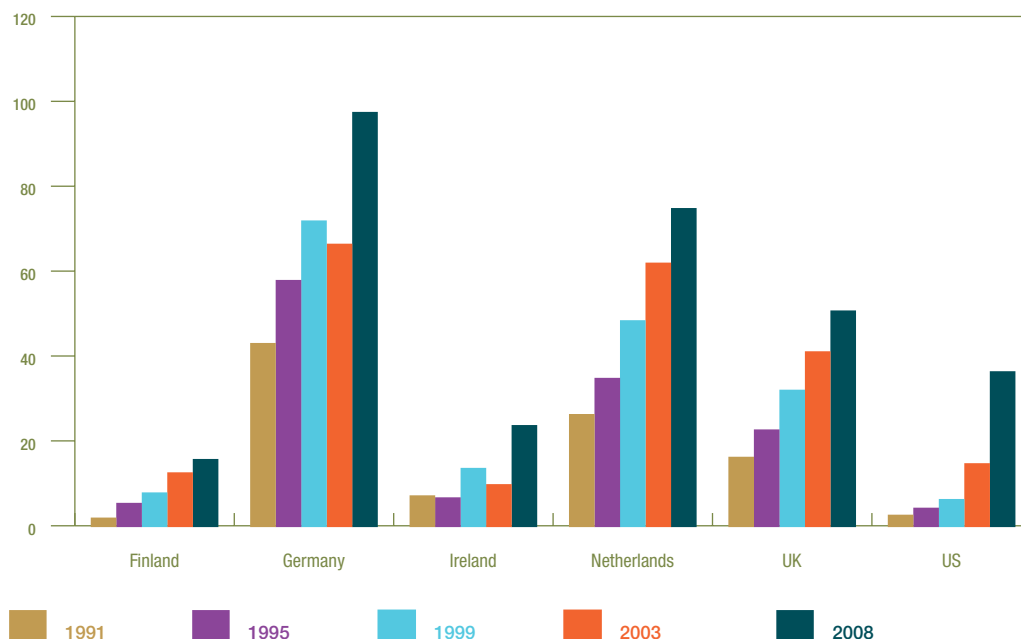


Chart 11: Number of Direct Debits per Capita



A direct debit is a pre-authorised debit on the payer's bank account initiated by the payee. It is often used where a payment must be made on a regular periodic basis. A good example is the payment of monthly or bimonthly utility bills. The number of direct debits per capita per annum has been rising steadily over time in most of the countries shown in Chart 11. The direct debit is particularly popular in Germany and the Netherlands, but its usage is low in Finland where alternative electronic instruments seem to be preferred. As with the credit transfer, Ireland remains somewhat behind some of the other selected euro area countries and the UK in its adoption of the direct debit.

4.3 Card-based payment instruments

Card-based payment instruments have come to play a prominent role in retail payment activity in recent years. This reflects improved electronic technology making a relatively new instrument, the debit card, feasible and rendering the credit card more attractive to purchasers, merchants and banks alike. Typically, these cards now share a common technology of a microprocessor chip being embedded in them.

One of the main uses of debit cards and credit cards (as well as e-money technology, discussed below) is to make over-the-counter payments. These involve monetary value being exchanged between purchaser and merchant by using the card in conjunction with an electronic funds transfer terminal at the point-of-sale (known as POS terminals). Chart 12 shows a steady increase over time in the number of POS terminals per one million inhabitants in all the countries shown, with Finland having the highest number in 2008 and most other countries' provision of terminals being in a range of 16,600 to 19,200 terminals per one million inhabitants in that year. Germany stands out as having a low number of POS terminals, reflecting limited usage of credit cards and debit cards in that country.

A credit card allows the holder to make purchases using the card up to a prearranged credit ceiling. It has proven to be a particularly popular payment instrument in the UK and the US. As Chart 13 shows, the volume of credit card transactions per capita continues to rise in those countries, with usage in Ireland running third among the selected countries in 2008 and also experiencing growth over time in transactions volume.

Chart 12: Number of POS Terminals per 1m Inhabitants

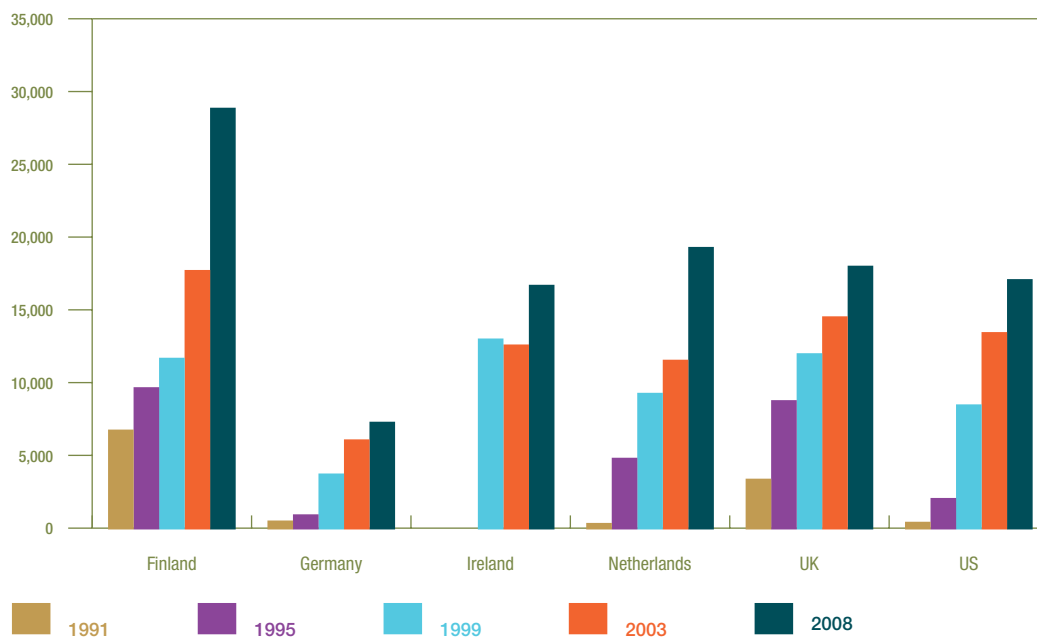


Chart 13: Number of Credit Card Transactions per Capita

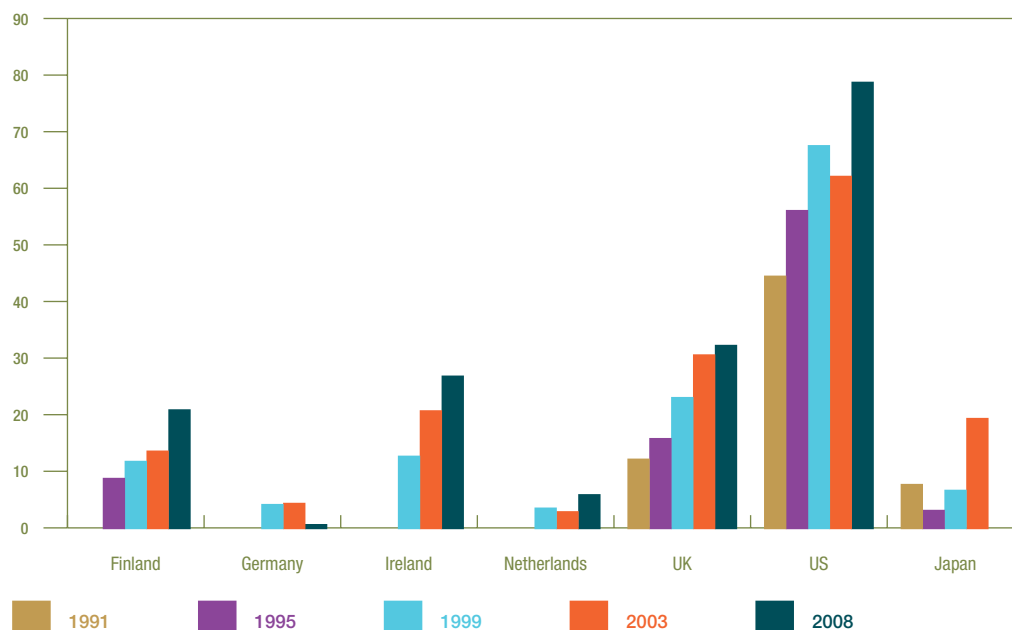
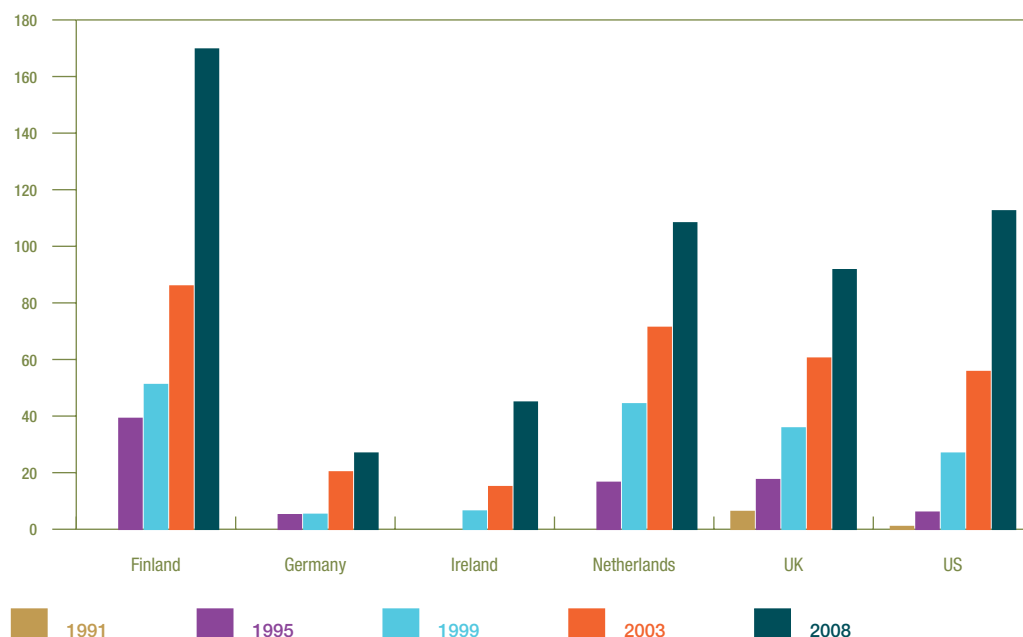


Chart 14 shows a sharp rise in the volume of debit card transactions over time among all the countries shown. This reflects the relative newness of the debit card and it proving to be an attractive payment instrument. A debit card enables the holder to have his payment for purchases directly charged to funds in his

bank account. It has proven to be a particularly popular instrument in Finland and the Netherlands, two countries where the cheque has effectively vanished from use and where the volume of credit card transactions is relatively low.

Chart 14: Number of Debit Card Transactions per Capita



Leinonen (2007, p.22) reports that credit cards have declined as a proportion of total card payments in almost every EU15 country and that this has occurred alongside a corresponding rise in debit card payments. For the countries under review here, the entries in Charts 13 and 14 show debit card payment volume exceeding that of credit cards in all countries for which data is available in 2008.

A question that often arises is whether the debit card could start to replace cash in payments. Cash's future in payments is considered in section 7 but it is worth noting that a De Nederlandsche Bank (2006, p.65) review indicates that the value of debit card payments came to exceed that of cash payments in the Netherlands for the first time in 2004. That study sees cash usage declining further in that country as debit card usage rises. Amronin and Chakravorti's (2008) results indicate that the demand for small denomination currency decreases with greater debit card usage. In contrast, they find that the demand for high denomination notes is generally unaffected by changes in debit card usage.

4.4 E-money

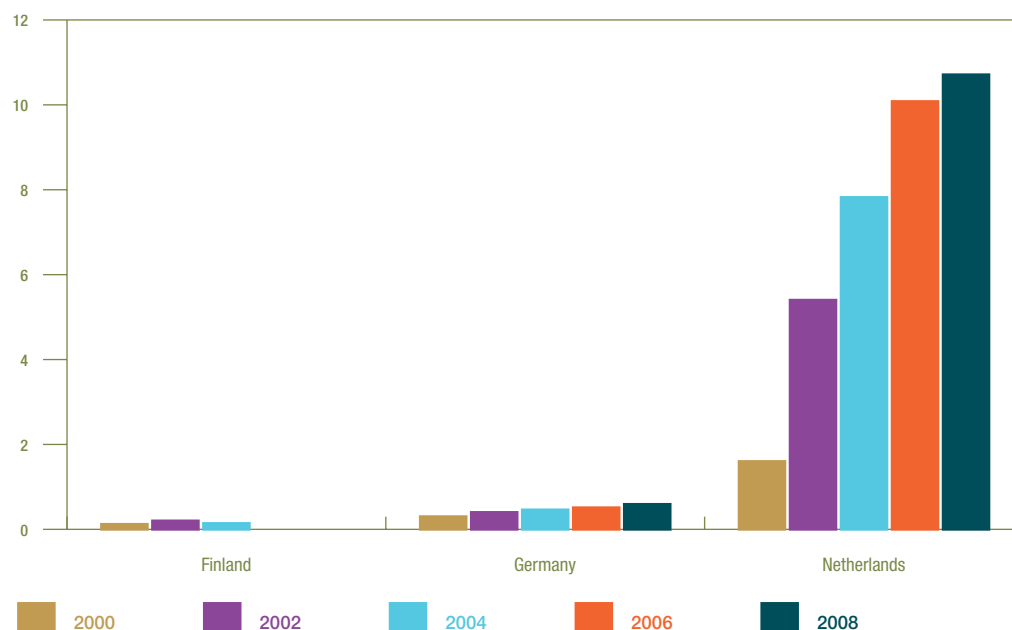
A final non-cash payment instrument that needs to be considered, even though it currently has

only a small share of retail payments, is e-money. The term "e-money" is used to describe value stored electronically in a payment card's integrated chip or on a personal computer, and where value can be transferred from one e-money storage vehicle to another, either at the point of sale or remotely.¹³ To qualify as a payment instrument and as a potential substitute for other payment instruments, Snellman (2000) suggests that an e-money instrument must be sufficiently "general purpose" such that it can be used to make purchases from service purchasers other than the issuer.

E-money cards are thought of as the closest non-cash comparator to notes and coin because, like cash, they allow cardholders to carry around on their person stored general-purpose purchasing power, or value, for use at a point-of-sale. It is also possible to conceive of these balances being exchanged, as cash often is, in open circulation, i.e., without each exchange of value having to go through the banking system. One advantage that e-money

¹³ The terms "e-purse" and "multi-purpose prepaid card" are also used in this area. They are, essentially, preloaded or reloadable microprocessor-based cards that carry value intended for use in small-value payments.

Chart 15: Number of e-money Purchase Transactions per Capita



has over cash is that value transfer and storage security can be protected using encryption and other technologies. Chakravorti (2006, p.87) indicates that stored-value products tend to be successful when payments are time-critical, where there is a high handling cost associated with cash usage (he cites vending machines as an example), or where vandalism to a payment device into which cash is deposited is possible. E-money then may have qualities that will help it become a significant payment instrument in the future. Its ability to replicate some of cash's hitherto unique features may allow e-money challenge that medium's place and role in payments over time. Against that, it must be noted that there have been e-money technologies in the past that promised to become mainstream payment instruments but failed to do so. The UK Mondex system, for example, did not move beyond trial stage in the 1990s.

The e-money data graphed in Charts 15 to 17 cover a shorter timeframe (2000-2008) and contain fewer countries than found in earlier charts. This reflects e-money being a new payment instrument that has not yet achieved widespread use and the limited availability of e-money data. Chart 15 shows strong growth in e-money purchase transaction volume per

capita in the Netherlands in the 2000-8 period. There has been a rise in the provision of e-money card accepting terminals in all three countries covered (Chart 16), suggesting a commitment by the national banking and retail sectors to e-money as a transaction medium. Chart 17 shows that across the three countries, the real average value of each e-money purchase is low (ranging between €2.20 and €3.40), an indication of it being used in transactions normally associated with cash usage.

5. Assessment of trends and developments and cross-country comparisons

The charts and literature reviewed in the previous two sections would seem to indicate that payment habits are changing in advanced economies. Cashless payments are on the rise. Electronic instruments appear to be replacing paper-based instruments in payments, with the decline in cheque usage notable and credit transfers and direct debits being used more. Debit card transactions are also increasing and have overtaken credit cards among card payments. It also seems that cash may be being directly replaced by debit cards in making payments.

Chart 16: Number of e-money Card Accepting Terminals per 1m Inhabitants

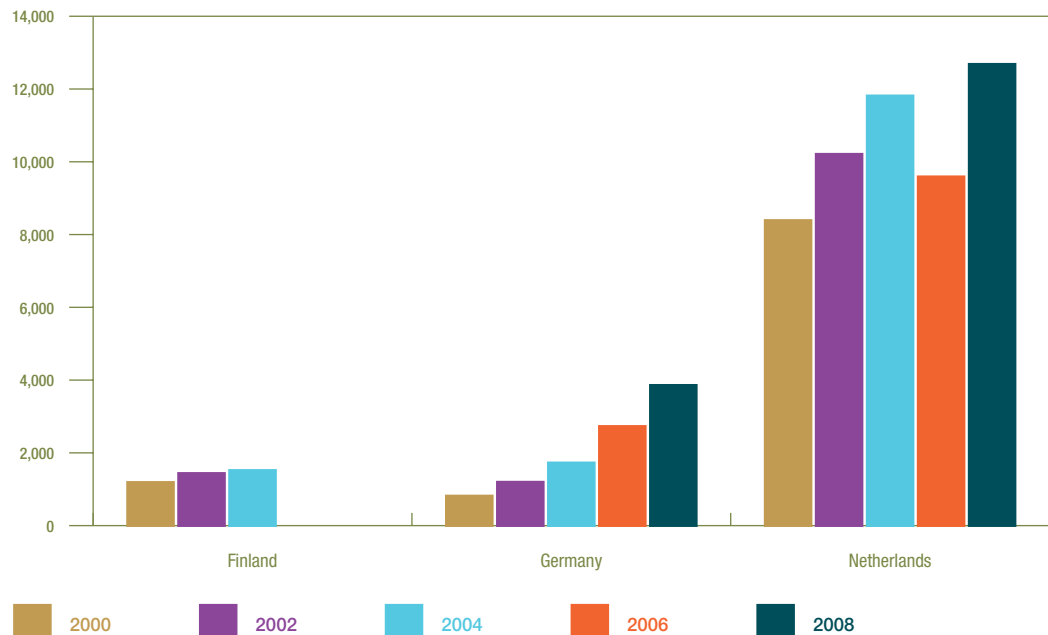


Chart 17: Average Real Value per e-money Purchase Transactions

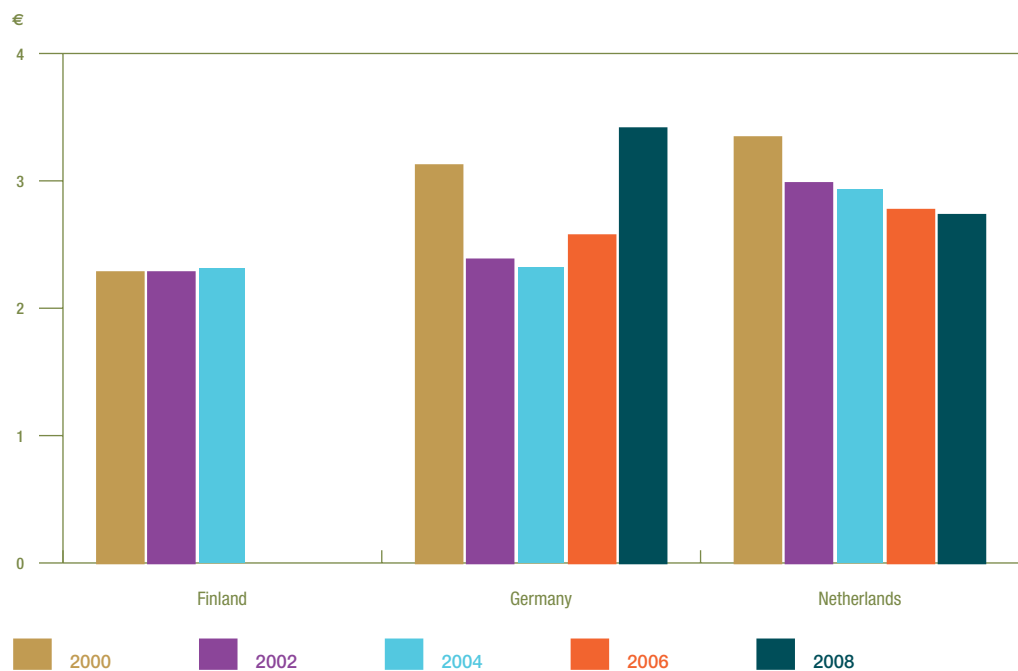
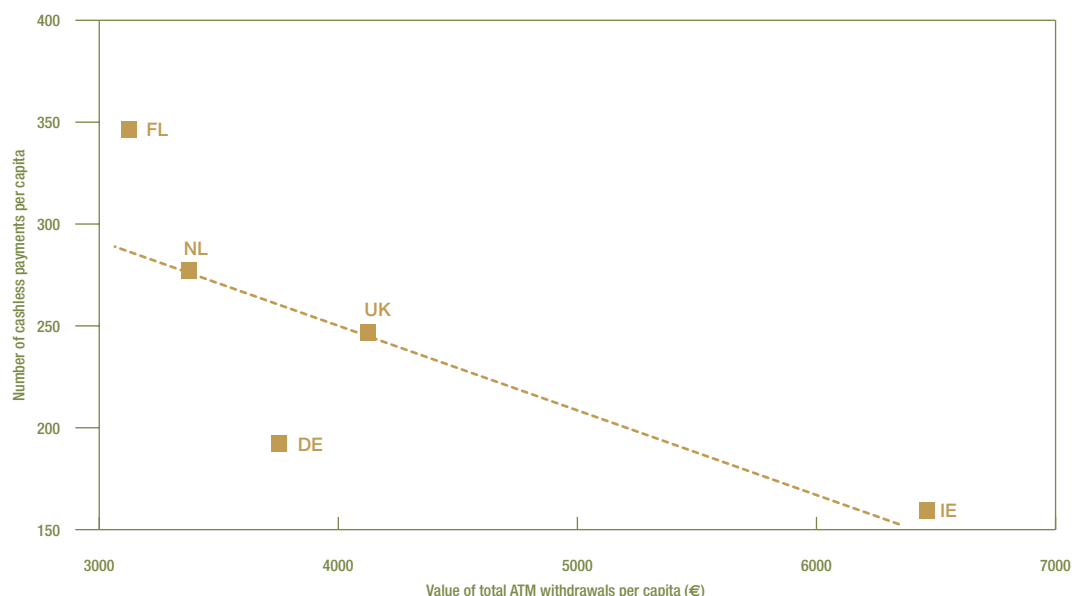


Chart 18: Value of Total ATM Withdrawals per Capita versus Number of Cashless Payments per Capita (2008)

It remains to draw together some of the data used in sections 3 and 4 to make a cross-national, indicative assessment of the state of play in retail payments, as of 2008. In Chart 18, a scatter-plot of the value of total ATM withdrawals per capita versus the total number of cashless payments per capita is shown for five of the hitherto featured countries. In general, it is notable (as indicated by the negatively-sloped trend line) that the greater the per capita amount of cash withdrawn from ATMs per annum (a proxy for the usage of cash in payments), the lower the number of cashless payments made. The average Irish payer makes the highest value of cash withdrawals and is the lowest cashless payments user among the entries plotted in Chart 18. When the value of per-capita ATM withdrawals is plotted against the number of card payments per capita (Chart 19), the trend line fitted among the country observations is also negatively sloped and Ireland appears towards the extreme among the countries shown in its preference for cash over cashless payment methods.

Chart 20 plots the number of card payments per capita against the number of other cashless payments (i.e., the total number of cashless payments less those made by card

and e-money devices) per capita for each of six countries. This suggests little or no trade-off between usage of card payments and non-card cashless payments. Ireland is a relatively low user of both payment cards and other cashless payment instruments.

6. The forces that shape retail payment practices

6.1 More than efficiency considerations influence payment developments

One might expect that technological advances which promote greater efficiency in payments would be the main factor at play in changing retail payment practices. The availability of new payment technology across national borders and the expectation that payment users in different countries will have similar demands (according to Humphrey (2008) they mainly have a desire for convenience and security) should mean that even though national payment systems operate mainly in isolation from one another that they should be broadly alike. If cost was the sole factor at play in shaping payment practices then it could be expected that all payments would be electronic.¹⁴

¹⁴ An indication of the cost savings that can be made is given by Humphrey, Willeson, Bergendahl and Lindblom (2006) who find that the average bank cost of such an electronic form of payment is one-third to one-half that of a cash or paper-based payment.

Chart 19: Value of Total ATM Withdrawals per Capita versus Number of Card Payment per Capita (2008)

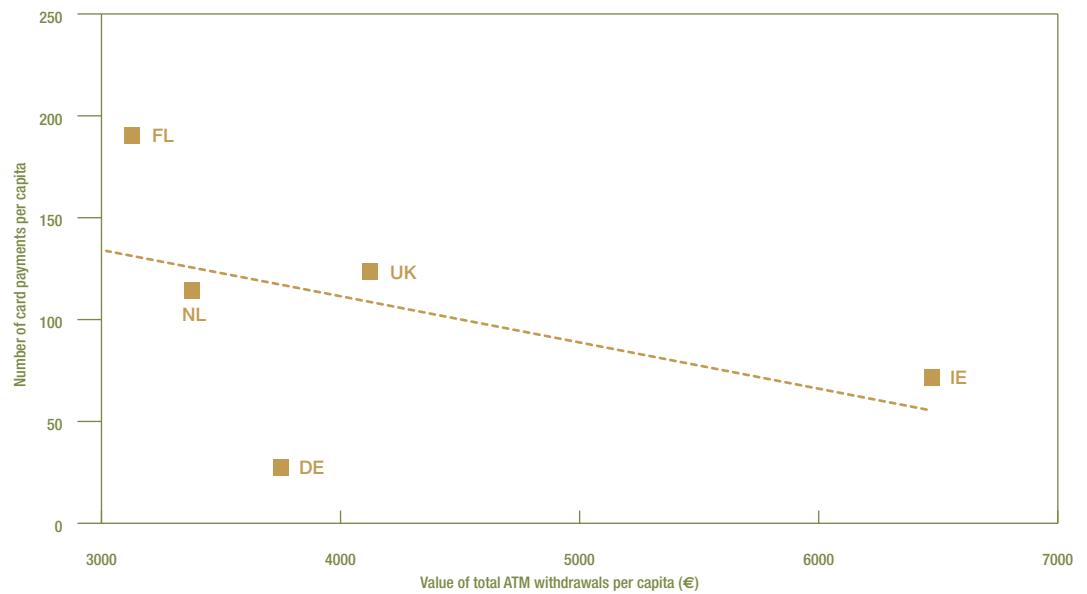
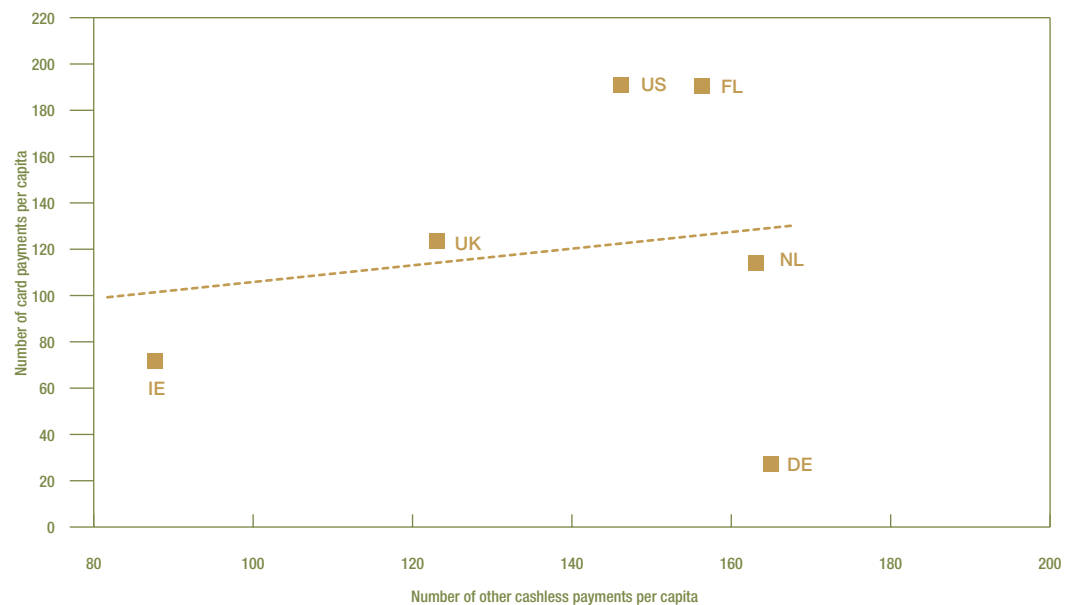


Chart 20: Number of other Cashless Payments per Capita versus Number of Card Payments per Capita (2008)



The charts and references in sections 3-5, however, reveal significant differences in retail payment habits across countries and varying usage rates for relatively new electronic payment instruments, such as debit cards. As will be elaborated upon below, there are factors at play that slow down the speed at which more efficient payment instruments are adopted and that help maintain less efficient payment media in continuing use.

Before moving on to consider those factors, it must be acknowledged that efficiency, nevertheless, does seem to play a role in retail payment developments and that a move towards more economical payment practices is taking place. A general observation from previous sections is that electronic payment instruments appear to be on the rise relative to paper instruments, reflecting both changing consumer preferences and policy initiatives. The switch to electronics is reducing payment costs. Bauer and Littman (2007) estimate that by increasing the share of non-cash payments made electronically, as opposed to being conducted by paper means, from 43 percent in 1987 to 79 percent in 1999, twelve European countries saved the equivalent of almost a half of one percent of GDP from the cost of running their payment systems.

6.2 The impact of charges on payment instrument usage

One impediment to more efficient payment practices being adopted by the public is that payment instruments may not be priced (in terms of the charge imposed on payers) in a way that reflects the underlying cost of making a payment with them. In other words, the cost to the payer (termed the “user cost”) may not reflect the total resource cost of his/her choosing to make a payment using a particular instrument (this total resource cost is often termed “social cost” to reflect a payment imposing a cost on more than the payer alone).

The cheque is often held up as an example of a payment instrument whose total cost has often not been reflected fully in the charge to a payer using it. Cheques have long had a much higher per-item social cost than electronic alternatives and, yet, for users have often been

the least costly payment instrument available.¹⁵ This happens when the charge, if any, imposed by the bank for using a cheque is less than its social cost. Even if a higher charge was imposed, a payer would still benefit from a float (interest) income during the time it took the cheque to clear through the payment system and his/her bank account being debited for the payment amount. That benefit would offset, partially or fully, any upfront charge for using a cheque and could mean that the net cost of the cheque to the payer would be less than for an electronic payment instrument such as a debit card where settlement might occur more quickly.

There may be little incentive at the level of individual banks to ensure an efficient pricing of payment instruments as they may fear that they will lose custom to other banks if they act unilaterally in raising charges on inefficient payment media. Increasing the user cost of such instruments, with the purpose of achieving greater efficiency in payment practices, often then takes place as part of an industry initiative and may be supported by government policy.

Scandinavian countries have proven a good testing ground for seeing how pricing can impact on payment choice as electronic substitutes for cheques have been widely available and promoted there for some time. Humphrey, Kim and Vale (2001) find that Norwegian payment users respond to prices that reflect the relatively lower cost of electronic payments by using that form of payment more often. Chakravorti and McHugh (2002) instance a rise in the pricing of cheques *vis-à-vis* other payment options as driving a decrease in cheque use in Scandinavian countries.

The role that pricing can play in effecting change in payment practices should not be overstated. Bolt, Humphrey and Uittenbogaard (2008) argue that while there is much evidence that consumers respond in general to price incentives, the extent of that response is less well-known in the payments area. They note that explicit pricing saw a rapid shift to electronic payments in Norway, while a similar

¹⁵ It is also possible that cheque users may perceive cheques to be a relatively low cost payment option if they are unaware of the charges imposed on different payment instruments.

shift occurred in the Netherlands without any pricing policy.

6.3 Inertia in payment practices

Chakravorti (2004, p.39) indicates three necessary conditions for a new payment instrument to prove successful among the public. They are that “consumers and merchants need to be convinced of its advantages over existing payment alternatives for at least some types of transactions; payment providers must convince consumers and merchants simultaneously of its benefits to achieve critical mass; and assure them that adequate safety and security measures have been implemented”. Some payment system participants may be more easily convinced or be more open to being convinced than others of the comparative advantages of new instruments. They may also be more willing to try out and embrace new payment methods.

Age profile and socio-economic background can indicate what type of persons will fit into that category. Humphrey, Kim and Vale (2001) note that surveys of payment habits usually report that, in the absence of pricing initiatives, young adults and higher-income individuals are more inclined to adopt electronic payments. Likewise, Jonker and Kettenis (2007) cite various studies which indicate that the take-up of debit cards and e-purses is impacted by the age and educational attainment of users. High-income individuals are attracted to electronic payment instruments because they value the time that often can be saved in using them over a paper alternative. For young adults, their relatively short history of using paper-based instruments and an openness to new products and devices lies behind their willingness to use electronic payments. This contrasts with a greater conservatism in payment practices among older people.

While many members of the public then are willing to adopt new payment methods, there are also constituencies that are resistant to change. Such inertia is recognised as a force at play in shaping payment practices over time. Policy can play a role in counteracting the effects of inertia and in helping to remove inefficient instruments, such as cheques, from

payments. Recent budgetary policy in Ireland, for instance, has brought an increase in the stamp duty on cheques. Such measures help discourage payers from using cheques. Policy can also promote more efficient payment methods. For example, the SEPA (Single European Payments Area) initiative, in aiming to make all electronic payments in euro between participating countries easy, inexpensive and secure, helps to promote electronic payments more generally.¹⁶

6.4 The role of network effects

While individuals and firms may be inclined to adopt new payment instruments, they may be discouraged from doing so if those instruments are not used by others. This is because the overall benefit of a payment instrument to a payer increases with a rise in the number of payment system participants using the instrument. A sufficiently large or growing network of users then is required to support adoption of a new payment instrument.

The absence of a significantly-sized network of users of a payment instrument can slow its adoption and even prevent an efficient payment instrument becoming widely used. Building up a network of users may require a substantial initial outlay in providing the payment infrastructure needed to support the instrument's widespread use. Uncertainty as to the extent to which the infrastructure will actually be used may lead to that outlay being deemed prohibitive, impeding adoption of the new payment instrument and a network of users developing.

These obstacles to the adoption of new, more efficient payment instruments can, and have, been overcome. Once a critical mass of users is reached for a payment instrument, others are more easily persuaded to adopt it. Eventually, almost all payment systems participants will end up making regular use of the instrument.

Leinonen (2007, p.19) suggests that payment habits have historically changed in ten-year cycles. He characterises the process of

¹⁶ It is worth noting that cheques are excluded from the SEPA initiative, which lessens their attractiveness relative to electronic payment instruments.

adoption of a new payment method over that timeframe as involving three phases. Initially, there is a period of slow progress as innovators begin to use a new payment service or device. The second phase takes place when the majority of the population come to adopt the payment instrument and can be completed quickly. The final phase is marked by slow progress again as the most resistant to change begin using the new service. At the end of the ten years, the new payment instrument will have become a mainstream, or mature, payment device.

Government and other authorities are in a position to speed up adoption of new payment instruments by promoting and coordinating payment innovations. This can, in particular, overcome the impediment that network effects can pose to new payment instruments being accepted and used by the public.

7. How might retail payment practices evolve in the future?

7.1 A changing payments landscape

The pace of change in payment practices may have speeded up of late. Leinonen (2008) takes the view that the recent move from paper-based to electronic-based transfers has been quite fast when viewed in historical context. He also makes the apt point that customers are unlikely to want to use a large number of payment instruments that are often substitutes for one another. When faced with an array of payment options, they may then choose to discard some instruments.

In that context, it is worth considering how payments may evolve in the years ahead. It is particularly important for central banks to do this, not only because they are themselves direct participants in payment systems through their supply of notes and coin to the public and provision of settlement services to banks and other payment providers, but also because they are also often involved in promoting efficiency in payments.

The review of recent payment data in earlier sections points to all cashless payments being electronically-based in the coming years. The

extent to which electronic cashless media will replace cash in payments remains to be seen. There is already evidence of some replacement but it does not follow that a continuing and, ultimately, full substitution of electronic media for cash will occur in the future. There are features of cash that could sustain a demand for it. The focus in this section then is on the cash-versus-electronics issue and on assessing the extent to which electronic-based payment media will replace cash in payments.

7.2 New technology

While they may not yet play a prominent role in current retail payment systems, it is worth examining nascent technologies which are mainly designed to substitute for cash in payments and that could impact payment practices in the years ahead.

One innovation is the near-field communication (NFC) chip. It can be embedded in mobile phones and can transfer value when placed up close to a reading device. This “contactless” technology could prove particularly useful for small-value purchases where lower denomination banknotes and coin are currently used. An example of how this form of technology can impact cash usage is the large-scale substitution of the “Oyster card” for cash in the purchase of public transport tickets in London in recent years. This is an example of electronic technology being used to make small-value payments, a payment type that has hitherto been mainly cash-based.

Leinonen (2008) is of the view that mobile phone technology could become the basis for making many payments in the 2010s, provided that it is supported by good security and data content standards. This technology could allow person-to-person payments to be made more easily by electronic means and, as a result, could reduce the use of cash in that area. Similarly, mobile phone technology could allow payment, e-invoicing and e-receipts to be integrated into one device. In itself, this joint capability could promote the use of mobile phones in payments.

Electronic technology could also speed up the processing and settlement of payments,

irrespective of the physical distance between payer and payee. Leinonen (2001) suggests that new technologies enable all parties to a transaction to be part of the payment process in an immediate and simultaneous way, irrespective of how far apart they are geographically separated. If a secure cross-national network of communication could be provided, which would probably require domestic and international interbank cooperation, most payments could then be processed and settled in real-time. Leinonen argues that this would be a good thing as executing payments without delay would eliminate certain costs.

Other current technological innovations could be mentioned, while more can be expected to come on stream in the years ahead. Those discussed give a flavour of where payment technology may be going. They suggest that real-time settlement of retail payments may become feasible over time and that certain small-value payments, including face-to-face payments, could take an electronic form, where economic considerations hitherto dictated them usually being made with cash.

7.3 Will electronic payment media substitute for cash in payments?

Cash remains the great survivor among paper payment media, with cheques appearing to be in decline and credit transfers and credit card payments now being largely made on an electronic basis. New technology, however, seems to be delivering viable substitutes for cash in payments. The possibilities in the area of small-value payments offered by the kind of technologies discussed in the previous subsection, together with evidence that debit cards and other electronic technologies may already be making inroads into cash usage, has focussed attention on the question of what could happen to cash's share of payment activity in the future.

A number of data-based forecasts predict cash's share in the aggregate value of retail payments falling in the coming years. De Nederlandsche Bank (2006), for example, estimates that cash's value share of payments will decline from 43 percent in 2005 to 20

percent in 2015 in the Netherlands. It attributes recent falls in cash payments to consumers using debit cards and e-purses in preference to cash. Humphrey, Kaloudis and Owre (2004) employ an econometric model to estimate the share of consumers' payments made with cash in Norway. They find that cash's share declined from 81 percent in 1990 to just 54 percent in 2000 and forecast it to fall to 25 percent in 2010.

The Netherlands and Norway can be considered "progressive" in their payment practices. While the shift away from cash to electronic payment media may not be reflected as quickly or to the same degree in other countries, the broad direction is likely to be the same — a contention that receives support from Snellman, Vesala and Humphrey's (2001) examination of the extent to which noncash payments substituted for cash transactions at points-of-sale in ten EU countries between 1987 and 1996. That study found that while general trends in cash substitution were quite similar across those countries, individual countries were at different stages in the substitution process. The stage at which individual countries were at depended on technological considerations, most importantly on the diffusion of card payment infrastructure such as POS terminals. Bauer and Littman (2007) find that the US public is switching from cash to electronic forms of payment but that this is occurring slowly.

The subscription of electronic payment media for cash in the future may be even greater than these various studies predict, given that they rely on historical data and take a short forecast horizon. Jonker and Kettenis (2007) note that the use of electronic payment instruments has increased substantially in a short period and that cash's relative decline in payments is owing to a rise in the use of debit cards and, to a lesser extent, e-money. This substitution process in payments is still in train and may intensify further in the coming years as demographic, socio-economic and technological developments support new electronic payment instruments designed to substitute for cash in payments.

Interpretations of the data as well as conjectures based on the impact new technologies may have on payments then seem to suggest cash playing a lesser role in payments over time. It does not follow, however, that cash will eventually disappear from use. This is because, as Davies (1997) eloquently puts it, electronic payment media aimed at replacing notes and coin “face the entrenched defences of the longest-lived, most tried and tested kind of money known to civilised society”.

This is reflected in cash continuing to have clear advantages to the public in making payments. A key benefit of cash is that it can preserve the anonymity of a transaction, if that is what is desired. This feature of cash appeals to those who wish to maintain privacy in their payment dealings and is also conducive to undertaking illicit transactions and in evading tax. Use of cash also ensures immediate settlement of a transaction and avoids having to make payments through the banking system.

The liking of consumers for cash means that banks will likely have to continue to supply it to customers. It may also temper any inclination to impose fees and tariffs on cash withdrawals by bank customers. Snellman and Viren (2006) note that cash continues to be supplied to customers in spite of the negative net rate of return to banks from carrying cash and banks preferring to see their customers keeping their spending balances within the banking system in the form of deposits.

Electronic substitutes for cash have their own downsides which may slow or hinder any switch away from cash. McGrath (2006), for instance, stresses cost as an impediment to the electronification of small transactions (what he terms “micropayments”). Flat fees, as well as fees charged as a percentage of the payment amount, can reduce the incentive for merchants to encourage or facilitate electronic micropayments, with the size of the fixed fee component becoming more pronounced the smaller the payment. Besides per-transaction costs, it must also be borne in mind that merchants will often be required to expend what they might see as relatively large outlays

in putting in place POS card readers and such like. They may be reluctant to do this, particularly if they are uncertain as to what extent electronic payment cards will be used or for how long the reader technology will remain suitable for use.

8. Conclusion

Recent years have seen new payment instruments, such as debit cards and direct debits, coming on stream or being made more widely available. They are capable of substituting for older instruments, such as cash and cheques, in payments. How has their introduction impacted payment practices? Given the review of payment data and discussion in this article, it seems appropriate to suggest that the paper cheque may soon disappear from use and that debit cards will come to play an even greater role in payments. Within the cashless instruments sphere of payments, there seems to be a move towards fully electronic payment methods and a rise in the use of newer electronic instruments.

The data suggest cash payments being in relative decline. Cash, however, continues to have advantages of anonymity and convenience in small payments that new electronic instruments cannot yet match and which may hinder large-scale replacement of cash by cashless payment instruments. Nevertheless, because new instruments may come to mimic or even better these and other features of cash, a continued, gradual reduction in cash's proportion of total payments volume and value seems likely over time. The view of Jonker and Kettenis (2007), who write that the end of the “cards for cash” substitution process is not yet in sight and that the question that will be answered over time is to what extent cash will be replaced by electronic media rather than whether full substitution will occur, seems apt.

Ireland seems to be less responsive to newer payment technologies than other developed countries, at least among those used for comparison in this article. There has been some change in Irish payment practices in recent years, however, and it seems likely that a shift toward electronic payments will

continue. Cost savings that can accrue from a move in this direction should prove an impetus to a change in payment habits in Ireland.

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Summary of CBFSAI Research in 2009

1. Introduction

This article seeks to familiarise both those within and outside the CBFSAI with economic research being conducted in the Bank. 2009 saw a large number of research papers being released, amounting to 16 in total. This article presents non-technical summaries of these papers, as well as briefly outlining some of the other economic research activities undertaken.

Published research in 2009 was in the area of house prices, growth, trade, labour markets, macro and inflation forecasting and continuing work on a financial capability survey conducted by the CBFSAI. All research technical papers released by the CBFSAI are available at: <http://www.centralbank.ie/frame—main.asp?pg=pub—tech.asp&nv=pub—nav.asp>

2009 Macroeconometric workshop

In November 2009, the EAR department hosted a two-day macroeconometric workshop. This was very well attended by close to 50 economists both working in Ireland and also in other national central banks and foreign institutes. At the workshop, four economists — Antonello D'Agostino (CBFSAI), Domenico Giannone (Université Libre de Bruxelles), Michele Lenza (European Central Bank) and Giorgio Primiceri (Northwestern University) each conducted three hour sessions on reduced form and structural macroeconometric models.

New Project Seminar 2010

In early February 2010, the CBFSAI hosted its second new projects research seminar, where all new proposed research projects for 2010 were presented by members of the Economic Analysis and Research (EAR) and Monetary Policy and International Relations (MPIR) departments. Reflecting the importance of the financial crisis, an increasing amount of research will be devoted to financial stability issues. In this regard, 2010 will see the commencement of the new Eurosystem research network “Macro-prudential research” (MaRs).

Guest Speaker Series

The CBFSAI has a guest speak series, where invited speakers give seminars on a regular

basis. In 2009, those who gave seminars at the CBFSAI included Frank Smets, head of research directorate European Central Bank, Anna Maria Lusardi, Dartmouth College, Domenico Giannone, Université Libre de Bruxelles, Giorgio Primiceri, Northwestern University, Michael Fleming, New York Federal Reserve, Jerry Caprio, Williams College, Peter McAdam, European Central Bank and Luca Gambetti, Universitat Autònoma de Barcelona.

2. Non-Technical Abstracts of Research Technical Papers

Paper 1/RT/09: Financial Capability: New Evidence for Ireland, Nuala O'Donnell and Mary Keeney

Recent increases in financial innovation, particularly in the Anglo-Saxon banking culture, have seen a considerable growth in the amount of financial products available to the general public. Simultaneously, many workers are increasingly assuming responsibility for planning for their future pensions. This allied to increased life expectancy necessitates a greater degree of financial capability amongst the general public. This study has empirically examined this issue for the first time in an Irish context. As such, this report follows a nascent literature internationally. The related issue of financial literacy has been studied for several years in the US while a major study of financial capability was completed in the UK in 2006. This report follows that UK study closely. This is the first major evidence on financial capability in Ireland, conducted with a purpose-designed, in-depth, representative survey of just over 1,500 people — commissioned by the Financial Regulator.

In line with the UK survey, four domains or areas of financial capability were covered. These were managing money, planning ahead, choosing products and staying informed. The first domain, managing money, had two main elements, namely making ends meet and keeping track. Overall, respondents seemed to be doing quite well at making ends meet. The picture with regard to keeping track is less positive with many respondents performing poorly. However, those who performed poorly on keeping track generally did well on making ends meet suggesting that keeping a close

track on finances is not a prerequisite for making ends meet.

The findings in the planning ahead domain give cause for concern. A quarter of respondents or their partner, where relevant, had experienced a large and unexpected drop in income in the previous three years while 16 per cent had experienced a major unanticipated expense in the same timeframe. These statistics indicate that unexpected negative financial events afflict a sizeable proportion of the population. Despite this, 59 per cent had no provision for dealing with a drop in income of three months or more duration while 40 per cent would have to borrow to deal with an unanticipated expense equivalent to one month's income. Two-thirds of respondents anticipated a major expense in the future but 60 per cent of this group had not made any provision to meet their anticipated expense. The extent of pension coverage was also poor. Only 32 per cent of respondents who had not yet retired had an occupational or personal pension that they were paying into at the time of the survey. Of those who had already retired, 53 per cent had no personal pension.

The results from the choosing products section show that people frequently did not seek independent advice and often displayed 'inertia', i.e., frequently renewing existing policies and products without shopping around or considering alternatives which may provide better value for money, better product features or be more suited to the individual's needs. Furthermore, many people relied on or prioritised the (nonprofessional) advice of family and friends when making important decisions regarding financial products. While only a small fraction made their decision about their recent financial product purchase on the basis of no advice whatsoever (14 per cent), the vast majority of the advice followed referred to generic information or product information given to them by the outlet providing the product. There are signs that a minority of people bought products unwisely. All analyses conducted for this section reveal that the most significant factor in explaining the performance in this domain was a person's level of engagement with buying financial services.

People have clearly learnt from experience and make more competent decisions as their financial portfolio is extended.

The staying informed domain shows that respondents were generally well-disposed to keeping up to date with financial matters with just over 62 per cent of respondents answering that it was quite or very important. The mainstream media were clear leaders as sources of financial information with the most popular source for all respondents identified as newspapers (excluding financial pages) followed by TV or radio programmes (excluding specialist personal finance programmes).

In terms of the overall performance in all the domains, just over half the population had no weak areas of financial capability while around one fifth had two weak areas. Another, 16 per cent had four weak areas while just over one-tenth performed weakly in all the domains. That half the sample had no weak areas is reassuring from a policy point of view but the substantial proportion who performed weakly in all areas gives cause for concern. Considering the characteristics of those who performed well and those who performed poorly, the better performers were more likely to be in couples, at work, well-off financially, well-educated and owner occupiers. The poor performers were more likely to be single, badly-off financially, renters, and poorly educated, often unemployed and with low usage of current accounts. This profiling of these groups with low levels of financial capability will allow for the development of strategies of education and awareness targeted at these groups at a later stage.

Paper 2/RT/09: Adjusting for Quality of Labour and Labour Services in Productivity Measurement, *Mary Keeney*

Evaluating the true level of factor inputs (such as labour and capital) is an essential component of estimating an economy's productive potential. The standard measure of the total economy's labour input is to aggregate the number of people employed. A related measure of labour inputs is to aggregate the number of hours worked by

each person in the economy. Both of these labour measures assume that all workers in the economy are equally productive. This paper is concerned with achieving a more accurate measure of the total labour input in the economy by adjusting standard labour indicators for labour quality.

Changes in the structure of the labour force can change the aggregate skill (quality) levels of the labour aggregate for an economy. For example, the expansion of the multinational sector in Ireland over time had substantial positive effects in enhancing skill levels and skill acquisition among the domestic labour force. However, accounting for the skill levels of the workforce is a complex task as it entails quantifying the characteristics of workers that are not directly observable. Education proxies are most often used to capture skill levels. Information on wage differentials, assumed to reflect productivity differences between individuals, are also used in this paper as a way of representing different skill levels of defined worker groups.

Data from the 2004/5 Household Budget Survey and also regular Quarterly National Household Surveys are used to construct a quality-adjusted labour input series over the period 1999 to 2007. The time period is restricted due to QNHS data availability. Our benchmark series classifies worker groups by gender, six age groups and four levels of educational achievement.

We find that the quality of the Irish workforce increased since 1999 but the rate of growth in labour quality was not as fast as standard measures of labour productivity would have predicted. Adjusting for labour quality thus has a restraining effect on the growth contribution from aggregate labour inputs over the period from 1999 to 2007. This result can be attributed both to the changes in the composition of, and the educational distribution, of the labour force. The Irish workforce has become younger and enjoyed a higher level of female participation. There was not a substantial increase in the proportion of those with third level qualifications over the period. Adjusting labour input for quality changes has some interesting economic

implications. It does not have major implications for the measurement of Irish growth over the period but it does help us to identify more accurately the sources of the aggregate growth and productivity rates in particular. The final section of the paper explores these issues.

Paper 3/RT/09: Regional Tax Differences and Multinational Profits in Europe, *Alan Murphy*

This paper tests to what extent are corporate tax differentials motivating the reallocation of reported profits between EU parent multinationals and their European based affiliates. Hines and Rice (1994) report that a 1-percentage point reduction in corporation tax induces a 3% rise in reported profitability of European based affiliates of US parent multinationals.

One issue highlighted by previous research is that a single measure of the tax rate cannot capture industry and firm specific tax deductions and other features of the tax system. In this paper we address this issue by using data containing information on the total bundle of corporate tax actually paid by each firm. This is important because we shown the actual tax rates paid by affiliates can vary widely across firms even within a unified tax regime. The second innovation is that, we use matched parentaffiliate data to control for the pair-wise trading environment. Allotting each trading pair its own pair-wise variable overcomes some information problems, one of which is that we do not know which variables are responsible for the heterogeneity bias in effective tax rates.

When we do not use the firm-level reported tax liabilities and directly control for the parent-affiliate pair-wise trading environments, we obtain a semi-elasticity of -2.4 that is similar to previous research. But when we apply the individual tax information and match each parent-affiliate pair we obtain a semi-elasticity of -0.25 . This suggests that while corporation tax differences do affect reported profitability, the magnitude of this effect is lower than previously reported in studies using information

from U.S. owned multinationals operating in Europe.

This finding is somewhat unanticipated, given the use of the actual reported tax liability faced by individual firms. One potential explanation is that relative to US owned multinationals operating in Europe, there is significantly less transfer pricing activity among European parent multinationals and their European based affiliates. This may be related to the type of FDI strategies used by European multinationals. On the one hand the investment may be horizontal in nature, where the multinational is seeking market access or hoping to gain first mover advantage over its rivals. Alternatively, the investment may be of the vertical, whereby the firm seeks cost savings up and down the vertical chain of production. Investments between advanced economies are generally market seeking (horizontal) in nature and thus cost considerations (including taxes) are a lower priority. Evidence shows that approximately 75 percent of the FDI activity in Europe is accounted for by investments between the advanced European countries, which trade in similar goods.

In addition, European multinationals may have sunk cost issues in existing affiliate facilities. This might further diminish their ability to quickly alter the location of production in order to justify higher reported profits, especially when they face incremental corporation tax changes. Alternatively it might be that Hines and Rice (1994) get an aggregate effect, but on the wrong aggregated tax measure. This is supported by the fact that by aggregating our tax data we can approximate their results. Another potential difficulty with this type of model is that lowering tax rates can raise returns to capital in an economy or can be associated with higher profitability of firms for reasons that are unrelated to active profit management.

Paper 4/RT/09: Consumer Financial Capability: A Comparison of the UK and Ireland,
Nuala O'Donnell

Financial capability refers to the study of a person's knowledge of financial products, their understanding of their own financial position

and their ability to choose products appropriate to that position along with their ability to plan ahead financially and to seek and act on appropriate advice when necessary. It has been argued that the related issue of financial literacy is a narrower concept, more focused on knowledge and skills and lacking the important behavioural element of financial capability (Dixon, 2006).

Financial capability and financial literacy are becoming increasingly important in a world of changing financial markets and products, increased life expectancy and changing pension arrangements (see e.g. OECD 2005, Orton, 2007). Given the proliferation of new financial products, unavailable in previous generations, ordinary people are required to navigate their way through an array of complex financial instruments in order to undertake once relatively straightforward but now increasingly complex transactions such as saving for retirement or buying a house. The scope for the general public to make costly mistakes in assessing and choosing fairly standard financial services, such as pensions or mortgages, has increased considerably.

Financial capability and financial literacy are important not just to the consumer — consumer knowledge of financial products and adequate financial planning is clearly of increasing concern to policymakers and regulatory bodies. Several countries have sought to investigate the degree of financial literacy among the general population. A major study of financial capability was undertaken in the UK by the FSA (Atkinson *et al*, 2006).

The first substantial evidence on financial capability in Ireland using a survey dataset designed for the specific purpose of measuring financial capability in Ireland was recently described in O'Donnell and Keeney (2009). Just over 1,500 households were surveyed in late 2007 and early 2008. Each household was asked up to 350 questions (depending on the diversity of their financial interests). The Irish survey closely followed the FSA UK survey and this makes it possible to compare and contrast responses and results across the two countries, which is the topic of this paper.

Results are compared and contrasted across seven questions or indicators, exploring similarities and differences in consumer financial behaviour across the two countries.

The measures considered were as follows: (1) degree of difficulty in keeping up with bills and credit commitments, (2) knowledge of balance in account used for day to day money management, (3) whether respondents had experienced a large and unexpected drop in income in the previous three years, ownership of (4) pensions, (5) current accounts, (6) savings accounts, (7) how important respondents considered it was to keep up with the economy and the financial services sector generally.

For several of the questions considered, the Irish and UK results are strikingly similar.

This is the case for “keeping up with bills and credit commitments”, “knowledge of balances in account used for day-to-day spending” and “whether respondents had experienced a large and unexpected drop in income.” Respondents in both countries were doing well at keeping up with bills and credit commitments. A review of responses to the second indicator, keeping track of balances, shows that those who performed less well at keeping up with bills and credit commitments, e.g., lone parents, in many cases had a high level of knowledge of their balances. This suggests that those who had difficulties in making ends meet were driven to be more aware of their financial situation than those who had no difficulties in dealing with bills and commitments, such as the highly-educated and those in the higher income quintiles.

Overall, a quite high proportion of respondents in both countries at around one quarter in Ireland and 28% in the UK had experienced a large and unexpected drop in income in the previous three years. The similarity of responses on these issues may reflect the fact that both countries had been experiencing broadly similar macroeconomic conditions at the time the surveys were undertaken. This raises the issue that were the surveys to be repeated in the current much more difficult

economic climate, the responses to the above questions would be very different to those described above. In particular, it is likely that much greater numbers would have experienced a drop in income due to unemployment and would be experiencing difficulty in keeping up with bills and commitments.

Differences were apparent between Ireland and the UK when it came to the issues of pension coverage, in particular, but also holdings of current accounts and savings. Given the variations between the pension schemes in the two countries, it is, perhaps, not surprising that differences arise. Bearing in mind the similarities in the retail banking environment between Ireland and the UK, it is surprising that differences arise in the rates of current account and savings account holdings. As current account and savings account holdings are important elements of financial exclusion, it would be of interest to broaden this descriptive analysis into a more comprehensive comparison of financial exclusion between the two countries.

Considering the higher rates of pension, current account and savings account holdings in the UK than in Ireland, it should probably be no surprise that UK respondents were more inclined to feel that keeping up with financial matters generally, such as the economy and the financial services sector was very or quite important at 70% in the UK compared with 60% in Ireland. The Irish rate was particularly low for the youngest age-group and students, suggesting a degree of detachment of the younger population from the economy and financial matters, at the time the survey was undertaken.

Paper 5/RT/09: Tax Complexity and Inward Investment, **Martina Lawless**

The influence of taxes on foreign direct investment may be more complicated than a simple comparison of rates across countries. This paper adds a further dimension to the effect of taxes on bilateral FDI flows by including measures of the complexity of the tax code. Highly complex tax systems impose

costs on firms that have to understand and comply with all of the various requirements. For multinational firms that are making a decision about where to locate, the costs associated with a complicated tax code might offset to some extent attractions of a lower tax rate. This paper examines how measures of tax complexity affect the existence and level of bilateral FDI relationships for 16 OECD FDI-source countries and 57 host countries.

We use data from the World Bank's Doing Business survey to examine the effect on FDI flows of the time and transactions burdens associated with paying taxes. These data provide two measures that proxy for the complexity of complying with tax regulations across countries. The first is a measure of the amount of time it takes a representative firm to process their taxes. The second is the number of payments the firm has to make. The time required to comply with tax rules varies from 12 hours in the United Arab Emirates to 2600 hours in Brazil, while the number of payments involved ranges from 3 in Norway to 98 in Ukraine.

A large number of the potential source-host country pairs do not have any FDI flows between them. In examining the determinants of FDI flows, it is therefore important to control for the number of zeros in the data. For this reason, we use a Heckman selection model of FDI participation and flows, following the approach of the papers by Razin and co-authors (2004, 2005, 2007 and 2008).

The number of payments and time to comply with tax obligations variables are found to have significant negative effects on whether FDI flows are present, although they do not significantly impact the level once the FDI relationship has been established. This result holds even when a range of country specific controls are added, including other indicators of the level of bureaucracy. In terms of its economic significance, we estimate that a 10% reduction in tax complexity is approximately comparable to a one percentage point reduction in the effective corporate tax rate. Either of these changes would raise total FDI inflows by approximately 6%.

Paper 6/RT/09: A Model of Mortgage Credit, Diarmaid Addison Smyth, Kieran McQuinn and Gerard O'Reilly

In light of the recent financial turmoil, the interrelationship between house prices and mortgage lending is likely to be the subject of considerable attention. The proliferation of house price booms across OECD countries over the past 10 years coincided with a period of considerable innovation within the international financial sector. A growing body of opinion is of the view that the increases in house prices in some of these countries was partly fuelled by the significant increases in credit provision enabled by innovation in these countries' financial sectors. One such property market commonly identified is that of the United Kingdom.

In this paper, we propose an intuitive model for residential mortgage credit and apply it to the UK property market. We initially focus on the demand-side of the mortgage lending market, and estimate what the equilibrium or long-run level of mortgage lending should be, based on disposable incomes, interest rates and typical bank lending practices. This amount, is referred to as the *fundamental* mortgage level, which we then compare with the *actual* lending level. We refer to periods where actual lending is above fundamental lending as periods of excess credit, and where it is below, as periods of credit rationing. We then extend the analysis through modelling house prices as a function of mortgage levels so as to quantify the impact on prices in periods where we perceive there to have been either excess credit or credit rationing.

Our results suggest that there was a significant divergence between actual and fundamental mortgage lending in the UK in the post-2003 period. Specifically, we estimate that between 2004 and 2008, excessive lending in itself, resulted in house prices increasing by 11 per cent per annum on average, while towards the end of the period, this figure amounted to nearly 20 per cent. This latter period corresponds to the provisions of additional funding on the part of UK credit institutions through access to interbank markets, which we define as the "funding gap", that is, the difference between domestic credit institutions

deposits and loans to the private sector. We expand our modelling framework to incorporate this additional source of funding. This variable appears to have been an increasingly important determinant of average mortgage levels in the UK in the period post-2000. We highlight its importance through a series of counterfactual exercises.

Paper 7/RT/09: A Critical Assessment of Existing Estimates of Core Inflation,
Colin Bermingham

Core inflation is an important economic concept. It provides an indication of the underlying trend in prices. This is in contrast to the actual inflation rate, which is inadequate for this purpose, as it is designed to measure changes in the cost of living. As such, the core rate is of particular importance in a policy context as policymakers need a clear understanding of the true trend in prices in order to set interest rates appropriately. However, the core inflation rate is not an actual economic series and instead must be estimated using statistical measures. The practical usefulness of core inflation depends critically on the accuracy of the estimation method used to construct the core rate.

Using U.S. data, this paper proposes the most rigorous examination of core inflation estimates to date. The two standard tests of the usefulness of core inflation are its ability to track trend inflation and its ability to forecast actual inflation. In this paper, improvements are made to way these tests are implemented. Other papers in the literature frequently omit a benchmark model from the comparison tests and instead only rank candidate core inflation rates. This is despite the convention in other branches of economics of including a benchmark model. In this paper, benchmark models are included in both the forecasting test and the trend tracking test. Alternative tests not normally considered in the core inflation literature are also included in the paper. In addition, the comparison exercise is the most exhaustive to date in terms of the range of core inflation estimators included. Most papers focus on a specific type of core

inflation estimator whereas a number of core inflation estimators are included in this paper.

Two problems with the core inflation rates emerge. Firstly, it is very difficult to distinguish between different core rates according to these tests, as they tend to perform to a very similar level. Secondly, once the benchmarks are introduced to the tests, the core inflation rates fail to outperform the benchmarks. This means that U.S. core inflation rates are not particularly helpful policy tools when utilised in the manner suggested by the literature. This suggests that alternative estimators of core inflation may be needed or that existing core rates should be utilised differently. The paper considers some alternative uses for core rates but the various estimators still perform relatively poorly according to these alternative criteria. However, the existing core rates might still be helpful in a forecasting context using different forecasting models and methods to the conventional approach.

Paper 8/RT/09: Macroeconomic Forecasting and Structural Change,
Antonello D'Agostino, Luca Gambetti and Domenico Giannone

The aim of this paper is to assess whether explicitly modeling structural change increases the accuracy of macroeconomic forecasts. We produce real time out-of-sample forecasts for inflation, the unemployment rate and the interest rate using a Time-Varying Coefficients VAR with Stochastic Volatility (TV-VAR) for the US. The model generates accurate predictions for the three variables. In particular for inflation the TVVAR outperforms, in terms of mean square forecast error, all the competing models: fixed coefficients VARs, Time-Varying ARs and the naïve random walk model. These results are also shown to hold over the most recent period in which it has been hard to forecast inflation.

Paper 9/RT/09: Macroeconomic Forecasting and Structural Change,
Diarmaid Addison Smyth, Kieran McQuinn and Gerard O'Reilly

The interrelationship between house prices and mortgage lending, evident across many OECD

countries, was particularly pronounced in the case of the Irish property boom. While house price increases in Ireland, over the period 1995 to 2007, were significantly determined by the performance of key fundamental variables within the economy, a growing body of opinion is now of the view that some of the price increases were partly fuelled by the significant increases in credit provision enabled by innovation in the Irish financial sector.

In this paper, we apply a recent model of residential mortgage credit to the Irish property market. We initially focus on the demand-side of the mortgage lending market, and estimate what the equilibrium or long-run level of mortgage lending should be, based on disposable incomes, interest rates and typical bank lending practices. This amount, is referred to as the *fundamental* mortgage level, which we then compare with the *actual* lending level. We refer to periods where actual lending is above fundamental lending as periods of excess credit, and where it is below, as periods of credit rationing. We then extend the analysis through modelling house prices as a function of mortgage levels so as to quantify the impact on prices in periods where we perceive there to have been either excess credit or credit rationing.

Our results suggest that there was a significant divergence between actual and fundamental mortgage lending in Ireland in the post-2004 period. This latter period corresponds to the provision of additional funding on the part of Irish credit institutions through access to interbank markets, which we define as the “funding gap”, that is, the difference between domestic credit institutions deposits and loans to the private sector. Additional mortgage lending was also facilitated during this period through the increased securitisation of Irish mortgages. We expand our modelling framework to incorporate both these additional sources of funding. These variables appear to have been an increasingly important determinant of average mortgage levels in Ireland in the period post-2000. We highlight their importance through a series of counterfactual exercises.

Paper 10/RT/09: Quantifying Revenue Windfalls from the Irish Housing Market, Diarmaid Addison Smyth and Kieran McQuinn

The recent deterioration in the fiscal performance of the Irish economy is all the more notable, given the apparent robustness of the Government finances since the mid 1990's. A low debt and robust surpluses according to the standard EU fiscal assessment criteria meant that the Irish budgetary position was the envy of many in Europe. Initially, the fiscal performance was helped by robust export led growth in the period to 2002, followed by tax intensive domestic demand. In 2006, Ireland recorded a General Government Surplus of 3 per cent of GDP, which at the time was the second largest surplus in the Euro area. Furthermore, the debt to GDP ratio in Ireland at 25 per cent of GDP, was the second lowest in the Euro area. This apparently robust fiscal position was reflected in a lower yield on Irish sovereign bonds relative to the traditional safe haven German bund as well as by ‘AAA’ credit ratings.

Much of the deterioration in the Irish fiscal position has been caused by a sharp macroeconomic slowdown, which has been amplified by a financial and global economic crisis. At the same time, the unwinding of structural imbalances within the economy primarily as a result of an overheated property market has also been a major contributory factor. Tax receipts associated with property construction soared over the period 2002-2007, however the level of housing construction underpinning this was clearly unsustainable as has been evidenced by the dramatic fall off in activity levels since. To put Ireland's supply of residential housing in perspective, on average between 2002 and 2007 over 75,000 house were built in the country per annum, in the United Kingdom for the same period, just over two and half times that amount was built despite the UK's population being 14 times that of Ireland's.

In this paper, we seek to quantify the impact of this obvious dis-equilibrium in the housing market on exchequer tax receipts. In particular, we focus on two large components of taxation

receipts, which are directly affected by housing market activity — stamp duty and value added tax (VAT) receipts. The windfalls associated with these taxes cannot be easily captured by standard cyclical adjustment measures and are difficult to model due to their volatility and the absence of appropriate tax bases. Instead we relate receipts of both tax items to standard activity measures of the housing market — price levels and housing supply. Then drawing on previous work done on the housing market, we are able to estimate tax receipts for both categories, which are equivalent to what *fundamental* levels of activity in the housing market were over the period 2002-2009. By *fundamental*, we mean the level which is compatible with the level of economic variables such as income and interest rates. We then contrast the receipts associated with fundamental activity with actual receipts to quantify what the windfall amounts are.

Paper 11/RT/09: Downward Nominal and Real Wage Rigidity: Survey Evidence from European Firms,

Jan Babecky, Philip Du Caju, Theodora Kosma, Martina Lawless, Julian Messina and Tairi Room

Based on a unique firm-level survey carried out between late 2007 and early 2008 within the framework of the Wage Dynamics Network, we analyse the flexibility of wages across 14 countries of the European Union (EU). Our objective is to examine the extent and determinants of downward nominal and real wage rigidity.

Downward nominal wage rigidity (DNWR) is defined on the basis of the frequency of nominal wage freezes. Firms freezing nominal base wages at any point during the five-year period prior to the survey are considered to be subject to nominal wage rigidity. Downward real wage rigidity (DRWR) is defined on the basis of wage indexation. Firms that have an automatic link between nominal base wages and past or expected inflation are regarded as subject to downward real wage rigidity. Our survey-based measures of downward nominal and real wage rigidity are closely related to the alternative measures derived by earlier studies on the basis of the wage change distributions.

We find that the incidence of both types of wage rigidity is quite substantial in Europe — approximately 10% of firms experienced wage freezes and 17% of firms applied wage indexation mechanisms. Thus, indexation (DRWR) is much more prevalent in EU countries than wage freezes (DNWR). This is consistent with other evidence on wage rigidity in most continental European countries, as opposed to the US and the UK. Overall, we find that the non-euro area member states of the EU are more likely to experience wage freezes compared to the euro area member states, whereas indexation mechanisms are more widely used in the euro area countries included in our sample.

Next, we analyse how DNWR and DRWR are related to a number of firm-level and institutional characteristics of labour markets in the countries covered by our sample. We employ the multinomial logit estimation method, which makes it possible to assess these relationships simultaneously for both types of rigidities. Our estimations indicate that country-specific factors appear to be significant determinants of downward wage rigidities and that institutional differences between countries are an important factor behind this finding. For example, high collective bargaining coverage is positively related with real wage rigidity, while the estimated relationship with nominal wage rigidity is insignificant. A possible interpretation of this finding is that unions have the capacity to provide their members with information about inflation expectations and explain the importance of maintaining the real income level to workers. Thus, union coverage reduces the prevalence of money illusion.

Analysis of the union contracts negotiated at different levels (firm-level versus higher-level bargaining contracts) implies that firm-level contracts are a more likely source of real wage rigidity in centralised wage-setting environments. However, there is a substantial degree of heterogeneity across countries regarding the impact of different types of union contracts. Another institutional aspect that influences wage rigidity is the difficulty for employers in laying off workers. We find that nominal wage rigidity is positively associated

with the extent of permanent contracts. In addition, permanent contracts have a stronger effect on wage rigidity in countries with stricter labour regulations.

Workforce composition also appears to play a significant role in the determination of wage rigidities. Both types of rigidity are positively correlated with the share of high-skilled white collars; downward nominal wage rigidity is positively related with employees' tenure in the firms under study. Both of these significant relationships are consistent with the implications of related theoretical models. In addition, we find that firms employing labour-intensive technologies are more likely to have rigid wages.

Finally, there seems to be a positive relationship between product market competition and downward nominal wage rigidity, although the results are dependent on the way competition is measured. A possible cause of this empirical result is that in highly competitive industries rents should be low, and therefore so should wages. This leaves smaller margins to reduce wages, because firms paying low wages that are closer to a collectively agreed or legislative minimum level have less flexibility than firms having a so-called wage cushion between the minimum and the actual wage bill.

Paper 12/RT/09: The Margins of Labour Cost Adjustment: Survey Evidence from European Firms,

Jan Babecky, Philip Du Caju, Theodora Kosma, Martina Lawless, Julian Messina and Tairi Room

Apart from a decrease in base wages, firms could use other ways of reducing labour costs when faced by negative external shocks, for example by cutting bonuses and benefits, encouraging earlier retirement and hiring workers at lower wages than those who have recently quit. The adjustment of non-wage labour costs has gained attention in the policy debate due to two main reasons. First, non-wage labour costs represent a substantial part of total compensation. Since firms are primarily concerned with total compensation per employee, an assessment of the flexibility of

non-wage labour costs is as important as evaluation of the degree of wage flexibility. Second, in an environment of sticky prices and nominal wages, non-wage labour costs become an important adjustment tool to external shocks, allowing dampening of the effects of negative demand shocks on the firm's employment.

Using a unique survey of firms from 12 countries of the European Union conducted between the second half of 2007 and the first quarter of 2008 within the framework of the Wage Dynamics Network coordinated by the European Central Bank, we examine the importance and determinants of alternative strategies firms might use to adjust their labour costs. In our survey, we asked firms' managers directly about their use of these policies in the recent past. In this paper we analyse factual responses about the types of margins firms have used in the last five years preceding the survey. Specifically, we are able to identify the incidence of the following six labour-cost saving strategies: reduce or eliminate bonus payments; reduce nonpay benefits; change shift assignments or shift premia; slow or freeze the rate at which promotions are filled; recruit new employees at lower wage level than those who left voluntarily; and encourage early retirement to replace high wage employees by entrants with lower wages.

Our contribution to the literature is threefold. First, we document comparable information on labour cost adjustment practices beyond base wages for a large set of EU countries and sectors. This allows us to discuss the relative importance of each individual strategy across countries characterised by different sets of laws and institutions governing their labour markets. Our survey shows that firms fairly commonly use strategies to reduce labour costs other than reducing base wages — 63% of the firms' managers said they had used at least one other margin of adjustment in the recent past, and 58% had used at least one of the six margins explicitly identified in the survey. We find substantial heterogeneity in the use of these strategies across countries and firms, depending on firm characteristics and labour market institutions.

Second, we examine characteristics of firms and the environments in which they operate that determine the relative importance of each type of labour cost adjustment mechanism. The use of each margin is related to several firm characteristics such as the relative size or skills distribution as well as several indicators of the economic environment in which they operate. In particular, larger firms show greater margin of manoeuvre with respect to using any of these strategies in order to adjust labour costs. Different indicators of the severity of competition suggest that firms in more competitive environments are more likely to use some of these strategies more heavily. Furthermore, we find that the presence of unions in wage setting is associated with a greater use of most of the strategies. A plausible explanation is that unions limit the flexibility of wages, pushing firms towards alternative labour cost cutting strategies.

Finally, we show how the use of these adjustment practices can be related to firms' experience regarding nominal wage rigidity, as well as to the extent of wage indexation operating in the firms. When we control for different indicators of wage rigidity (either nominal wage rigidity or alternative definitions of wage indexation) the impact of unionisation on the use of alternative margins remains. Moreover, we find that firms subject to nominal wage rigidities are much more likely to use each of the six cost-cutting strategies.

This indicates that there is some degree of substitutability between wage flexibility and the flexibility of other labour cost components, and that this substitutability is not limited by the presence of unions in wage setting.

Paper 13/RT/09: The United States as a growth leader for the Euro Area — A multi-sectoral approach,
Kieran McQuinn and Geraldine Slevin

The relationship between Europe and the United States has become an area of increasing interest. In particular many studies have focused on labour market and business cycle developments. This paper differs in that we explicitly examine the long-run relationship between both areas by examining the

possibility of technology spillovers. In particular, we assess whether there is a relationship between the rate of total factor productivity (TFP) growth in different industry sub-sector categories in the US and their counterparts in Europe.

In our modelling framework we assume that the United States acts a growth leader for the Euro area. This methodology implies that the greater the difference in levels between TFP in the United States and Europe, the greater the growth rate of European TFP. Given the possibility of heterogeneity across the different sectors of the economy we estimate a fixed effects regression model which yields plausible and significant results. We modify our model to address the role played by ICT in increasing European TFP growth both directly and indirectly.

Our results indicate that ICT has a positive impact on productivity growth in Europe. We also find that increased use of ICT increases the convergence of EU TFP levels to US TFP levels. The data suggests that over the sample a change took place in the respective performances of both economies, therefore we examine and detect for the possibility of structural breaks. We conduct a series of recursive estimation in order to analyse how the rate of convergence between the Euro area and the United States has changed over time as a result.

Paper 14/RT/09: Destinations of Irish Exports: A Gravity Model Approach,
Martina Lawless

The gravity model relating trade flows to GDP and proxies for trade costs is one of the most empirically successful in international economics. Understanding the patterns of exports and the influence of trade costs on export sales are of particular relevance to economists and policymakers in such a small open economy as Ireland. This paper uses the gravity methodology to analyse the patterns of Irish exports, both at the aggregate level and, more innovatively, at the firm and sector level.

The gravity approach to modelling trade has a long history, being first used in the 1960s. The

fundamental components of the gravity model are the variables GDP, which captures demand in the destination market, and distance, which provides a broad proxy for the transportation and other costs involved in exporting to each destination country. In addition to the basic elements of GDP and distance, the literature on gravity models has identified a large number of proxies for trade costs in addition to distance. This paper adds a range of additional variables such as common language, influences of internal geography, and infrastructure. Furthermore, new data from the World Bank on the costs associated with importing procedures is included and shown to have a significant impact on trade relationships.

The data on aggregate exports covers exports from Ireland to 137 destination countries from 1980 to 2007. This was a period in which exports grew dramatically, particularly during the 1990s Celtic Tiger period, and when the geographic patterns of Irish trade also underwent a transformation. In common with the stylised facts of the gravity regression, distance is found to have a strong negative effect on exports. On the other hand, exports are positively related to sharing a common language and when communications infrastructure is well developed. The gravity model is shown to fit the data extremely well. Almost all of the previous research on the gravity relationship in international trade has focused on aggregated data, which sum up bilateral exports over sectors or whole economies.

One reason for this limited focus is that, until recently, researchers have not had access to firm-level data reporting both the quantity and the destination of each firm's exports. This paper expands on the traditional gravity approach by using a unique survey of Irish firms over a five-year period, which contains detailed information on exports to over fifty markets.

This firm level data is used to decompose the gravity model into an extensive (number of firms) and intensive (average export sales per firm) margin.

Most of the trade cost variables affect exports largely through their influence on the extensive margin. Distance has a negative effect on both margins, but the magnitude of the coefficient is considerably larger for the extensive margin. All of the variables capturing language, internal geography, and import cost barriers have significant and appropriately signed effects on the extensive margin. However, almost none of these variables are found to have a statistically significant relationship with the intensive margin.

The final section of the paper divides the firm-level data into four broad sectors to examine if there is any sectoral variation in the standard results. Distance is found to have a particularly strong effect on traditional manufacturing compared to more high technology sectors. The finding that the distance effect works primarily through the extensive margin holds across all sectors. The coefficient for English is highest in the traded services sector, where one would imagine communications to be especially relevant.

Paper 15/RT/09: Euro Area Investment: the Generation of GDP Growth and the Marginal Product of Capital,
Mary Ryan

Reviewing economic performance over the past three decades, it is apparent that GDP growth in the US has been faring better than that in the Euro Area, with year-on-year growth rates regularly exceeding those of the Euro Area. Gaps in investment growth rates mirror those of GDP. Clearly, from national accounting identities, strong investment boosts national income in arithmetic terms, but it is its role in maintaining and augmenting the stock of productive capital as a means of generating GDP which is examined here.

This paper seeks to examine three related issues. First, the role of capital stocks in generating GDP growth is quantified. It is noted that capital is a significant driver of GDP growth in both the Euro Area and the US: this necessarily throws the spotlight on investment as a means of accumulating that capital stock. It is also striking that there is considerable variation across the Euro Area Member States

in terms of the contributions of capital and investment to growth in GDP, which leads to a second issue, namely the degree of uniformity in investment patterns across the Euro Area. We look behind the Euro Area growth rates, identifying the relative contributions of each of the Member States to the total. It is noted that there is a considerable degree of diversity prevailing in individual country investment growth rates. In particular where Euro Area growth rates are a little disappointing relative to the US, this is not necessarily the case for all Member States. There is more common ground in periods of cutting back, with intervals of negative rates applying across a broad range of countries, however there are of course many exceptions to this and in addition the scale of country reactions varies significantly.

The disparity across the Euro Area countries in terms of investment growth leads to the final issue under consideration: the role of Marginal Product of Capital (MPK) is considered as a possible source of these variations. The MPK reflects the “payoff” of investing in further capital stocks in terms of increased output and so relatively high MPK values represent a greater incentive to invest. In the absence of frictions, available investment funds will be drawn to higher MPK opportunities. This paper provides estimates of MPK for Euro Area Member States and assesses whether differences in these MPKs go some way toward explaining the variations in investment growth.

Paper 16/RT/09: Money and Uncertainty in Democratised Financial Markets, Frank Browne and Robert Kelly

Until comparatively recently the demand for money was dominated by its usefulness as a transactions medium. The slow revolution in financial markets over the last few decades,

especially the growing participation of so-called retail investors in these markets (i.e., a phenomenon we describe broadly as the democratisation of financial markets) has brought money’s role as a store of value to the fore. In periods of financial market turbulence, this role may now dominate the medium of exchange role. Money seen as an asset is increasingly coming to the rescue of investors stricken with fear as financial market prices begin to collapse. The uncertainty generated by a collapse, or even a prospective collapse, in asset prices generates a large demand for money as people have recourse to the only asset whose value is capital certain or close to capital certain. The new post-liberalisation, post-democratisation, patterns of behaviour that have begun to emerge are characterised by rapid growth in the money stock during periods of uncertainty.

A positive correlation between uncertainty and the income velocity of circulation which is observed in the pre-democratisation part of our sample for the US economy (1970 to 1989) is replaced by a strong negative correlation for the post democratisation period (1990 to 2009). An examination of this remarkable reversal of behaviour of the income velocity of money is the objective of this paper.

The policy consequences of this reversal are profound. The money stock is now growing rapidly in periods of heightened uncertainty (where in the pre-democratisation era it would have decelerated). This strong demand does not persist however. Money demand falls again as uncertainty dissipates leaving a large residue of excess money supply (i.e. a monetary overhang) which finds its way back into financial markets via an intense search for yield, re-igniting another asset price boom and bust, endangering the health of the banking system and compromising financial stability.

List of Reporting Institutions	4
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Section A: Main Monetary Indicators **7**

A2.1	Domestic Credit to Irish Residents	9
A2.2	Private-Sector Credit to Irish Residents	10
A3	Irish Contribution to Euro Area Money Supply:	11
1.	Components	11
2.	Selected Measures of Irish Contribution	11

Section B: Interest Rates and Balance of Payments **13**

B1	Official and Selected Interest Rates	15
B2.1	Retail Interest Rates and Volumes for Outstanding Amounts	16
B2.2	Retail Interest Rates and Volumes for New Business	17
B4.1	Harmonised Competitiveness Indicators for Ireland (HCIs)	18
B4.2	Harmonised Competitiveness Indicators for Ireland (HCIs)	19
B5	Indices of Relevant Wage Costs in Manufacturing Industry (formerly E2)	20

Section C: Banking and Other Financial Institutions **21**

C2	Financial Statement of the Central Bank & Financial Services Authority of Ireland	22
C3	Credit Institutions: Aggregate Balance Sheet	24
C4	Credit Institutions: Retail Clearing: Aggregate Balance Sheet	27
C5	Credit Institutions: Non-Clearing with Predominantly Domestic Business: Aggregate Balance Sheet	30
C6	Credit Institutions: Non-Clearing with Predominantly Foreign Business: Aggregate Balance Sheet	33
C7	Credit Institutions: Mortgage Lenders: Aggregate Balance Sheet	36
C8	All Credit Institutions: Sectoral Distribution of Advances	40
C9	All Credit Institutions: Sectoral Distribution of Advances and Deposits	42
C10	All Credit Institutions: International Business: Analysis by Currency, Sector and Maturity	44
C11	All Credit Institutions: International Business: Analysis by Geographic Area	46
C13	Analysis of Residential Mortgages vis-à-vis Irish Residents	48
C14	Credit Card Statistics	50

Section D: Public Finances 53

D1	Government Debt and Government-Guaranteed Debt	55
D2	Government Stock — Nominal Holdings	56

Explanatory Notes 57

Notice

Publication of Tables A1, A4, B3, B5, B6, B7, C1, C12, D3–D8 and E1–E6 has been discontinued. These data are available from alternative sources, and readers are directed to these sources, which have been noted in previous bulletins. The CBFSAI Quarterly Bulletin and Monthly Statistics are also provided in electronic format on the website: www.centralbank.ie and the ECB Monthly Bulletin is available on the website: www.ecb.int.

The layout and design of many tables in Sections A, B and C were changed significantly at the start of EMU in January 1999 and users should exercise caution when comparing these series with earlier data as the underlying definitions may have changed. Detailed definitions of the concepts in each table can be found in the Explanatory Notes on pages 57 to 61.

Reporting Institutions

The following is a list of institutions currently submitting returns included under the headings in the Statistical Appendix.

Credit Institutions: Retail Clearing

AlB Mortgage Bank
Allied Irish Banks plc
Bank of Ireland Mortgage Bank
The Governor and Company of the Bank of Ireland
Danske Bank A/S
Ulster Bank Ireland Limited

Credit Institutions: Non-Clearing with Predominantly Domestic Business

ACC Bank plc
Anglo Irish Bank Corporation Limited
Anglo Irish Mortgage Bank
Bank of America National Association
Bank of Scotland (Ireland) Limited
BNP Paribas SA
Citibank International plc
DePfa Bank plc
EBS Building Society
EBS Mortgage Finance
FCE Bank plc
First Active plc
HFC Bank Limited
ICS Building Society
Investec Bank plc
Irish Life & Permanent plc
Irish Nationwide Building Society
KBC Bank Ireland plc
Marks & Spencer Financial Services plc
MBNA Europe Bank Limited
Nationwide Building Society
Northern Rock plc
Postbank Ireland Limited
The Royal Bank of Scotland N.V.

Credit Institutions: Non-Clearing with Predominantly Foreign Business

Aareal Bank AG
Bankinter S.A.
Bank of Montreal Ireland plc
Barclays Bank Ireland plc
Barclays Bank plc
BNP Paribas Securities Services SA
CACEIS Bank Luxembourg
Caja de Ahorros Y Monte de Piedad de Madrid
Citico Bank Nederland N.V.
Citibank Europe plc
Commerzbank Europe (Ireland)
DePfa ACS Bank
DePfa-Bank Europe plc
Deutsche Bank AG
Dexia Banque Belgique
Dexia Crédit Local
DZ-Bank Ireland plc
Dexia Municipal Agency
Elavon Financial Service Limited
Fortis Prime Fund Solutions Bank (Ireland) Limited
Goldman Sachs Bank (Europe) plc
Helaba Dublin Landesbank Hessen-Thuringen International
Hewlett-Packard International Bank plc
HSBC Bank plc
HSBC Private Bank (UK) Limited
Hypo Public Finance Bank
ING Bank N.V.
J.P. Morgan Bank Dublin plc
J.P. Morgan Bank (Ireland) plc
KBC Bank N.V. Dublin Branch

Credit Institutions: Non-Clearing with Predominantly Foreign Business (Continued)

Landesbank Hessen-Thüringen Girozentrale
 Leeds Building Society
 LGT Bank (Ireland) Limited
 Merrill Lynch International Bank Limited
 Naspa Dublin
 Pfizer International Bank Europe
 PNC International Bank Limited
 Rabobank Ireland plc
 Rabobank Nederland
 RBC Dexia Investor Services Bank SA
 Intesa Sanpaolo Bank Ireland plc
 Scotiabank (Ireland) Limited
 Société Générale SA
 The Bank of New York Mellon (Ireland) Ltd
 UBS (Luxembourg) SA
 UniCredit Bank Ireland plc
 Volkswagen Bank GmbH
 Wells Fargo Bank International
 WestLB Covered Bond Bank plc
 WestLB Ireland plc
 WZ-Bank Ireland plc
 Zurich Bank

Credit Institutions: Mortgage Lenders

ACC Bank plc
 AIB Mortgage Bank
 Allied Irish Banks plc
 Anglo Irish Mortgage Bank
 Bank of Ireland Mortgage Bank
 The Governor and Company of the Bank of Ireland
 Bank of Scotland (Ireland) Limited
 Danske Bank A/S
 EBS Building Society
 EBS Mortgage Finance
 First Active plc
 ICS Building Society
 Irish Life & Permanent plc
 Irish Nationwide Building Society
 KBC Bank Ireland plc
 KBC Mortgage Bank
 Ulster Bank Ireland Limited

Post Office Savings Bank

Section A

Main Monetary Indicators

Table A2.1: Domestic Credit to Irish Residents

€ million	2009	2010	
Return dates	30 Nov	31 Dec	29 Jan 26 Feb
1. Components			
Credit Institutions: Retail Clearing			
1. Loans to other residents (non-MFI, non-Government entities)	187,150	185,696	183,659
1.1 Euro	164,320	162,909	160,816
1.2 Non-euro	22,830	22,787	22,843
2. Holdings of securities, shares and other equity issued by other residents	16,829	16,809	16,860
2.1 Securities	15,722	15,701	15,751
2.1.1 Euro	15,618	15,594	15,641
2.1.2 Non-euro	104	107	110
2.2 Shares and other equity	1,106	1,108	1,108
2.2.1 Euro	1,042	1,043	1,043
2.2.2 Non-euro	65	65	66
3. General Government credit (central, regional and local)	4,338	4,285	4,499
3.1 Loans	427	370	373
3.1.1 Euro	427	370	373
3.1.2 Non-euro	—	—	—
3.2 Securities	3,910	3,915	4,126
3.2.1 Euro	3,910	3,915	4,126
3.2.2 Non-euro	—	—	—
4. Accrued interest receivable on credit to other residents	755	578	639
4.1 Euro	644	516	594
4.2 non-euro	111	62	46
Credit Institutions: Non-Clearing			
5. Loans to other residents (non-MFI, non-Government entities)	140,929 [†]	141,913	141,607
5.1 Euro	126,358 [†]	124,980	124,304
5.2 non-euro	14,571	16,933	17,303
6. Holdings of securities, shares and other equity issued by other residents	27,024	26,572	26,342
6.1 Securities	22,368	22,299	22,027
6.1.1 Euro	21,550	21,462	21,266
6.1.2 non-euro	818	836	761
6.2 Shares and other equity	4,657	4,273	4,315
6.2.1 Euro	4,546	4,146	4,194
6.2.2 non-euro	111	127	121
7. General Government credit (central, regional and local)	5,168	5,078	4,899
7.1 Loans	946	940	936
7.1.1 Euro	946	940	936
7.1.2 non-euro	—	—	—
7.2 Securities	4,221	4,139	3,963
7.2.1 Euro	4,221	4,139	3,963
7.2.2 Non-euro	—	—	—
8. Accrued interest receivable on credit to other residents	422	310	354
8.1 Euro	364	287	325
8.2 non-euro	57	23	29
Other			
9. Direct net external Government borrowing from 1 Jan. each year	—	—	—
10. Non-euro lending by credit institutions to non-MFI IFSC companies	19,708	21,880	22,202
11. Total lending by credit institutions to non-MFI IFSC companies	27,401	29,921	30,494

Table A2.2: Private-Sector Credit to Irish Residents

	Private sector credit (PSC)				Residential mortgage lending			
	Total	PSC Growth Rates		Non-Mortgage Credit	Outstanding level ^b	Residential mortgage lending		
	(1+2+4+5+6+8)	Unadjusted year-to-year change	Adjusted year-to-year change ^a	Adjusted year-to-year change ^a		Unadjusted year-to-year change	Adjusted level ^c	Adjusted year-to-year change ^{c,d}
	€ million	%	%	%	€ million	%	€ million	%
2007								
April	331,842	20.2	22.2	29.4	113,722	11.6	128,722	21.0
May	337,438	19.3	20.9	27.7	115,397	10.8	130,215	20.0
June	342,774	18.8	20.2	26.3	115,704	10.9	131,845	19.0
July	347,684	18.5	20.3	25.9	117,549	11.6	133,441	17.9
August	351,650	18.4	20.1	25.0	119,098	12.5	134,723	17.0
September	360,112	19.0	19.5	24.5	120,522	11.6	135,963	16.1
October	366,705	18.7	18.5	23.4	121,872	10.8	137,125	15.1
November	372,703	18.1	17.1	21.6	123,407	10.0	138,457	14.2
December	376,796	18.6	17.0	20.6	123,002	11.2	139,842	13.4
2008								
January	378,202	17.7	16.6	20.2	123,981	10.6	140,666	12.9
February	379,072	16.2	15.6	18.9	124,888	10.0	141,378	12.3
March	384,340	17.1	17.1	20.8	124,385	10.7	142,403	11.6
April	386,342	16.4	15.9	19.3	125,348	10.2	143,417	11.4
May	390,325	15.7	15.1	18.3	126,597	9.7	144,456	10.9
June	392,937	14.6	14.3	20.2	120,569	4.2	145,341	10.2
July	395,857	13.9	13.2	18.8	121,442	3.3	146,304	9.6
August	399,473	13.6	12.8	18.6	122,125	2.5	146,813	9.0
September	399,143	10.8	10.5	15.4	123,045	2.1	147,550	8.5
October	401,244	9.4	8.9	13.4	123,240	1.1	147,574	7.6
November	403,945	8.4	9.1	17.7	115,944	-6.0	147,881	6.8
December	395,070	4.8	7.3	15.4	114,290	-7.1	148,115	5.9
2009								
January	398,069	5.3	6.6	14.6	114,772	-7.4	148,465	5.5
February	398,252	5.1	5.6	13.3	114,970	-7.9	148,523	5.1
March	392,258	2.1	2.4	8.5	113,637	-8.6	148,542	4.3
April	390,446	1.1	1.6	7.6	113,679	-9.3	148,429	3.5
May	388,859	-0.4	0.6	6.5	113,765	-10.1	148,411	2.7
June	387,350	-1.4	-0.8	1.7	113,860	-5.6	148,349	2.1
July	383,969	-3.0	-2.2	-0.2	113,744	-6.3	148,067	1.2
August	382,460	-4.3	-3.0	0.6	109,618	-10.2	147,983	0.8
September	378,086	-5.3	-3.4	0.4	109,764	-10.8	147,969	0.3
October	375,744	-6.4	-3.7	0.0	109,752	-10.9	147,807	0.2
November	373,108 ^f	-7.6	-5.4 ^f	-5.4	109,779	-5.3	147,673	-0.1
December	371,879	-5.9	-6.0	-7.0	109,917	-3.8	147,654	-0.3
2010								
January	369,461	-7.2	-7.1	-8.3	109,770	-4.4	147,385	-0.7

^a This series excludes transactions between credit institutions and non-MFI IFSC companies and valuation effects arising from exchange-rate movements.

^b 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.

^c The level of outstanding securitised mortgages (i.e. the initial amount of the securitisation less all repayments of capital made by the borrowers) has been added to the outstanding level of residential mortgages and a year-to-year change calculated in order to more accurately capture in indebtedness of Irish residents for housing purposes.

^d Year-to-year growth rates between July 2004 and June 2005 were boosted by the transfer of some €2 billion in residential mortgages to an Irish credit institution from its parent institution abroad. In order to give a more accurate picture of developments, this amount was excluded in the calculation of adjusted growth rates for this period. The resulting rates were termed 'underlying rates' and are now shown for the twelve months to June 2005.

Table A3: Irish Contribution to Euro Area Money Supply^a

€ million	2009		2010			
End-month	30 Nov	31 Dec	29 Jan			
1. Components ^b						
1. Currency issued ^c	11,173	11,173	11,345			
2. Overnight deposits	77,800	78,846	78,011			
M1 (1+2)	88,973	90,018	89,355			
3. Deposits with agreed maturity: up to 2 years	84,310	82,090	82,379			
4. Deposits redeemable at notice: up to 3 months	15,697	16,052	16,422			
5. Post Office Savings Bank Deposits	1,836	1,841	1,868			
M2 (M1+3+4+5)	190,816	190,002	190,025			
6. Repurchase agreements	908	1,006	861			
7. Debt securities: up to 2 years maturity ^d	−46,821	−49,449	−55,426			
8. Money market fund shares/units	58,142 ^r	56,877	63,388			
M3 (M2+6+7+8)	203,044 ^r	198,436	198,847			
2. Selected Measures of Irish Contribution						
M1		M2		M3		
Components	1+2	M1+3+4+5		M2+6+7+8		
	Amount	Headline year-to-year change – %	Amount	Headline year-to-year change – %	Amount	Headline year-to-year change – % ^e
2009						
30 November	88,973	11.7	190,816	0.9	203,044 ^r	3.5
31 December	90,018	11.3	190,002	−0.8	198,436	−2.1
2010						
29 January	89,355	9.0	190,025	1.7	198,847	2.5

^a From 1 January 2009, credit unions are classified as credit institutions. However, their balance sheet data are not included in the *Monthly Statistics*, and Table A3 does not currently include credit unions' deposits in the Irish contribution to the euro-area money supply.

^b *Vis-à-vis* residents of Ireland and other Monetary Union Members.

^c This comprises the Bank's share of euro banknotes issued in the Eurosystem, in proportion to its paid-up shares in the capital of the ECB, plus coin issued by the Bank less holdings of issued euro banknotes and coin by the MFI sector.

^d In line with Eurosystem requirements, these data exclude securities issued to non-euro area residents, while holdings by credit institutions of debt securities up to two years maturity issued by euro-area MFIs are netted off debt securities issued in this category.

^e Year-to-year changes in M3 from June 2009 have been adjusted to account for residency reclassifications of money market fund shares/units in this month which would otherwise artificially lower the annual change in the broad money aggregate.

Section B

Interest Rates and Exchange Rates and Balance of Payments

Table B1: Official and Selected Interest Rates

Per cent per annum	2009			2010	
End-month	Oct.	Nov.	Dec.	Jan.	Feb.
1. Eurosystem Official Interest Rates^a					
Marginal lending facility	1.75	1.75	1.75	1.75	1.75
Deposit facility	0.25	0.25	0.25	0.25	0.25
Main refinancing operations	1.00	1.00	1.00	1.00	1.00
2. Interbank Market — Euribor^b					
Eonia (overnight)	0.40	0.43	0.41	0.33	0.32
1 month fixed	0.42	0.47	0.45	0.43	0.42
3 month fixed	0.72	0.72	0.70	0.67	0.66
12 month fixed	1.24	1.23	1.25	1.23	1.22
3. Clearing Banks' Prime Rate — Ireland^c	0.70-2.00	0.70-2.00	0.75-2.00	0.70-2.00	0.65-2.00
4. House Purchase Loans — Ireland^d	2.45-5.90	2.45-5.90	2.45-5.90	2.45-5.90	2.45-5.90
5. Government Securities Market — Ireland^g					
2 years to maturity	2.04	2.22	2.23	2.96	2.48
5 years to maturity	3.10	3.26	3.25	3.98	3.64
10 years to maturity	4.76	4.91	4.94	4.83	4.59

^a On 7 May 2009, the ECB announced a decrease of 0.5 of a percentage point in the 'marginal lending facility', and 0.25 of a percentage point in the 'main refinancing operations' rates.

^b 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.

^c Rates are representative of those charged to large commercial customers for short-term borrowings.

^d These are standard variable mortgage rates for 'Credit Institutions: Mortgage Lenders' reporting to the Central Bank & Financial Services Authority of Ireland.

^g The yields shown under this heading are representative.

Table B2.1: Retail Interest Rates^a and Volumes for Outstanding Amounts^b

End-month	2009				2010
	Sep.	Oct.	Nov.	Dec.	Jan.
DEPOSITS					
Households					
<i>With agreed maturity</i>					
— Up to 2 years	3.46	3.38	3.28	3.23^r	3.13
	<i>32,275</i>	<i>31,621</i>	<i>30,935</i>	<i>30,924^f</i>	<i>30,633</i>
— Over 2 years	2.37	2.38	1.98	2.03	2.02
	<i>3,038</i>	<i>3,015</i>	<i>3,150</i>	<i>3,290</i>	<i>3,361</i>
Non-financial corporations					
<i>With agreed maturity</i>					
— Up to 2 years	2.09	2.02	2.05	2.03	2.04
	<i>22,062</i>	<i>21,836</i>	<i>21,487</i>	<i>21,164</i>	<i>20,263</i>
— Over 2 years	0.97	0.94	0.92	0.90	0.83
	<i>3,047</i>	<i>3,042</i>	<i>2,927</i>	<i>2,900</i>	<i>2,836</i>
LOANS					
Households					
<i>For house purchase</i>					
— Up to 1 year original maturity	2.80	2.77	2.76	2.77	2.82
	<i>1,102</i>	<i>1,091</i>	<i>1,052</i>	<i>1,032</i>	<i>1,014</i>
— Over 1 and up to 5 years original maturity	2.70	2.74	2.72	2.68	2.68
	<i>2,146</i>	<i>2,113</i>	<i>2,128</i>	<i>2,117</i>	<i>2,075</i>
— Over 5 years original maturity	2.73	2.67	2.66	2.68	2.66
	<i>106,346</i>	<i>106,364</i>	<i>106,399</i>	<i>106,543</i>	<i>106,435</i>
<i>For consumer credit and other loans</i>					
— Up to 1 year original maturity	7.07	7.06	7.01	6.96	6.82
	<i>7,489</i>	<i>7,413</i>	<i>7,559</i>	<i>7,473</i>	<i>7,748</i>
— Over 1 and up to 5 years original maturity	6.01	5.88	5.85	5.85	5.84
	<i>8,173</i>	<i>8,155</i>	<i>7,900</i>	<i>7,794</i>	<i>7,349</i>
— Over 5 years original maturity	3.97	3.92	3.89	3.90	3.88
	<i>9,042</i>	<i>8,825</i>	<i>8,581</i>	<i>8,577</i>	<i>8,843</i>
Non-financial corporations					
— Up to 1 year original maturity	3.10	3.01	3.05	3.07	3.05
	<i>50,644</i>	<i>49,232</i>	<i>50,372</i>	<i>49,806</i>	<i>50,704</i>
— Over 1 and up to 5 years original maturity	3.30	3.26	3.23	3.25	3.19^r
	<i>51,733</i>	<i>51,328</i>	<i>51,200</i>	<i>48,940^f</i>	<i>48,370</i>
— Over 5 years original maturity	3.00	2.96	2.95	2.98	2.96
	<i>57,869</i>	<i>55,131</i>	<i>55,122^f</i>	<i>54,473</i>	<i>52,274</i>

a Rates reported are weighted averages for each instrument category.

b The interest rate and volume data refer to euro-denominated loans and deposits *vis-à-vis* households and non-financial corporations resident in Ireland and other Monetary Union Member States.

Note: Rates are in bold in percentages per annum; volumes are in italics in € million.

Table B2.2: Retail Interest Rates^a and Volumes for New Business^b

End-month	2009		2010		
	Sep.	Oct.	Nov.	Dec.	Jan.
DEPOSITS					
Households					
— Overnight ^c	0.63	0.63	0.64	0.64	0.66
	<i>36,721</i>	<i>37,660</i>	<i>37,465</i>	<i>37,847</i>	<i>37,943</i>
— With agreed maturity	1.23	1.33	1.49	1.62	1.57
	<i>11,882</i>	<i>11,325</i>	<i>11,461</i>	<i>11,021</i>	<i>10,080</i>
— Redeemable at notice ^c	2.21	2.22	2.24	2.30	2.28
	<i>14,551</i>	<i>14,883</i>	<i>15,314</i>	<i>15,699</i>	<i>16,030</i>
Non-financial corporations					
— Overnight ^c	0.30	0.30	0.30	0.32	0.32
	<i>18,740</i>	<i>19,136</i>	<i>19,202</i>	<i>19,459</i>	<i>18,993</i>
— With agreed maturity	1.00	0.96	0.94	1.12	1.10
	<i>11,858</i>	<i>10,300</i>	<i>10,579</i>	<i>11,042</i>	<i>9,127</i>
LOANS					
Households					
<i>Bank overdraft^c</i>	12.64	12.71	12.66	12.60	12.60
	<i>2,788</i>	<i>2,758</i>	<i>2,743</i>	<i>2,739</i>	<i>2,728</i>
<i>For consumption purposes</i>					
— Floating rate and up to 1 year initial rate fixation	4.47	4.05	4.65	3.63	5.44
	<i>291</i>	<i>288</i>	<i>286</i>	<i>418</i>	<i>235</i>
— Over 1 year initial rate fixation	9.68	9.83	10.01	9.65	9.74
	<i>66</i>	<i>80</i>	<i>60</i>	<i>49</i>	<i>58</i>
<i>For house purchases</i>					
— Floating rate and up to 1 year initial rate fixation	2.62	2.67	2.61	2.61	2.57
	<i>1,696</i>	<i>1,765</i>	<i>1,669</i>	<i>1,597</i>	<i>1,390</i>
— Over 1 year initial rate fixation	3.65	3.60	3.58	3.57	3.54
	<i>335</i>	<i>358</i>	<i>322</i>	<i>306</i>	<i>264</i>
<i>For other purposes</i>					
	4.06	3.79	3.51	2.72	2.94
	<i>89</i>	<i>78</i>	<i>114</i>	<i>261</i>	<i>163</i>
Non-financial corporations					
<i>Bank overdraft^c</i>	5.75	5.75	5.69	5.75	5.74
	<i>5,635</i>	<i>5,371</i>	<i>5,497</i>	<i>5,376</i>	<i>5,302</i>
<i>Other loans up to €1 million</i>					
— Floating rate and up to 1 year initial rate fixation	3.50	3.59	3.94	3.32	3.81
	<i>642</i>	<i>542</i>	<i>627</i>	<i>1,022</i>	<i>389</i>
— Over 1 year initial rate fixation	4.39	4.35	4.35	4.27	4.39
	<i>93</i>	<i>86</i>	<i>85</i>	<i>74</i>	<i>68</i>
<i>Other loans over €1 million</i>					
— Floating rate and up to 1 year initial rate fixation	2.71	2.71	2.59	2.50	2.68
	<i>4,122</i>	<i>3,651</i>	<i>2,761</i>	<i>7,219</i>	<i>1,899</i>
— Over 1 year initial rate fixation	2.29	2.74	2.88	3.88	2.83
	<i>235</i>	<i>184</i>	<i>252</i>	<i>631</i>	<i>196</i>
APRC for loans to households					
<i>For consumption purposes</i>	5.44	5.12	5.56	4.23	6.28
	<i>357</i>	<i>368</i>	<i>347</i>	<i>467</i>	<i>293</i>
<i>For house purchases</i>	2.85	2.86	2.78	2.80	2.76
	<i>2,031</i>	<i>2,122</i>	<i>1,991</i>	<i>1,902</i>	<i>1,654</i>

^a Rates reported are weighted averages for each instrument category.

^b The interest rate and volume data refer to euro-denominated loans and deposits *vis-à-vis* households and non-financial corporations resident in Ireland and other Monetary Union Member States.

^c For these categories, new business is defined as outstanding amounts.

Note: Rates are in bold in percentages per annum; volumes are in italics in € million.

Table B4.1: 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	117.76	108.17
February	105.93	116.91	107.69
March	106.53	117.22	107.92
April	105.69	116.58	107.41
May	104.89	115.79	107.18
June	102.84	113.67	105.14
July	103.14	114.03	105.68
August	103.68	114.54	105.48
September	103.36	114.47	104.49
October	102.95	114.00	104.01
November	102.28	113.08	104.14
December	102.36	112.81	104.22
2006			
January	102.97	113.60	104.14
February	102.36	113.30	104.02
March	102.88	113.80	104.24
April	103.72	114.73	104.46
May	104.73	116.02	104.82
June	104.89	116.11	104.71
July	105.01	116.33	104.39
August	105.00	116.64	104.35
September	104.79	116.21	104.98
October	104.38	115.91	104.33
November	105.00	116.32	104.62
December	105.82	117.50	105.45
2007			
January	105.07	116.92	105.31
February	105.39	117.20	104.75
March	106.12	118.04	104.72
April	106.78	118.84	104.89
May	106.75	118.81	104.72
June	106.34	118.34	104.57
July	106.91	119.08	104.84
August	106.78	119.01	105.66
September	107.68	119.93	105.69
October	108.49	120.67	106.87
November	109.88	122.04	106.80
December	109.97	122.08	107.77
2008			
January	110.79	122.81	108.11
February	110.76	122.98	108.27
March	113.22	125.94	109.63
April	114.38	126.84	111.59
May	113.88	126.21	109.80
June	113.92	126.07	108.80
July	114.39	125.95	107.99
August	112.53	123.71	108.18
September	111.33	122.44	106.57
October	108.71	119.66	106.17
November	108.30	119.51	108.19
December	112.34	124.01	112.79
2009			
January	112.04	123.53	112.79
February	110.46	120.86	111.83
March	112.48	122.67	113.55
April	111.86	121.83	113.68
May	112.33	121.68	113.74
June	112.76	121.74	113.27
July	112.91	121.43	113.90
August	113.21	121.37	113.66
September	114.47	122.15	115.22
October	115.46	122.87	116.34
November	115.27	122.19	115.65
December	114.42	120.82	114.85
2010			
January	112.82	118.92	113.31

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 B4.2: Harmonised Competitiveness Indicators for Ireland (HCIs)

1999 Q1 = 100

		Real HCI (Deflated by GDP)	Real HCI (Deflated by whole economy Unit Labour Costs)
1995	Q1	91.37	105.93
	Q2	91.89	106.13
	Q3	92.79	107.00
	Q4	92.62	106.18
1996	Q1	92.65	106.12
	Q2	93.20	106.98
	Q3	94.63	107.57
	Q4	97.01	108.76
1997	Q1	98.43	109.04
	Q2	98.24	105.42
	Q3	96.94	108.32
	Q4	99.92	107.03
1998	Q1	96.05	100.91
	Q2	99.81	101.91
	Q3	100.84	102.16
	Q4	101.99	106.66
1999	Q1	100.00	100.00
	Q2	97.67	100.76
	Q3	99.21	97.49
	Q4	98.16	96.37
2000	Q1	96.94	94.83
	Q2	95.18	92.09
	Q3	95.42	92.12
	Q4	94.35	91.19
2001	Q1	98.58	93.82
	Q2	97.69	93.32
	Q3	100.16	95.72
	Q4	100.31	95.74
2002	Q1	101.47	92.89
	Q2	101.11	94.80
	Q3	105.25	96.10
	Q4	107.26	97.31
2003	Q1	110.87	102.35
	Q2	113.24	104.72
	Q3	113.60	105.77
	Q4	114.66	104.72
2004	Q1	116.23	108.86
	Q2	114.39	108.85
	Q3	114.70	110.93
	Q4	116.64	112.31
2005	Q1	116.98	113.39
	Q2	116.38	112.09
	Q3	114.56	114.41
	Q4	114.00	114.21
2006	Q1	116.41	114.23
	Q2	116.50	115.95
	Q3	118.59	115.24
	Q4	116.54	118.36
2007	Q1	118.45	112.67
	Q2	119.40	119.45
	Q3	117.41	121.67
	Q4	118.22	123.31
2008	Q1	118.79	127.94
	Q2	120.62	131.40
	Q3	120.12	126.35
	Q4	116.79	126.19
2009	Q1	114.56	124.56
	Q2	115.45	122.62
	Q3	115.60	126.21

Table B5: Indices of Relative Wage Costs in Manufacturing Industry

1999 = 100	Average Hourly Earnings ^a		Unit Wage Costs ^a	
	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	97
2006	149	126	85	97
2007	155	130	85	97
2008	163	134	87	101
2009 ^f	168	136	80	105
2010 ^f	169	139	76	105
1999 = 100	Relative Hourly Earnings ^b		Relative Unit Wage Costs ^b	
	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	88	93
2007	119	130	87	95
2008	121	139	86	99
2009 ^f	123	142	76	88
2010 ^f	121	139	72	82

^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.

Section C

Banking and Other Financial Institutions

Note: From 1 January 2009, credit unions are classified as credit institutions. Therefore, deposits from, and loans to credit unions are now included under the deposit and loans balances with other MFIs in Tables C3-C7. However, credit unions' balance sheets are not currently incorporated in Tables C3-C7.

Table C2: Financial Statement of the Central Bank and Financial Services Authority of Ireland^a

€ million								
1. Assets								
	Gold and gold receivables	Claims on non-euro area residents in foreign currency	Claims on euro area residents in foreign currency	Claims on non-euro area residents in euro	Lending to euro area credit institutions in euro	of which		
						Main refinancing operations	Longer-term refinancing operations	Fine-tuning reverse operations
	1	2	3	4	5	6	7	8
2009								
27 February	120	517	9,541	1,348	103,390	42,213	61,177	—
27 March	120	566	11,041	1,568	120,628	52,424	67,304	—
24 April	133	589	11,411	1,478	120,577	46,448	74,129	—
29 May	133	636	8,328	1,740	118,087	46,733	71,354	—
26 June	133	665	7,352	1,488	130,423	20,090	110,333	—
31 July	129	609	4,802	1,665	110,215	7,497	102,718	—
28 August	129	1,290	2,897	1,185	98,403	10,715	87,688	—
25 September	129	1,367	2,707	1,603	91,573	14,418	77,155	—
30 October	132	1,310	125	1,527	87,404	6,750	80,654	—
27 November	132	1,258	154	1,159	78,664	4,340	74,324	—
25 December	132	1,278	132	1,037	91,958	7,525	84,433	—
2010								
29 January	148	1,267	197	1,250	97,733	14,325	83,408	—
26 February	148	1,264	201	1,421	84,998	7,470	77,528	—
2. Liabilities								
	Banknotes in circulation	Liabilities to euro area credit institutions in euro	of which				Other liabilities to euro area credit institutions in euro	Debt Certificates issued
			Current accounts (covering the minimum reserve system)	Deposit facility	Fixed-term deposits	Deposits related to margin calls	Fine-tuning reverse operations	
	1	2	3	4	5	6	7	8
2009								
27 February	10,861	10,321	9,157	761	—	403	—	—
27 March	11,095	10,895	10,686	109	—	100	—	—
24 April	11,044	11,606	11,480	26	—	100	—	—
29 May	11,145	7,225	7,225	—	—	—	—	—
26 June	11,206	14,763	7,951	6,812	—	—	—	—
31 July	11,312	9,865	7,679	2,186	—	—	—	—
28 August	11,313	9,670	7,230	2,440	—	—	—	—
25 September	11,331	13,297	11,337	1,960	—	—	—	—
30 October	11,295	10,121	8,371	1,750	—	—	—	—
27 November	11,390	10,950	10,387	563	—	—	—	—
25 December	12,219	13,893	8,840	5,053	—	—	—	—
2010								
29 January	11,471	16,181	7,455	8,726	—	—	—	—
26 February	11,482	11,012	8,462	2,550	—	—	—	—

^a Data relate to the last Friday of the month.

Note: An advance release calendar for the publication of the analytical accounts of the CBFSAI and of the banking sector that meets the IMF's SDDS requirements is published on the IMF Bulletin Board, <http://dsbb.imf.org>.

Table C2 — continued

1. Assets

Structural Reverse operations	Marginal Lending Facility	Credits related to margin calls	Other claims on euro area credit institutions in euro	Securities of euro area residents in euro	General government debt in euro	Other assets	Total Assets	
9	10	11	12	13	14	15	16	
—	—	—	526	13,877	—	1,558	130,877	2009 27 February
—	900	—	271	13,930	—	11,726	159,850	27 March
—	—	—	530	13,880	—	11,673	160,271	24 April
—	—	—	408	13,800	—	14,331	157,463	29 May
—	—	—	428	14,056	—	15,290	169,835	26 June
—	—	—	334	14,111	—	14,193	146,058	31 July
—	—	—	503	14,595	—	11,448	130,450	28 August
—	—	—	65	14,699	—	11,087	123,230	25 September
—	—	—	200	14,861	—	9,111	114,670	30 October
—	—	—	330	15,303	—	10,566	107,566	27 November
—	—	—	636	15,150	—	13,474	123,797	25 December
—	—	—	479	15,131	—	13,751	129,956	2010 29 January
—	—	—	283	15,241	—	14,643	118,199	26 February

2. Liabilities

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	Total Liabilities	
10	11	12	13	14	15	16	17	18	
30,286	15	—	—	96	242	1,319	77,737	130,877	2009 27 February
30,678	2,164	—	—	96	242	1,320	103,360	159,850	27 March
22,710	4,443	—	—	98	295	1,317	108,758	160,271	24 April
19,985	4,568	—	—	98	295	1,305	112,842	157,463	29 May
24,689	4,620	—	—	98	295	1,291	112,873	169,835	26 June
31,309	4,648	—	—	96	208	1,285	87,335	146,058	31 July
30,938	4,734	—	—	773	208	1,284	71,530	130,450	28 August
28,319	4,554	—	—	845	208	1,284	63,392	123,230	25 September
30,487	3,538	—	—	838	215	1,283	56,893	114,670	30 October
31,673	12	—	—	838	215	1,287	51,201	107,566	27 November
25,759	10	—	—	838	215	1,290	69,573	123,797	25 December
32,106	16	—	—	844	210	1,319	67,809	129,956	2010 29 January
30,265	13	—	—	844	210	1,315	63,058	118,199	26 February

Table C3: Credit Institutions^a: Aggregate Balance Sheet

€ million	30 November 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	53,887	14,049	15,303	83,240
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	166,556	176,705	260,305	603,566
3. Deposits from Central Bank	77,984	—	—	77,984
3.1 Short-term	77,984	—	—	77,984
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	3,502	663	4,806	8,971
5. Deposits from other residents (non-MFIs, non-Government entities)	172,223	33,102	65,013	270,338
5.1 Overnight: Current accounts	35,186	392	8,540	44,117
Demand accounts ^b	39,769	1,696	19,865	61,330
5.2 Agreed maturity: Up to and including 1 year	61,957	11,658	23,953	97,569
1 to 2 years	9,827	334	828	10,989
Over 2 years	9,936	18,444	2,906	31,286
5.3 Notice: Up to and including 3 months	15,539	128	725	16,392
Over 3 months	—	—	—	—
5.4 Repurchase agreements	8	450	8,197	8,654
6. Debt securities issued ^c	51,340	28,753	99,505	179,598
6.1 Up to and including 1 year	4,555	5,491	33,689	43,735
6.2 1 to 2 years	12,805	2,007	14,596	29,409
6.3 Over 2 years	33,980	21,254	51,220	106,453
7. Remaining liabilities	36,775	7,273	35,186	79,234
Total liabilities	562,267	260,544	480,120	1,302,931
Assets				
1. Holdings of notes and coin	860	—	11	870
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	166,556	50,670	177,423	394,649
3. Balances with Central Bank	10,688	94	67	10,850
3.1 Mandatory balances	10,613	—	—	10,613
3.2 Other	75	94	67	237
4. Loans to general government (central, regional and local)	1,374	10,408	4,049	15,831
5. Loans to other residents (non-MFI, non-Government entities)	366,168 ^r	66,506	160,296	592,971 ^r
5.1 Overdrafts	8,921	32	374	9,328
5.2 Repurchase agreements	55	—	10,659	10,714
5.3 Loans up to and including 1 year	51,571	1,965	5,486	59,022
5.4 Term/revolving loans	136,309	26,045	35,236	197,590
5.5 Instalment credit/hire-purchase/leases	2,629	257	193	3,079
5.6 Residential mortgages	109,779	96	1,198	111,073
5.7 Other mortgages	15,652 ^r	703	634	16,989 ^r
5.8 Other loans and securities issued to other residents	41,252	37,408	106,517	185,177
6. Holdings of securities	32,731	108,966	68,392	210,088
6.1 Issued by MFIs	24,599	54,435	36,993	116,027
6.2 Issued by general government	8,132	54,531	31,399	94,061
6.2.1 Exchequer notes	867	2,449	914	4,230
6.2.2 Securities	7,264	52,082	30,484	89,830
7. Holdings of shares and other equity	8,874	2,464	4,921	16,259
7.1 Issued by MFIs	3,111	764	1,842	5,716
7.2 Issued by other residents (non-MFI, non-Government entities)	5,763	1,699	3,080	10,542
8. Fixed assets	1,506	—	—	1,506
9. Remaining assets	25,894 ^r	9,329	24,683	59,907 ^r
Total assets	614,651	248,438	439,843	1,302,931

^a Other MFIs comprise financial institutions whose business is to receive deposits or close substitutes for deposits.

^b In line with Eurosystem requirements, demand accounts have been reclassified from deposits redeemable at notice to overnight deposits.

^c Money market paper is included in the category 'Up to and including one year'.

Table C3 — continued

€ million	31 December 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	54,764	15,376	15,463	85,603
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	171,228	165,675	255,605	592,508
3. Deposits from Central Bank	90,899	—	—	90,899
3.1 Short-term	90,898	—	—	90,898
3.2 Other	1	—	—	1
4. Deposits from general government (central, regional and local)	3,276	594	2,200	6,070
5. Deposits from other residents (non-MFIs, non-Government entities)	171,305	33,554	67,129	271,988
5.1 Overnight: Current accounts	36,007	740	10,225	46,971
Demand accounts ^b	39,469	1,762	22,416	63,646
5.2 Agreed maturity: Up to and including 1 year	59,910	11,572	23,126	94,609
1 to 2 years	9,898	241	827	10,966
Over 2 years	10,067	18,610	1,762	30,438
5.3 Notice: Up to and including 3 months	15,949	79	752	16,780
Over 3 months	—	—	—	—
5.4 Repurchase agreements	5	551	8,021	8,577
6. Debt securities issued ^c	50,753	26,975	101,449	179,177
6.1 Up to and including 1 year	4,315	6,151	36,030	46,496
6.2 1 to 2 years	12,474	1,640	14,563	28,677
6.3 Over 2 years	33,965	19,183	50,855	104,003
7. Remaining liabilities	42,097	7,099	31,244	80,439
Total liabilities	584,321	249,274	473,090	1,306,685
Assets				
1. Holdings of notes and coin	1,308	—	12	1,320
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	171,228	48,036	180,078	399,341
3. Balances with Central Bank	15,937	98	67	16,102
3.1 Mandatory balances	9,278	—	—	9,278
3.2 Other	6,660	98	67	6,825
4. Loans to general government (central, regional and local)	1,310	10,350	4,153	15,813
5. Loans to other residents (non-MFI, non-Government entities)	365,610	63,799	162,157	591,566
5.1 Overdrafts	8,729	40	517	9,286
5.2 Repurchase agreements	43	3	11,256	11,302
5.3 Loans up to and including 1 year	55,275	2,108	5,762	63,144
5.4 Term/revolving loans	132,650	23,283	36,117	192,050
5.5 Instalment credit/hire-purchase/leases	2,506	254	195	2,955
5.6 Residential mortgages	109,917	97	1,196	111,211
5.7 Other mortgages	15,471	698	640	16,809
5.8 Other loans and securities issued to other residents	41,019	37,316	106,475	184,810
6. Holdings of securities	32,596	110,214	66,770	209,580
6.1 Issued by MFIs	24,542	54,089	35,784	114,416
6.2 Issued by general government	8,053	56,124	30,986	95,164
6.2.1 Exchequer notes	717	3,500	432	4,649
6.2.2 Securities	7,336	52,625	30,554	90,515
7. Holdings of shares and other equity	8,490	2,475	5,289	16,254
7.1 Issued by MFIs	3,109	759	1,864	5,732
7.2 Issued by other residents (non-MFI, non-Government entities)	5,381	1,716	3,426	10,523
8. Fixed assets	1,350	—	—	1,350
9. Remaining assets	23,510	9,202	22,646	55,359
Total assets	621,337	244,175	441,174	1,306,685

Table C3 — continued

€ million	29 January 2010			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	57,244	15,227	16,442	88,913
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	175,090	169,297	252,280	596,667
3. Deposits from Central Bank	95,773	—	—	95,773
3.1 Short-term	95,773	—	—	95,773
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	3,066	471	3,070	6,606
5. Deposits from other residents (non-MFIs, non-Government entities)	170,974	34,014	65,977	270,965
5.1 Overnight: Current accounts	35,748	539	9,918	46,206
Demand accounts ^b	38,948	2,028	21,681	62,657
5.2 Agreed maturity: Up to and including 1 year	60,227	11,610	23,340	95,176
1 to 2 years	9,665	242	754	10,661
Over 2 years	10,081	18,850	1,647	30,578
5.3 Notice: Up to and including 3 months	16,295	94	774	17,163
Over 3 months	—	—	—	—
5.4 Repurchase agreements	10	651	7,864	8,524
6. Debt securities issued ^c	50,106	28,230	104,252	182,588
6.1 Up to and including 1 year	4,219	3,797	38,755	46,771
6.2 1 to 2 years	12,510	1,859	14,505	28,875
6.3 Over 2 years	33,377	22,574	50,992	106,942
7. Remaining liabilities	39,996	7,625	32,642	80,263
Total liabilities	592,249	254,864	474,663	1,321,775
Assets				
1. Holdings of notes and coin	801	—	12	813
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	175,090	51,422	181,365	407,877
3. Balances with Central Bank	17,925	101	70	18,096
3.1 Mandatory balances	9,199	—	—	9,199
3.2 Other	8,726	101	70	8,897
4. Loans to general government (central, regional and local)	1,310	10,404	4,236	15,950
5. Loans to other residents (non-MFI, non-Government entities)	363,044	63,191	164,393	590,628
5.1 Overdrafts	8,770	32	651	9,453
5.2 Repurchase agreements	76	3	11,729	11,808
5.3 Loans up to and including 1 year	55,789	2,919	5,968	64,676
5.4 Term/revolving loans	130,434	22,448	36,845	189,726
5.5 Instalment credit/hire-purchase/leases	2,461	278	215	2,954
5.6 Residential mortgages	109,770	97	1,195	111,062
5.7 Other mortgages	14,996	855	685	16,536
5.8 Other loans and securities issued to other residents	40,748	36,560	107,105	184,414
6. Holdings of securities	32,461	110,636	66,672	209,768
6.1 Issued by MFIs	24,373	53,383	35,184	112,940
6.2 Issued by general government	8,089	57,252	31,487	96,828
6.2.1 Exchequer notes	517	4,326	441	5,284
6.2.2 Securities	7,571	52,927	31,047	91,544
7. Holdings of shares and other equity	8,532	2,745	5,491	16,769
7.1 Issued by MFIs	3,109	759	1,862	5,730
7.2 Issued by other residents (non-MFI, non-Government entities)	5,423	1,986	3,630	11,039
8. Fixed assets	1,252	—	—	1,252
9. Remaining assets	25,908	9,565	25,148	60,622
Total assets	626,323	248,065	447,387	1,321,775

Table C4: Credit Institutions: Retail Clearing: Aggregate Balance Sheet

€ million	30 November 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	26,749	—	4,416	31,165
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	96,493	8,872	135,708	241,072
3. Deposits from Central Bank	17,689	—	—	17,689
3.1 Short-term	17,689	—	—	17,689
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	2,518	12	3,411	5,942
5. Deposits from other residents (non-MFIs, non-Government entities)	111,884	3,436	16,874	132,194
5.1 Overnight: Current accounts	31,225	59	1,391	32,674
Demand accounts ^b	27,333	195	4,142	31,670
5.2 Agreed maturity: Up to and including 1 year	30,942	3,006	8,319	42,267
1 to 2 years	4,439	125	536	5,100
Over 2 years	7,083	16	2,218	9,316
5.3 Notice: Up to and including 3 months	10,855	36	269	11,160
Over 3 months	—	—	—	—
5.4 Repurchase agreements	8	—	—	8
6. Debt securities issued ^c	22,633	6,552	26,951	56,136
6.1 Up to and including 1 year	2,552	669	8,977	12,197
6.2 1 to 2 years	5,739	877	7,167	13,783
6.3 Over 2 years	14,343	5,006	10,806	30,155
7. Remaining liabilities	17,230	1,684	11,398	30,312
Total liabilities	295,198	20,556	198,757	514,511
Assets				
1. Holdings of notes and coin	816	—	8	824
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	95,913	1,553	97,956	195,422
3. Balances with Central Bank	5,490	—	—	5,490
3.1 Mandatory balances	5,490	—	—	5,490
3.2 Other	—	—	—	—
4. Loans to general government (central, regional and local)	427	—	3	430
5. Loans to other residents (non-MFI, non-Government entities)	202,872	6,061	34,189	243,122
5.1 Overdrafts	7,399	3	73	7,475
5.2 Repurchase agreements	27	—	—	27
5.3 Loans up to and including 1 year	27,324	23	283	27,630
5.4 Term/revolving loans	91,564	3,279	7,630	102,473
5.5 Instalment credit/hire-purchase/leases	1,786	—	7	1,794
5.6 Residential mortgages	53,207	42	611	53,859
5.7 Other mortgages	4,370	1	14	4,385
5.8 Other loans and securities issued to other residents	17,195	2,712	25,572	45,478
6. Holdings of securities	9,077	15,843	14,460	39,380
6.1 Issued by MFIs	5,167	13,145	11,357	29,669
6.2 Issued by general government	3,910	2,698	3,103	9,711
6.2.1 Exchequer notes	—	—	—	—
6.2.2 Securities	3,910	2,698	3,103	9,711
7. Holdings of shares and other equity	2,491	610	1,897	4,997
7.1 Issued by MFIs	1,384	—	1,109	2,493
7.2 Issued by other residents (non-MFI, non-Government entities)	1,106	610	788	2,504
8. Fixed assets	925	—	—	925
9. Remaining assets	18,199	1,692	4,030	23,921
Total assets	336,210	25,758	152,544	514,511

^a Other MFIs comprise financial institutions whose business is to receive deposits or close substitutes for deposits.

^b In line with Eurosystem requirements, demand accounts have been reclassified from deposits redeemable at notice to overnight deposits.

^c Money market paper is included in the category 'Up to and including one year'.

Table C4 — continued

€ million		31 December 2009			
Vis-à-vis		Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities					
1. Capital and reserves		26,188	—	4,372	30,561
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)		98,849	6,275	134,107	239,231
3. Deposits from Central Bank		24,740	—	—	24,740
3.1 Short-term		24,739	—	—	24,739
3.2 Other		1	—	—	1
4. Deposits from general government (central, regional and local)		2,319	13	1,435	3,767
5. Deposits from other residents (non-MFIs, non-Government entities)		111,863	3,619	16,250	131,732
5.1 Overnight: Current accounts		31,987	71	2,384	34,441
Demand accounts ^b		26,907	230	5,008	32,145
5.2 Agreed maturity: Up to and including 1 year		30,155	3,159	7,108	40,422
1 to 2 years		4,439	101	534	5,075
Over 2 years		7,211	20	939	8,170
5.3 Notice: Up to and including 3 months		11,159	39	277	11,475
Over 3 months		—	—	—	—
5.4 Repurchase agreements		5	—	—	5
6. Debt securities issued ^c		22,613	6,466	26,837	55,916
6.1 Up to and including 1 year		2,501	646	9,573	12,720
6.2 1 to 2 years		5,749	879	7,189	13,817
6.3 Over 2 years		14,363	4,941	10,074	29,378
7. Remaining liabilities		19,640	1,539	8,438	29,616
Total liabilities		306,212	17,912	191,439	515,563
Assets					
1. Holdings of notes and coin		1,197	—	9	1,205
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)		97,656	1,336	97,351	196,342
3. Balances with Central Bank		8,946	—	—	8,946
3.1 Mandatory balances		3,546	—	—	3,546
3.2 Other		5,400	—	—	5,400
4. Loans to general government (central, regional and local)		370	—	6	376
5. Loans to other residents (non-MFI, non-Government entities)		201,397	6,050	34,734	242,181
5.1 Overdrafts		7,228	3	68	7,299
5.2 Repurchase agreements		—	—	—	—
5.3 Loans up to and including 1 year		27,304	78	334	27,715
5.4 Term/revolving loans		90,473	3,250	7,577	101,300
5.5 Instalment credit/hire-purchase/leases		1,703	—	8	1,711
5.6 Residential mortgages		53,326	42	612	53,980
5.7 Other mortgages		4,311	1	16	4,327
5.8 Other loans and securities issued to other residents		17,053	2,675	26,121	45,849
6. Holdings of securities		9,093	15,461	13,894	38,447
6.1 Issued by MFIs		5,178	12,827	10,906	28,910
6.2 Issued by general government		3,915	2,634	2,988	9,537
6.2.1 Exchequer notes		—	—	—	—
6.2.2 Securities		3,915	2,634	2,988	9,537
7. Holdings of shares and other equity		2,492	626	1,915	5,033
7.1 Issued by MFIs		1,384	—	1,109	2,493
7.2 Issued by other residents (non-MFI, non-Government entities)		1,108	626	807	2,540
8. Fixed assets		895	—	—	895
9. Remaining assets		16,450	1,720	3,967	22,136
Total assets		338,495	25,192	151,876	515,563

Table C4 — continued

€ million	29 January 2010			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	27,706	—	5,090	32,797
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	100,759	9,310	132,172	242,241
3. Deposits from Central Bank	31,639	—	—	31,639
3.1 Short-term	31,639	—	—	31,639
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	2,382	184	1,816	4,381
5. Deposits from other residents (non-MFIs, non-Government entities)	110,618	2,798	14,651	128,067
5.1 Overnight: Current accounts	31,567	63	2,429	34,059
Demand accounts ^b	26,051	220	2,872	29,143
5.2 Agreed maturity: Up to and including 1 year	30,184	2,357	7,583	40,124
1 to 2 years	4,133	102	533	4,769
Over 2 years	7,236	15	949	8,199
5.3 Notice: Up to and including 3 months	11,437	40	285	11,763
Over 3 months	—	—	—	—
5.4 Repurchase agreements	10	—	—	10
6. Debt securities issued ^c	21,461	9,056	25,600	56,117
6.1 Up to and including 1 year	2,449	712	8,583	11,744
6.2 1 to 2 years	5,779	884	7,236	13,899
6.3 Over 2 years	13,233	7,460	9,781	30,474
7. Remaining liabilities	17,288	1,557	7,352	26,197
Total liabilities	311,853	22,904	186,682	521,439
Assets				
1. Holdings of notes and coin	731	—	9	740
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	98,804	1,973	99,610	200,387
3. Balances with Central Bank	11,768	—	—	11,768
3.1 Mandatory balances	4,368	—	—	4,368
3.2 Other	7,400	—	—	7,400
4. Loans to general government (central, regional and local)	373	—	6	379
5. Loans to other residents (non-MFI, non-Government entities)	199,410	6,106	35,161	240,678
5.1 Overdrafts	7,198	2	77	7,277
5.2 Repurchase agreements	42	—	—	42
5.3 Loans up to and including 1 year	27,350	80	347	27,777
5.4 Term/revolving loans	88,777	3,262	7,795	99,834
5.5 Instalment credit/hire-purchase/leases	1,673	—	8	1,681
5.6 Residential mortgages	53,204	42	610	53,857
5.7 Other mortgages	4,058	1	15	4,074
5.8 Other loans and securities issued to other residents	17,109	2,718	26,311	46,137
6. Holdings of securities	8,622	15,181	13,384	37,187
6.1 Issued by MFIs	4,496	12,354	10,570	27,420
6.2 Issued by general government	4,126	2,828	2,813	9,767
6.2.1 Exchequer notes	—	—	—	—
6.2.2 Securities	4,126	2,828	2,813	9,767
7. Holdings of shares and other equity	2,493	641	1,853	4,987
7.1 Issued by MFIs	1,384	—	1,057	2,441
7.2 Issued by other residents (non-MFI, non-Government entities)	1,108	641	796	2,546
8. Fixed assets	831	—	—	831
9. Remaining assets	18,856	1,778	3,849	24,483
Total assets	341,888	25,679	153,872	521,439

Table C5: Credit Institutions: Non-Clearing with Predominantly Domestic Business: Aggregate Balance Sheet

€ million	30 November 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	11,070	6,235	4,390	21,695
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	44,363	81,830	83,013	209,207
3. Deposits from Central Bank	50,010	—	—	50,010
3.1 Short-term	50,010	—	—	50,010
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	984	224	1,054	2,263
5. Deposits from other residents (non-MFIs, non-Government entities)	53,337	4,221	19,419	76,977
5.1 Overnight: Current accounts	2,913	115	83	3,111
Demand accounts ^b	10,345	234	5,494	16,073
5.2 Agreed maturity: Up to and including 1 year	27,501	2,323	5,874	35,699
1 to 2 years	5,336	93	179	5,608
Over 2 years	2,628	1,390	211	4,229
5.3 Notice: Up to and including 3 months	4,613	65	263	4,941
Over 3 months	—	—	—	—
5.4 Repurchase agreements	—	—	7,314	7,314
6. Debt securities issued ^c	16,706	7,778	23,871	48,355
6.1 Up to and including 1 year	1,333	2,048	5,732	9,113
6.2 1 to 2 years	7,067	359	5,772	13,197
6.3 Over 2 years	8,306	5,371	12,368	26,045
7. Remaining liabilities	13,747	1,928	6,817	22,491
Total liabilities	190,217	102,216	138,564	430,997
Assets				
1. Holdings of notes and coin	44	—	2	46
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	46,376	14,248	48,004	108,629
3. Balances with Central Bank Bank)	2,014	12	67	2,093
3.1 Mandatory balances	1,939	—	—	1,939
3.2 Other	75	12	67	154
4. Loans to general government (central, regional and local)	202	1,147	362	1,711
5. Loans to other residents (non-MFI, non-Government entities)	147,858 ^r	12,262	58,840	218,960 ^r
5.1 Overdrafts	1,469	1	13	1,483
5.2 Repurchase agreements	—	—	—	—
5.3 Loans up to and including 1 year	17,429	865	2,707	21,001
5.4 Term/revolving loans	40,789	2,910	19,064	62,763
5.5 Instalment credit/hire-purchase/leases	836	—	9	845
5.6 Residential mortgages	56,572	54	588	57,214
5.7 Other mortgages	11,282 ^r	659	620	12,561 ^r
5.8 Other loans and securities issued to other residents	19,481	7,772	35,840	63,093
6. Holdings of securities	21,875	38,003	17,147	77,026
6.1 Issued by MFIs	17,947	8,041	6,554	32,542
6.2 Issued by general government	3,928	29,962	10,593	44,484
6.2.1 Exchequer notes	717	—	15	732
6.2.2 Securities	3,211	29,962	10,579	43,751
7. Holdings of shares and other equity	6,341	630	1,581	8,552
7.1 Issued by MFIs	1,726	630	168	2,524
7.2 Issued by other residents (non-MFI, non-Government entities)	4,615	—	1,413	6,028
8. Fixed assets	519	—	—	519
9. Remaining assets	5,026 ^r	2,407	6,029	13,462 ^r
Total assets	230,255	68,708	132,033	430,997

^a Other MFIs comprise financial institutions whose business is to receive deposits or close substitutes for deposits.

^b In line with Eurosystem requirements, demand accounts have been reclassified from deposits redeemable at notice to overnight deposits.

^c Money market paper is included in the category 'Up to and including one year'.

Table C5 — continued

€ million	31 December 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	10,592	6,701	4,402	21,695
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	44,721	81,567	79,182	205,470
3. Deposits from Central Bank	54,914	—	—	54,914
3.1 Short-term	54,914	—	—	54,914
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	957	171	419	1,546
5. Deposits from other residents (non-MFIs, non-Government entities)	53,126	4,027	19,199	76,351
5.1 Overnight: Current accounts	3,128	148	108	3,384
Demand accounts ^b	10,367	234	5,672	16,273
5.2 Agreed maturity: Up to and including 1 year	26,851	2,208	5,508	34,567
1 to 2 years	5,404	14	181	5,599
Over 2 years	2,658	1,390	327	4,375
5.3 Notice: Up to and including 3 months	4,716	31	266	5,014
Over 3 months	—	—	—	—
5.4 Repurchase agreements	—	1	7,138	7,138
6. Debt securities issued ^c	16,249	7,449	23,411	47,109
6.1 Up to and including 1 year	1,186	1,982	5,192	8,360
6.2 1 to 2 years	6,725	315	5,789	12,828
6.3 Over 2 years	8,338	5,152	12,430	25,921
7. Remaining liabilities	18,031	1,860	7,034	26,925
Total liabilities	198,589	101,775	133,647	434,011
Assets				
1. Holdings of notes and coin	111	—	4	115
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	49,667	11,463	49,240	110,369
3. Balances with Central Bank	3,979	12	67	4,058
3.1 Mandatory balances	2,879	—	—	2,879
3.2 Other	1,100	12	67	1,179
4. Loans to general government (central, regional and local)	202	1,150	374	1,726
5. Loans to other residents (non-MFI, non-Government entities)	145,912	12,359	60,689	218,960
5.1 Overdrafts	1,467	1	8	1,475
5.2 Repurchase agreements	—	3	—	3
5.3 Loans up to and including 1 year	18,522	897	2,805	22,224
5.4 Term/revolving loans	37,975	3,008	19,843	60,827
5.5 Instalment credit/hire-purchase/leases	797	—	8	805
5.6 Residential mortgages	56,591	55	585	57,231
5.7 Other mortgages	11,160	654	624	12,438
5.8 Other loans and securities issued to other residents	19,400	7,742	36,815	63,957
6. Holdings of securities	21,998	39,027	17,111	78,136
6.1 Issued by MFIs	18,003	8,073	6,506	32,581
6.2 Issued by general government	3,995	30,954	10,605	45,555
6.2.1 Exchequer notes	717	—	15	732
6.2.2 Securities	3,278	30,954	10,590	44,823
7. Holdings of shares and other equity	5,955	630	1,844	8,429
7.1 Issued by MFIs	1,725	630	173	2,527
7.2 Issued by other residents (non-MFI, non-Government entities)	4,230	—	1,672	5,902
8. Fixed assets	390	—	—	390
9. Remaining assets	4,383	2,277	5,167	11,827
Total assets	232,598	66,918	134,495	434,011

Table C5 — continued

€ million	29 January 2010			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	11,112	6,552	4,425	22,088
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	45,215	79,972	81,982	207,168
3. Deposits from Central Bank	53,964	—	—	53,964
3.1 Short-term	53,964	—	—	53,964
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	682	135	918	1,735
5. Deposits from other residents (non-MFIs, non-Government entities)	53,336	4,243	18,171	75,750
5.1 Overnight: Current accounts	3,170	157	80	3,407
Demand accounts ^b	10,691	242	5,789	16,723
5.2 Agreed maturity: Up to and including 1 year	26,524	2,407	4,672	33,603
1 to 2 years	5,525	13	181	5,719
Over 2 years	2,639	1,390	178	4,208
5.3 Notice: Up to and including 3 months	4,785	34	273	5,092
Over 3 months	—	—	—	—
5.4 Repurchase agreements	—	1	6,998	6,998
6. Debt securities issued ^c	16,709	7,178	24,473	48,360
6.1 Up to and including 1 year	1,104	1,694	6,100	8,897
6.2 1 to 2 years	6,731	315	5,866	12,912
6.3 Over 2 years	8,874	5,169	12,507	26,551
7. Remaining liabilities	18,226	1,926	7,828	27,981
Total liabilities	199,245	100,005	137,797	437,047
Assets				
1. Holdings of notes and coin	70	—	3	73
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	51,540	12,332	48,331	112,204
3. Balances with Central Bank	3,212	12	70	3,294
3.1 Mandatory balances	2,462	—	—	2,462
3.2 Other	750	12	70	832
4. Loans to general government (central, regional and local)	202	1,150	358	1,710
5. Loans to other residents (non-MFI, non-Government entities)	145,521	12,136	62,225	219,881
5.1 Overdrafts	1,535	1	15	1,552
5.2 Repurchase agreements	—	3	—	3
5.3 Loans up to and including 1 year	18,892	1,635	2,981	23,509
5.4 Term/revolving loans	37,620	2,190	20,252	60,062
5.5 Instalment credit/hire-purchase/leases	782	—	8	790
5.6 Residential mortgages	56,566	54	585	57,206
5.7 Other mortgages	10,938	811	670	12,419
5.8 Other loans and securities issued to other residents	19,188	7,441	37,713	64,342
6. Holdings of securities	22,322	38,552	17,218	78,091
6.1 Issued by MFIs	18,502	7,718	6,355	32,575
6.2 Issued by general government	3,820	30,833	10,863	45,516
6.2.1 Exchequer notes	517	—	15	533
6.2.2 Securities	3,302	30,833	10,848	44,983
7. Holdings of shares and other equity	6,004	629	2,103	8,736
7.1 Issued by MFIs	1,724	629	222	2,576
7.2 Issued by other residents (non-MFI, non-Government entities)	4,279	—	1,881	6,160
8. Fixed assets	354	—	—	354
9. Remaining assets	4,453	2,309	5,942	12,704
Total assets	233,677	67,120	136,250	437,047

Table C6: Credit Institutions: Non-Clearing with Predominantly Foreign Business: Aggregate Balance Sheet

€ million	30 November 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	16,067	7,814	6,498	30,379
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	25,700	86,003	41,584	153,287
3. Deposits from Central Bank	10,285	—	—	10,285
3.1 Short-term	10,285	—	—	10,285
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	—	426	341	767
5. Deposits from other residents (non-MFIs, non-Government entities)	7,002	25,445	28,721	61,167
5.1 Overnight: Current accounts	1,047	219	7,066	8,332
Demand accounts ^b	2,091	1,266	10,229	13,587
5.2 Agreed maturity: Up to and including 1 year	3,514	6,329	9,760	19,603
1 to 2 years	52	116	113	281
Over 2 years	225	17,038	478	17,741
5.3 Notice: Up to and including 3 months	71	27	192	291
Over 3 months	—	—	—	—
5.4 Repurchase agreements	—	450	883	1,333
6. Debt securities issued ^c	12,001	14,423	48,684	75,107
6.1 Up to and including 1 year	671	2,774	18,981	22,426
6.2 1 to 2 years	—	771	1,657	2,428
6.3 Over 2 years	11,330	10,877	28,046	50,253
7. Remaining liabilities	5,798	3,662	16,971	26,431
Total liabilities	76,853	137,772	142,798	357,423
Assets				
1. Holdings of notes and coin	—	—	—	—
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	24,267	34,869	31,463	90,598
3. Balances with Central Bank	3,184	83	—	3,267
3.1 Mandatory balances	3,184	—	—	3,184
3.2 Other	—	83	—	83
4. Loans to general government (central, regional and local)	744	9,261	3,684	13,690
5. Loans to other residents (non-MFI, non-Government entities)	15,439	48,184	67,267	130,890
5.1 Overdrafts	54	28	289	370
5.2 Repurchase agreements	29	—	10,659	10,688
5.3 Loans up to and including 1 year	6,818	1,077	2,496	10,391
5.4 Term/revolving loans	3,956	19,856	8,542	32,353
5.5 Instalment credit/hire-purchase/leases	6	256	177	439
5.6 Residential mortgages	—	—	—	—
5.7 Other mortgages	—	43	—	43
5.8 Other loans and securities issued to other residents	4,576	26,924	45,105	76,605
6. Holdings of securities	1,778	55,120	36,784	93,682
6.1 Issued by MFIs	1,485	33,250	19,082	53,816
6.2 Issued by general government	293	21,871	17,702	39,866
6.2.1 Exchequer notes	150	2,449	900	3,498
6.2.2 Securities	143	19,422	16,803	36,368
7. Holdings of shares and other equity	42	1,224	1,443	2,710
7.1 Issued by MFIs	—	135	565	699
7.2 Issued by other residents (non-MFI, non-Government entities)	42	1,090	879	2,010
8. Fixed assets	62	—	—	62
9. Remaining assets	2,669	5,231	14,625	22,524
Total assets	48,186	153,972	155,266	357,423

^a Other MFIs comprise financial institutions whose business is to receive deposits or close substitutes for deposits.

^b In line with Eurosystem requirements, demand accounts have been reclassified from deposits redeemable at notice to overnight deposits.

^c Money market paper is included in the category 'Up to and including one year'.

Table C6 — continued

€ million		31 December 2009			
Vis-à-vis		Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities					
1. Capital and reserves		17,984	8,675	6,689	33,348
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)		27,657	77,834	42,315	147,807
3. Deposits from Central Bank		11,245	—	—	11,245
3.1 Short-term		11,245	—	—	11,245
3.2 Other		—	—	—	—
4. Deposits from general government (central, regional and local)		—	410	346	757
5. Deposits from other residents (non-MFIs, non-Government entities)		6,316	25,908	31,680	63,904
5.1 Overnight: Current accounts		892	521	7,733	9,146
Demand accounts ^b		2,194	1,298	11,736	15,228
5.2 Agreed maturity: Up to and including 1 year		2,904	6,206	10,510	19,620
1 to 2 years		54	126	112	292
Over 2 years		198	17,200	496	17,893
5.3 Notice: Up to and including 3 months		74	8	209	291
Over 3 months		—	—	—	—
5.4 Repurchase agreements		—	550	884	1,434
6. Debt securities issued ^c		11,892	13,059	51,201	76,153
6.1 Up to and including 1 year		629	3,523	21,265	25,417
6.2 1 to 2 years		—	446	1,585	2,032
6.3 Over 2 years		11,264	9,090	28,351	48,704
7. Remaining liabilities		4,425	3,700	15,772	23,898
Total liabilities		79,520	129,587	148,004	357,111
Assets					
1. Holdings of notes and coin		—	—	—	—
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)		23,905	35,237	33,487	92,629
3. Balances with Central Bank		3,012	86	—	3,098
3.1 Mandatory balances		2,852	—	—	2,852
3.2 Other		160	86	—	246
4. Loans to general government (central, regional and local)		737	9,200	3,774	13,710
5. Loans to other residents (non-MFI, non-Government entities)		18,300	45,390	66,735	130,425
5.1 Overdrafts		35	36	441	512
5.2 Repurchase agreements		43	—	11,256	11,299
5.3 Loans up to and including 1 year		9,449	1,133	2,623	13,204
5.4 Term/revolving loans		4,202	17,025	8,697	29,923
5.5 Instalment credit/hire-purchase/leases		6	254	179	439
5.6 Residential mortgages		—	—	—	—
5.7 Other mortgages		—	43	—	43
5.8 Other loans and securities issued to other residents		4,566	26,899	43,539	75,003
6. Holdings of securities		1,505	55,726	35,765	92,996
6.1 Issued by MFIs		1,362	33,190	18,373	52,924
6.2 Issued by general government		143	22,536	17,393	40,072
6.2.1 Exchequer notes		—	3,500	417	3,917
6.2.2 Securities		143	19,036	16,975	36,155
7. Holdings of shares and other equity		43	1,220	1,530	2,793
7.1 Issued by MFIs		—	130	582	712
7.2 Issued by other residents (non-MFI, non-Government entities)		43	1,091	948	2,081
8. Fixed assets		65	—	—	65
9. Remaining assets		2,677	5,205	13,513	21,396
Total assets		50,244	152,065	154,803	357,111

Table C6 — continued

€ million	29 January 2010			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	18,426	8,675	6,927	34,028
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	29,116	80,016	38,126	147,258
3. Deposits from Central Bank	10,170	—	—	10,170
3.1 Short-term	10,170	—	—	10,170
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	1	152	336	490
5. Deposits from other residents (non-MFIs, non-Government entities)	7,020	26,973	33,155	67,148
5.1 Overnight: Current accounts	1,011	320	7,410	8,741
Demand accounts ^b	2,205	1,566	13,020	16,791
5.2 Agreed maturity: Up to and including 1 year	3,518	6,846	11,084	21,449
1 to 2 years	7	126	40	172
Over 2 years	206	17,445	520	18,171
5.3 Notice: Up to and including 3 months	73	20	216	308
Over 3 months	—	—	—	—
5.4 Repurchase agreements	—	650	866	1,516
6. Debt securities issued ^c	11,935	11,997	54,178	78,111
6.1 Up to and including 1 year	667	1,392	24,072	26,130
6.2 1 to 2 years	—	660	1,403	2,063
6.3 Over 2 years	11,269	9,945	28,703	49,918
7. Remaining liabilities	4,481	4,141	17,462	26,085
Total liabilities	81,150	131,955	150,184	363,289
Assets				
1. Holdings of notes and coin	—	—	—	—
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	24,745	37,117	33,425	95,287
3. Balances with Central Bank	2,945	89	—	3,034
3.1 Mandatory balances	2,369	—	—	2,369
3.2 Other	576	89	—	665
4. Loans to general government (central, regional and local)	734	9,254	3,872	13,860
5. Loans to other residents (non-MFI, non-Government entities)	18,113	44,950	67,007	130,069
5.1 Overdrafts	37	28	559	624
5.2 Repurchase agreements	34	—	11,729	11,763
5.3 Loans up to and including 1 year	9,547	1,203	2,640	13,390
5.4 Term/revolving loans	4,037	16,996	8,798	29,830
5.5 Instalment credit/hire-purchase/leases	7	278	199	483
5.6 Residential mortgages	—	—	—	—
5.7 Other mortgages	—	43	—	43
5.8 Other loans and securities issued to other residents	4,452	26,401	43,082	73,935
6. Holdings of securities	1,517	56,903	36,071	94,491
6.1 Issued by MFIs	1,374	33,311	18,259	52,944
6.2 Issued by general government	143	23,591	17,812	41,546
6.2.1 Exchequer notes	—	4,326	426	4,751
6.2.2 Securities	143	19,266	17,386	36,795
7. Holdings of shares and other equity	36	1,475	1,536	3,046
7.1 Issued by MFIs	—	130	583	712
7.2 Issued by other residents (non-MFI, non-Government entities)	36	1,345	953	2,334
8. Fixed assets	68	—	—	68
9. Remaining assets	2,600	5,479	15,356	23,435
Total assets	50,758	155,266	157,266	363,289

Table C7: Credit Institutions: Mortgage Lenders: Aggregate Balance Sheet

€ million	30 November 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	34,423	2,747	6,472	43,642
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	127,051	18,396	164,148	309,596
3. Deposits from Central Bank	34,059	—	—	34,059
3.1 Short-term	34,059	—	—	34,059
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	3,196	28	3,851	7,075
5. Deposits from other residents (non-MFIs, non-Government entities)	149,416	5,993	24,161	179,569
5.1 Overnight: Current accounts	33,581	64	1,424	35,069
Demand accounts ^b	33,631	209	9,231	43,072
5.2 Agreed maturity: Up to and including 1 year	48,500	4,170	10,091	62,761
1 to 2 years	9,411	135	663	10,209
Over 2 years	9,479	1,365	2,330	13,174
5.3 Notice: Up to and including 3 months	14,804	49	422	15,276
Over 3 months	—	—	—	—
5.4 Repurchase agreements	8	—	—	8
6. Debt securities issued ^c	39,303	11,434	34,064	84,801
6.1 Up to and including 1 year	3,872	1,741	12,126	17,740
6.2 1 to 2 years	12,805	1,197	7,301	21,303
6.3 Over 2 years	22,626	8,495	14,637	45,758
7. Remaining liabilities	19,101	1,942	12,095	33,137
Total liabilities	406,550	40,540	244,790	691,879
Assets				
1. Holdings of notes and coin	856	—	11	867
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	110,247	2,375	106,198	218,820
3. Balances with Central Bank	6,756	—	—	6,756
3.1 Mandatory balances	6,681	—	—	6,681
3.2 Other	75	—	—	75
4. Loans to general government (central, regional and local)	554	—	3	557
5. Loans to other residents (non-MFI, non-Government entities)	317,769 ^r	7,345	49,340	374,454 ^r
5.1 Overdrafts	8,715	3	75	8,793
5.2 Repurchase agreements	27	—	—	27
5.3 Loans up to and including 1 year	29,935	112	392	30,438
5.4 Term/revolving loans	115,679	3,617	10,451	129,747
5.5 Instalment credit/hire-purchase/leases	2,511	—	16	2,527
5.6 Residential mortgages	109,621	74	1,197	110,892
5.7 Other mortgages	15,652 ^r	660	634	16,946 ^r
5.8 Other loans and securities issued to other residents	35,631	2,879	36,575	75,084
6. Holdings of securities	16,751	19,028	16,411	52,190
6.1 Issued by MFIs	10,015	14,743	13,242	38,000
6.2 Issued by general government	6,736	4,285	3,169	14,190
6.2.1 Exchequer notes	707	—	—	707
6.2.2 Securities	6,029	4,285	3,169	13,483
7. Holdings of shares and other equity	7,075	611	1,943	9,628
7.1 Issued by MFIs	1,670	1	1,129	2,800
7.2 Issued by other residents (non-MFI, non-Government entities)	5,404	610	814	6,828
8. Fixed assets	1,418	—	—	1,418
9. Remaining assets	20,471 ^r	1,812	4,905	27,188 ^r
Total assets	481,897	31,172	178,811	691,879

^a Other MFIs comprise financial institutions whose business is to receive deposits or close substitutes for deposits.

^b In line with Eurosystem requirements, demand accounts have been reclassified from deposits redeemable at notice to overnight deposits.

^c Money market paper is included in the category 'Up to and including one year'.

Table C7 — continued

€ million	31 December 2009			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	33,580	3,487	6,429	43,496
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	126,818	15,258	158,882	300,958
3. Deposits from Central Bank	47,014	—	—	47,014
3.1 Short-term	47,013	—	—	47,013
3.2 Other	1	—	—	1
4. Deposits from general government (central, regional and local)	2,991	22	1,601	4,613
5. Deposits from other residents (non-MFIs, non-Government entities)	149,741	6,019	23,740	179,500
5.1 Overnight: Current accounts	34,425	76	2,418	36,920
Demand accounts ^b	33,109	243	10,225	43,577
5.2 Agreed maturity: Up to and including 1 year	47,793	4,165	8,952	60,910
1 to 2 years	9,551	113	664	10,329
Over 2 years	9,636	1,369	1,049	12,054
5.3 Notice: Up to and including 3 months	15,221	52	432	15,706
Over 3 months	—	—	—	—
5.4 Repurchase agreements	5	—	—	5
6. Debt securities issued ^c	38,815	11,043	33,843	83,700
6.1 Up to and including 1 year	3,672	1,657	12,629	17,958
6.2 1 to 2 years	12,474	1,174	7,328	20,976
6.3 Over 2 years	22,669	8,211	13,886	44,766
7. Remaining liabilities	23,263	1,766	9,063	34,093
Total liabilities	422,222	37,596	233,558	693,375
Assets				
1. Holdings of notes and coin	1,299	—	12	1,311
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	114,192	1,878	105,550	221,619
3. Balances with Central Bank	10,945	—	—	10,945
3.1 Mandatory balances	5,545	—	—	5,545
3.2 Other	5,400	—	—	5,400
4. Loans to general government (central, regional and local)	497	—	6	503
5. Loans to other residents (non-MFI, non-Government entities)	313,475	7,336	50,204	371,016
5.1 Overdrafts	8,558	3	71	8,632
5.2 Repurchase agreements	—	—	—	—
5.3 Loans up to and including 1 year	29,617	81	445	30,143
5.4 Term/revolving loans	112,288	3,682	10,447	126,417
5.5 Instalment credit/hire-purchase/leases	2,392	—	16	2,408
5.6 Residential mortgages	109,759	75	1,195	111,030
5.7 Other mortgages	15,471	655	640	16,766
5.8 Other loans and securities issued to other residents	35,390	2,840	37,390	75,620
6. Holdings of securities	16,898	19,665	15,858	52,421
6.1 Issued by MFIs	10,086	14,499	12,800	37,385
6.2 Issued by general government	6,812	5,167	3,058	15,036
6.2.1 Exchequer notes	707	—	—	707
6.2.2 Securities	6,105	5,167	3,058	14,329
7. Holdings of shares and other equity	6,686	627	1,962	9,275
7.1 Issued by MFIs	1,669	1	1,129	2,799
7.2 Issued by other residents (non-MFI, non-Government entities)	5,018	626	833	6,476
8. Fixed assets	1,263	—	—	1,263
9. Remaining assets	18,346	1,873	4,803	25,021
Total assets	483,601	31,379	178,395	693,375

Table C7 — continued

€ million	29 January, 2010			
Vis-à-vis	Irish residents	Other Monetary Union residents	Rest of World residents	Total
Liabilities				
1. Capital and reserves	34,932	3,210	7,167	45,309
2. Deposits from credit institutions and other MFIs ^a (excluding Central Bank)	128,934	17,263	158,678	304,874
3. Deposits from Central Bank	52,963	—	—	52,963
3.1 Short-term	52,963	—	—	52,963
3.2 Other	—	—	—	—
4. Deposits from general government (central, regional and local)	2,839	184	2,148	5,170
5. Deposits from other residents (non-MFIs, non-Government entities)	148,575	5,162	22,317	176,054
5.1 Overnight: Current accounts	33,979	69	2,462	36,510
Demand accounts ^b	32,435	236	8,243	40,914
5.2 Agreed maturity: Up to and including 1 year	47,568	3,323	9,452	60,344
1 to 2 years	9,332	114	660	10,106
Over 2 years	9,640	1,363	1,056	12,060
5.3 Notice: Up to and including 3 months	15,610	56	444	16,110
Over 3 months	—	—	—	—
5.4 Repurchase agreements	10	—	—	10
6. Debt securities issued ^c	38,145	13,587	32,650	84,382
6.1 Up to and including 1 year	3,545	1,664	11,610	16,819
6.2 1 to 2 years	12,510	1,179	7,443	21,132
6.3 Over 2 years	22,090	10,744	13,597	46,431
7. Remaining liabilities	21,295	1,774	7,934	31,003
Total liabilities	427,682	41,180	230,893	699,756
Assets				
1. Holdings of notes and coin	795	—	12	807
2. Loans to credit institutions and other MFIs ^a (excluding Central Bank)	115,546	3,181	108,109	226,837
3. Balances with Central Bank	13,745	—	2	13,747
3.1 Mandatory balances	5,595	—	—	5,595
3.2 Other	8,150	—	2	8,152
4. Loans to general government (central, regional and local)	501	—	6	506
5. Loans to other residents (non-MFI, non-Government entities)	310,704	7,557	50,934	369,195
5.1 Overdrafts	8,547	2	79	8,629
5.2 Repurchase agreements	42	—	—	42
5.3 Loans up to and including 1 year	29,771	243	677	30,692
5.4 Term/revolving loans	110,158	3,543	10,441	124,142
5.5 Instalment credit/hire-purchase/leases	2,350	—	16	2,367
5.6 Residential mortgages	109,614	75	1,194	110,883
5.7 Other mortgages	14,996	812	685	16,492
5.8 Other loans and securities issued to other residents	35,225	2,882	37,842	75,949
6. Holdings of securities	16,708	19,250	15,323	51,281
6.1 Issued by MFIs	9,856	13,904	12,438	36,198
6.2 Issued by general government	6,852	5,346	2,885	15,082
6.2.1 Exchequer notes	507	—	—	507
6.2.2 Securities	6,344	5,346	2,885	14,575
7. Holdings of shares and other equity	6,717	642	1,901	9,260
7.1 Issued by MFIs	1,668	1	1,078	2,747
7.2 Issued by other residents (non-MFI, non-Government entities)	5,049	641	823	6,513
8. Fixed assets	1,163	—	—	1,163
9. Remaining assets	20,525	1,937	4,498	26,960
Total assets	486,404	32,568	180,783	699,756

Table C8: All Credit Institutions: Sectoral Distribution of Advances

€ million	Resident Non-Government Credit	
	September 2009	December 2009
1. Agriculture and forestry	5,210	4,933
1.1 Farming of cattle and other animals	1,948	1,807
1.2 Dairy farming	1,266	1,236
1.3 Other agricultural activities	1,746	1,641
1.4 Forestry and logging	251	249
2. Fishing	374	336
3. Mining and quarrying	454	415
4. Manufacturing	7,550	7,137
4.1 Food products derived from agricultural activities	2,632	2,383
4.1.1 Processing of meat	546	384
4.1.2 Processing of dairy products and other food products	2,085	1,999
4.2 Food (non-agricultural activities)/beverages/tobacco	672	864
4.3 Textiles, textile products, leather and leather products	86	83
4.4 Wood, pulp, paper products, publishing/printing	1,129	1,001
4.5 Chemicals, man-made fibres, rubber/plastic products	585	570
4.6 Machinery/equipment	684	672
4.7 Computers and office machinery	53	44
4.8 Other manufacturing	1,709	1,518
5. Electricity, gas and water supply	1,100	1,120
6. Construction	16,603	15,042
7. Wholesale/retail trade & repairs	12,965	12,591
7.1 Sale/maintenance/repair of vehicles; retail sale of fuel	2,110	2,021
7.2 Wholesale/commission trade (except vehicles)	2,930	2,816
7.3 Retail trade/repair of personal/household goods	6,659	6,511
7.4 Other wholesale/retail, not included elsewhere	1,266	1,243
8. Hotels and restaurants	11,214	10,905
8.1 Hotels	6,608	6,364
8.2 Restaurants	758	746
8.3 Public Houses	3,278	3,207
8.4 Other accommodation and catering	570	588
9. Transport, storage and communications	3,225	3,005

Table C8 — continued

€ million	Resident Non-Government Credit	
	September 2009	December 2009
10. Financial intermediation	86,206	82,676
10.1 Financial leasing	1,874	1,778
10.2 Non-bank credit grantors, including credit unions	13,276	13,106
10.3 Investment and unit trusts	309	335
10.4 Holding companies	1,422	1,739
10.5 Hire-purchase finance companies	1,170	1,064
10.6 Life insurance companies	3,758	3,868
10.7 Pension funds	240	242
10.8 Non-life insurance companies	589	591
10.9 Security broker/Fund management	8,846	8,385
10.10 Other financial intermediation	54,721	51,568
11. Real estate and business activities	95,146	93,845
11.1 Real estate activities	88,050	87,280
11.2 Computer and related services	199	161
11.3 Research and development	34	33
11.4 Legal, accounting and consulting	1,844	1,846
11.5 Advertising	58	54
11.6 Other business activities	4,962	4,471
12. Education (Schools and Colleges)	856	851
13. Health and social work	2,660	2,679
14. Other Community, Social & Personal Services	2,843	2,832
14.1 Recreational, cultural, sporting and other service activities	2,667	2,656
14.2 Churches/religious organisations and charities	176	176
15. Personal (private households) and charities	130,842	129,992
15.1 House mortgage finance	109,764	109,917
15.1.1 Principal dwelling houses	78,615	78,499
15.1.2 Buy-to-Let residential properties	30,045	30,089
15.1.3 Holiday homes/second houses	1,104	1,328
15.2 Other housing finance	644	664
15.3 Finance for investment	2,796	2,323
15.4 Other personal	17,638	17,087
Total	377,248	368,359

Table C9: Credit Institutions: Sectoral Distribution of Advances and Deposits

€ million	September 2009		
	Non-resident non-Government credit	Non-resident non-Government deposits	Resident non-Government deposits
1. Agriculture and Forestry	236	31	2,329
2. Fishing	5	0	97
3. Mining and quarrying	586	204	397
4. Manufacturing	6,315	2,882	5,963
5. Electricity, gas and water supply	9,113	1,468	997
6. Construction	3,438	507	3,454
7. Wholesale/retail trade & repairs	1,883	2,422	4,048
8. Hotels and restaurants	1,343	165	702
9. Transport, storage and communications	18,427	1,878	3,938
10. Financial intermediation	158,099	90,185	45,245
11. Real estate and business activities	23,826	3,505	14,940
12. Education (Schools and Colleges)	1,561	62	1,675
13. Health and social work	2,891	124	996
14. Other Community, Social & Personal Services	1,194	1,318	4,826
15. Personal (private households)	4,621	4,109	80,804
Total	233,540	108,858	170,411

€ million	December 2009		
	Non-resident non-Government credit	Non-resident non-Government deposits	Resident non-Government deposits
1. Agriculture and Forestry	194	42	2,496
2. Fishing	5	0	112
3. Mining and quarrying	525	167	294
4. Manufacturing	6,164	3,049	5,989
5. Electricity, gas and water supply	9,603	1,215	898
6. Construction	3,202	473	3,578
7. Wholesale/retail trade & repairs	1,738	2,386	4,591
8. Hotels and restaurants	1,232	132	655
9. Transport, storage and communications	18,084	1,979	3,766
10. Financial intermediation	155,421	81,751	45,106
11. Real estate and business activities	23,617	3,322	14,781
12. Education (Schools and Colleges)	1,538	53	1,666
13. Health and social work	3,172	106	894
14. Other Community, Social & Personal Services	991	1,407	4,800
15. Personal (private households)	4,296	3,985	81,653
Total	229,783	100,068	171,279

Table C10: All Credit Institutions: International Business: Analysis by Currency, Sector and Maturity

€ million	30 Sept 2009	31 Dec 2009
Assets		
1. Analysis by currency		
<i>Irish residents in non-euro</i>	68,555	69,630
US dollar	29,816	30,350
Sterling	29,093	29,328
Other	9,646	9,952
<i>Non-residents in non-euro</i>	359,817	358,210
US dollar	145,474	145,654
Sterling	165,762	169,088
Other	48,581	43,467
<i>Non-Residents in euro</i>	305,873	292,605
2. Analysis by sector		
<i>Irish residents in non-euro</i>		
Monetary financial institutions	28,535	28,775
Non-monetary financial institutions	40,020	40,855
<i>Non-residents in non-euro</i>		
Monetary financial institutions	173,256	173,457
non-monetary financial institutions	186,561	184,753
<i>Non-Residents in euro</i>		
Monetary financial institutions	155,188	144,645
non-monetary financial institutions	150,685	147,960
3. Total international business	734,245	720,445

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, and some data for September 2009 have been revised.

€ million	30 Sept 2009	31 Dec 2009
Liabilities		
1. Analysis by currency		
<i>Irish residents in non-euro</i>	48,653	49,076
US dollar	23,372 ^r	22,208
Sterling	15,343 ^r	16,327
Other	9,938 ^r	10,541
<i>Non-residents in non-euro</i>	331,062	309,450
US dollar	173,584 ^r	156,005
Sterling	123,025 ^r	122,276
Other	34,453 ^r	31,169
<i>Non-Residents in euro</i>	356,102	348,756
2. Analysis by sector		
<i>Irish residents in non-euro</i>		
Monetary financial institutions	30,488	30,762
Non-monetary financial institutions	18,165	18,314
<i>Non-residents in non-euro</i>		
Monetary financial institutions	247,611	233,569
non-monetary financial institutions	83,451	75,881
<i>Non-Residents in euro</i>		
Monetary financial institutions	293,701	290,932
non-monetary financial institutions	62,401	57,824
3. Total international business	735,818	707,283

Table C11: 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
Return dates	2009						
	30 September						
1. EU countries	327,270	285,927	613,197	286,228	283,671	569,899	+63,199
MU countries	190,631	105,327	295,958	219,006	97,870	316,876	-1,017
Austria	2,829	575	3,404	3,152	1,017	4,168	-764
Belgium	46,897	13,005	59,902	5,873	2,037	7,910	+51,992
Luxembourg	2,817	936	3,753	3,515	2,564	6,078	-2,325
Finland	19	60	80	1,411	564	1,974	-1,895
France	29,625	2,692	32,316	23,615	2,523	26,138	+6,178
Germany	83,325	23,705	107,029	31,615	3,975	35,589	+71,440
Greece	138	105	243	6,859	518	7,377	-7,134
Ireland	—	48,653	48,653	—	68,555	68,555	—
Italy	11,919	1,372	13,291	73,415	7,119	80,534	-67,244
Netherlands	8,971	12,536	21,506	19,149	4,607	23,756	-2,250
Portugal	198	188	386	5,860	10	5,870	-5,484
Spain	2,985	660	3,644	40,148	1,906	42,055	-38,411
Other MU ^b	909	842	1,750	4,395	2,475	6,870	-5,120
Other EU	136,639	180,600	317,239	67,222	185,801	253,023	+64,216
Denmark	10,152	687	10,839	6,544	4,253	10,797	+42
Sweden	352	764	1,116	1,711	2,603	4,314	-3,198
United Kingdom	125,409	178,305	303,714	52,348	173,334	225,682	+78,032
Other EU	727	844	1,570	6,620	5,611	12,231	-10,660
2. Other Europe	3,506	8,571	12,077	2,930	10,736	13,666	-1,589
Switzerland	2,777	7,692	10,469	415	6,169	6,585	+3,884
Other Europe	728	879	1,608	2,515	4,567	7,081	-5,474
3. Other Industrial Countries	17,839	58,898	76,737	14,049	116,023	130,072	-53,336
Australia, New Zealand, South Africa	344	1,039	1,383	2,826	5,995	8,821	-7,438
Canada	847	8,624	9,471	1,946	7,066	9,012	+459
Japan	65	310	375	571	10,534	11,104	-10,730
United States	16,583	48,925	65,508	8,706	92,429	101,135	-35,627
4. Offshore Centres	4,909	22,107	27,016	886	10,351	11,238	+15,778
5. Other	2,578	4,213	6,791	1,779	7,590	9,369	-2,578
6. Total international business	356,102	379,716	735,818	305,873	428,372	734,245	+21,474

^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* Slovenia, Cyprus, Malta and the Czech Republic are not statistically significant.

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.

Liabilities			Assets			
Denominated in:			Denominated in:			
Euro	Non-euro	Total	Euro	Non-euro	Total	Net external liabilities ^a
2009						
31 December						
316,552	272,346	588,899	272,710	284,646	557,355	+52,097
183,331	92,921	276,252	206,413	97,431	303,843	-7,037
1,912	550	2,463	3,400	1,029	4,429	-1,966
42,378	12,705	55,083	6,552	3,855	10,407	+44,676
3,023	865	3,887	5,812	2,378	8,190	-4,303
93	40	133	1,297	481	1,778	-1,645
27,351	2,286	29,637	21,950	3,222	25,173	+4,464
93,324	13,333	106,657	30,621	3,551	34,172	+72,486
8	25	33	5,703	434	6,137	-6,104
—	49,076	49,076	—	69,630	69,630	—
4,205	617	4,821	64,570	6,591	71,162	-66,340
7,115	12,007	19,123	18,146	2,948	21,094	-1,972
155	105	260	5,853	15	5,868	-5,608
2,857	600	3,457	39,045	2,285	41,330	-37,873
910	712	1,621	3,462	1,011	4,473	-2,852
133,222	179,425	312,647	66,297	187,215	253,512	+59,134
6,834	523	7,357	3,771	1,608	5,379	+1,978
118	292	410	1,569	2,013	3,581	-3,171
125,855	178,272	304,127	54,503	179,879	234,381	+69,746
415	337	753	6,455	3,716	10,171	-9,418
3,304	7,116	10,420	3,418	11,869	15,287	-4,866
2,538	6,650	9,188	292	7,042	7,335	+1,853
766	466	1,232	3,126	4,826	7,952	-6,720
20,709	56,735	77,445	13,740	113,116	126,856	-49,412
202	1,242	1,443	2,736	5,847	8,584	-7,141
1,123	8,381	9,503	1,880	7,760	9,639	-136
68	275	343	580	11,557	12,137	-11,794
19,317	46,838	66,155	8,545	87,952	96,497	-30,341
6,068	19,630	25,698	779	10,196	10,975	+14,722
2,123	2,698	4,822	1,958	8,013	9,971	-5,149
348,756	358,526	707,283	292,605	427,840	720,445	+7,392

Table C13: 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						
30 September	30,422	10,125	5,426	2,632	2,067	40,547
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 ^r	6,409 ^r	2,833 ^r	113,637
30 June	95,777	18,083	9,243 ^r	6,160 ^r	2,680 ^r	113,860
30 September	93,510	16,254	7,781	5,913	2,559	109,764
31 December	94,844	15,073	6,906	5,715	2,452	109,917

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 C14: Credit Card Statistics

Vis-à-vis Irish Residents	No. of credit cards in issue ^a	<i>of which:</i>		New spending during month ^b	<i>of which:</i>	
End-month	(000)	Personal cards	Business cards	€ million	Personal cards	Business cards
2007						
January	2,173	2,043	130	1,162.4	1,022.4	140.0
February	2,185	2,053	132	1,008.1	873.0	135.1
March	2,194	2,060	134	1,115.1	967.8	147.3
April	2,210	2,075	135	1,131.2	991.5	139.7
May	2,217	2,081	136	1,191.3	1,038.0	153.3
June	2,229	2,091	138	1,133.5	991.5	142.0
July	2,241	2,101	139	1,255.7	1,106.8	148.9
August	2,250	2,109	141	1,221.5	1,077.5	144.0
September	2,262	2,120	142	1,103.3	957.8	145.5
October	2,276	2,132	144	1,234.6	1,067.7	166.9
November	2,294	2,149	146	1,207.0	1,047.5	159.6
December	2,303	2,156	147	1,297.6	1,136.2	161.4
2008						
January	2,311	2,164	148	1,199.5	1,048.7	150.8
February	2,326	2,176	150	1,092.6	938.2	154.5
March	2,335	2,184	151	1,146.1	999.6	146.4
April	2,347	2,195	152	1,183.3	1,020.0	163.3
May	2,357	2,204	153	1,171.5	1,016.2	155.3
June	2,365	2,211	154	1,164.8	1,013.6	151.2
July	2,374	2,222	152	1,242.0	1,089.2	152.8
August	2,375	2,219	156	1,111.5	977.8	133.7
September	2,377	2,219	157	1,206.9	1,046.1	160.9
October	2,379	2,222	158	1,120.8	965.8	155.0
November	2,380	2,222	158	1,004.3	867.7	136.6
December	2,381	2,223	158	1,244.3	1,091.4	152.9
2009						
January	2,382	2,224	158	992.1	869.4	122.7
February	2,370	2,212	158	889.5	766.4	123.1
March	2,369	2,208	161	1,009.2	875.8	133.4
April	2,368	2,207	160	968.3	840.4	127.9
May	2,362	2,203	160	927.1	801.1	126.0
June	2,358	2,198	160	1,043.9	909.7	134.1
July	2,356	2,197	160	1,045.0	913.6	131.4
August	2,354	2,194	160	978.6	859.6	119.0
September	2,349	2,190	159	1,028.1	890.6	137.5
October	2,347	2,188	158	957.5	821.5	136.0
November	2,337	2,178	158	946.3	810.9	135.4
December	2,333	2,175	158	1,068.9	929.3	139.6
2010						
January	2,325	2,170	155	846.5	732.4	114.2

a Data relate to credit cards (i.e. Visa, MasterCard) in issue by credit institutions resident in Ireland. Debit cards or store cards are excluded.

b Data refer to new spending on all credit cards during the reference period and not just spending on new credit cards.

c Data refer to debt outstanding on all credit cards at month-end and include balances that may be paid in full at the payment due date.

Payment received during month	of which:		Outstanding indebtedness on credit cards ^c	of which:		Outstanding indebtedness year-to-year change	
€ million	Personal cards	Business cards	€ million	Personal cards	Business cards	%	
2007							
1,229.1	1,080.0	149.1	2,696.8	2,573.8	123.0	17.9	January
1,035.9	897.6	138.3	2,697.8	2,577.4	120.4	18.6	February
1,141.1	999.6	141.4	2,698.3	2,571.6	126.8	19.6	March
1,129.8	979.0	150.8	2,791.8	2,670.8	121.0	17.1	April
1,346.9	1,200.0	146.4	2,673.2	2,544.6	128.5	11.5	May
1,138.7	997.1	141.7	2,692.7	2,563.4	129.4	10.6	June
1,267.5	1,114.1	153.4	2,720.9	2,595.6	125.3	11.7	July
1,208.6	1,061.7	146.8	2,762.9	2,639.7	123.3	11.7	August
1,074.9	936.2	138.7	2,817.7	2,686.9	130.8	11.6	September
1,271.1	1,108.8	162.4	2,810.6	2,674.7	135.9	11.5	October
1,187.0	1,031.6	155.4	2,866.5	2,724.3	142.2	11.1	November
1,198.6	1,039.2	159.4	2,992.2	2,847.3	144.9	9.3	December
2008							
1,278.6	1,116.3	162.3	2,938.1	2,802.7	135.3	8.9	January
1,145.7	997.6	148.1	2,919.8	2,777.3	142.5	8.2	February
1,167.7	1,008.3	159.4	2,930.2	2,799.9	130.3	8.6	March
1,209.4	1,053.3	156.1	2,992.3	2,850.2	142.2	7.2	April
1,210.7	1,052.2	158.5	2,990.4	2,850.6	139.8	11.9	May
1,184.4	1,028.7	155.7	3,000.7	2,864.4	136.3	11.4	June
1,273.1	1,115.0	158.2	2,999.1	2,867.4	131.7	10.2	July
1,099.1	959.3	139.8	3,042.3	2,916.2	126.1	10.1	August
1,202.2	1,052.6	149.6	3,078.7	2,940.4	138.3	9.3	September
1,181.4	1,024.1	157.4	3,052.1	2,915.2	136.9	8.6	October
1,043.2	897.5	145.7	3,045.9	2,917.4	128.6	6.3	November
1,194.5	1,043.8	150.7	3,128.5	2,997.0	131.5	4.6	December
2009							
1,088.7	953.6	135.1	3,066.5	2,946.5	120.0	4.4	January
965.1	839.7	125.4	3,015.3	2,896.7	118.6	3.3	February
1,087.7	955.5	132.2	2,963.8	2,843.0	120.8	1.1	March
999.2	865.8	133.5	3,016.4	2,896.2	120.2	0.8	April
976.2	852.3	123.9	2,993.7	2,870.8	122.9	0.1	May
1,041.2	906.5	134.8	3,020.9	2,898.3	122.6	0.7	June
1,067.5	934.0	133.5	3,035.5	2,914.2	121.3	1.2	July
985.3	862.1	123.2	3,042.1	2,924.2	117.8	0.0	August
1,013.5	884.3	129.2	3,078.1	2,951.2	126.9	0.0	September
1,008.9	873.7	135.2	3,052.5	2,924.0	128.6	0.0	October
994.3	858.2	136.1	3,028.8	2,900.8	128.0	-0.6	November
1,015.0	876.2	138.8	3,106.3	2,976.3	130.0	-0.7	December
2010							
943.5	815.4	128.0	3,033.9	2,913.2	120.7	-1.1	January

Section D

Public Finances

Table D1: Government Debt and Government-Guaranteed Debt^a

€ million	2009			
	31 Mar.	30 June	30 Sep.	31 Dec.
Government Debt				
<u>Amount outstanding (gross)</u>				
Euro-denominated debt				
Government stock	53,166	57,453	61,262	70,858
Exchequer Bills/Notes, Central Treasury Notes	3,376	13,685	13,701	9,265
Saving Certificates/Stamps	2,664	2,811	2,950	3,105
Prize Bonds	874	944	1,015	1,073
Savings Bonds	2,130	2,332	2,526	2,761
National Instalment Savings	437	443	449	456
Ways and means	1,495	2,079	2,247	1,783
Borrowings from Central Bank, etc.	—	—	—	—
Local loans funds	5	5	5	5
Short-term paper	10,269	6,959	3,649	1,746
FX contracts	6,954	6,987	7,345	5,258
EIB loans	—	—	—	—
Public bond issues	—	—	—	—
Private placements	218	218	218	218
Medium-term notes	—	—	—	—
Swaps	448	448	448	448
Total euro-denominated debt	82,036	94,364	95,815	96,975
Non-euro-denominated debt				
EIB loans	30	—	—	—
Public bond issues	—	—	—	—
Private placements	—	—	—	—
Medium-term notes	452	428	418	422
Swaps	−452	−428	−418	−422
Short-term paper	6,778	6,756	7,115	5,373
FX contracts	−6,910	−6,830	−7,142	−5,381
Total non-euro-denominated debt	−102	−75	−27	−8
Gross debt	81,934	94,289	95,788	96,967
Residual Maturity Profile				
Amounts due to mature in:				
— ≤ 1 year	28,055	30,688	25,409	19,968
— Over 1 year but ≤ 5 years	18,011	18,846	22,035	27,849
— Over 5 year but ≤ 10 years	20,667	22,854	25,556	33,059
— Over 10 years	15,201	21,901	22,788	16,092
Total	81,934	94,289	95,788	96,968
Government-guaranteed debt	4,628	5,785	5,210	5,116

a The term Government debt refers to central government debt. The data provided on Government-guaranteed debt refer mainly to State-sponsored bodies. An advance release calendar for central government debt is shown on the IMF Special Data Dissemination Standards (SDDS) Bulletin Board.

Sources: NTMA and Department of Finance.

Table D2: Government Stock — Nominal Holdings

€ million	2008	2009		
End-quarter	December	June	September	December
1. Resident ^a	3,586	11,284	11,360	11,865
— MFIs and Central Bank	2,405	8,081	8,074	8,297
— General government	157	450	337	314
— Financial intermediaries	811	2,426	2,623	2,921
i) Financial auxiliaries	144	210	270	299
ii) Insurance corporations and pension funds	648	2,165	2,307	2,568
iii) Other financial intermediaries	19	51	46	54
— Non Financial Corporations	53	122	199	128
— Households	160	205	127	205
2. Rest of world	38,277	46,169	49,903	58,993
Total	41,863	57,453	61,263	70,858
3. Amounts due to mature in:				
— Less than 3 years	9,869	9,836	10,258	11,062
— 3 or more years but less than 5 years	6,062	12,668	14,422	14,625
— 5 or more years but less than 10 years	11,857	20,965	21,712	29,296
— 10 or more years but less than 15 years	14,075	13,984	14,871	8,875
— 15 or more years				7,000
Total	41,863	57,453	61,263	70,858

^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.

Explanatory Notes

The Central Bank of Ireland became the Central Bank & Financial Services Authority of Ireland (the 'Bank') on 1 May 2003. However, in order to ensure clarity and continuity in the statistical tables and Explanatory Notes the term 'Central Bank' is generally used.

Section A: Main Monetary Indicators

Selected Monetary Aggregates

1. Selected Measures of Private-Sector Credit

Private-sector credit of all credit institutions comprises all forms of lending, including accrued interest thereon, by within-the-State offices of all credit institutions to Irish resident entities other than credit institutions, the Central Bank and the General Government.

2. Monetary Aggregates

The Irish contribution to *narrow money supply M1*, contains two components, namely currency in circulation and overnight deposits. Currency in circulation comprises the Bank's share of euro banknotes issued in the Eurosystem, in proportion to the Bank's paid-up shares in the capital of the ECB, plus coin issued by the Central Bank less holdings by within-the-State offices of MFIs of issued euro banknotes and coin. Overnight deposits comprise sight/demand deposits held at within-the-State offices of all credit institutions and the Post Office Savings Bank by Irish and other monetary union resident private-sector entities, i.e., by Irish and other monetary union resident entities other than credit institutions, the Central Bank and Central Government.

The Irish contribution to the *intermediate money supply M2*, comprises M1 plus deposits with an agreed maturity of up to 2 years, deposits with a period of notice of up to 3 months denominated in both euro and foreign currency held at within-the-State offices of all credit institutions and the Post Office Savings Bank, by Irish and other monetary union resident private-sector entities, i.e., by Irish and other monetary union resident entities other than credit institutions, the Central Bank and Central Government.

The Irish contribution to the *broad money supply M3*, covers M2, repurchase agreements and debt securities with a maturity of up to 2 years issued by within-the-State offices of all credit institutions to Irish and other monetary union resident private-sector entities minus holdings by credit institutions of securities issued by euro-area MFIs. It also includes money market fund (MMF) shares/units issued by resident MMFs to Irish and other euro-area residents.

Section B: Interest Rates and Exchange Rates and Balance of Payments

Official and Selected Interest Rates

Table B1 includes key ECB and money-market interest rates and selected domestic rates, which were previously in Tables B1 and B2.

Retail Interest Rates

Tables B2.1 and B2.2 show retail interest rates and volumes for outstanding amounts and new business collected under Regulation ECB/2001/18. This regulation provides a framework for collecting harmonised interest-rate data for euro-denominated loans and deposits vis-à-vis households and non-financial corporations resident in the euro area. Rates are calculated as weighted averages for all products within each instrument category.

For all instrument categories except the APRC, the rate relates to the interest component only. The APRC includes the interest component plus any other charges applied by the lending institution.

Trade-Weighted Competitiveness Indicators for Ireland

1. Weights (%)

UK (27.66), US (18.31), Germany (16.22), France (9.12), Japan (8.57), Netherlands (5.67), Italy (5.43), Belgium (3.51), Singapore (2.93) and Spain (2.58).

2. Deflators

Consumer Prices — Harmonised Indices of Consumer Prices (HICP) are used for Ireland and the other EU countries. CPI indices are used for the remaining three countries.

Producer Prices — Indices of domestic output prices for manufacturing are used for Ireland, the other EU countries and Japan. The index for finished goods is used for the US while the wholesale index is used for Singapore.

Since seasonally-adjusted data are not universally available, non-seasonally adjusted price indices are used.

Section C: Banking and Other Financial Institutions

Credit Institutions: Monthly Balance-Sheet Statistics

1. Coverage

The monthly balance-sheet statistics relate to liabilities and assets, classified on a residency basis in respect of within-the-State offices.

2. Residency

The residency classification is based on the residency of a customer and not on the location of the particular branch in which the account is maintained. Irish residents comprise the General Government, individuals living in the State for at least one year, private non-profit-making bodies, and enterprises, both public and private, that operate within the State. The definition of residency conforms to international balance-of-payments convention.

3. Valuation

Unless otherwise specified, all liabilities and assets are recorded at the value standing in reporting institutions' books ("book value") on return dates. In some cases, book value will reflect not only the cash value but also revaluations and internal transfers.

All non-euro liabilities and assets, regardless of residency classification, are valued at mid-spot rates on return dates and recorded in the tables as euro equivalents of the amounts outstanding on those days.

The valuation of liabilities and assets would not normally include accrued interest payable or receivable on relevant accounts, nor would it include unearned interest or charges. However, where a liability or asset is valued at market price which indistinguishably includes interest, such accrued interest may form part of the valuation; where interest is paid by means of discount (for example, Exchequer Notes), such interest may also be included in book value, if it is the accounting practice of institutions to do so.

Other aspects which impinge on the method of measuring various liabilities and assets are the treatment accorded to provisions for bad and doubtful debts, offsets and items in transit.

Provision for bad and doubtful debts comprise specific and general provisions and interest suspense accounts. These are defined in accordance with a provision in the Companies Act, 1963, and have been deducted from the loans to which they refer.

Offsets: Certain credit and debit balances, which satisfy precise conditions specified by the Central Bank have been offset.

Items in transit: Credit institutions' current accounts and overdrafts have been adjusted for net debit items in transit by deducting 60 per cent of the figure from current accounts and adding 40 per cent to overdrafts.

4. Monetary Financial Institutions

Credit institutions, as defined in Community Law, and all other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than monetary financial institutions (MFIs), and, for their own account (at least in economic terms), to grant credits and/or make investments in securities.

5. Credit Institutions

The definition of credit institutions corresponds with that of the EEC First Banking Directive. In the Irish case, resident credit institutions comprise licensed banks, building societies and credit unions.

6. Government entities

6.1 General Government comprises all institutional units under public control that are principally engaged in: i) the production of goods and services not usually sold on a market; and/or ii) the redistribution of national income and wealth. They are mainly financed by compulsory payments by the population. General Government is sub-divided as follows:

- (i) central government: all administrative departments, agencies, foundations, institutes and similar state bodies, whose competence extends over the whole economic territory.
- (ii) other general government comprises state/regional government (institutional units exercising some of the functions of government at a level below central government but above local government); local government (administrative department, agencies etc. whose competence covers only a restricted part of the economic territory; and social security funds (schemes whose principal objective is to provide social benefits to the population).

The Irish Central Government includes all government departments, the National Treasury Management Agency (NTMA) and the Post Office Savings Bank (POSB).

7. Other resident (non-Government) entities

Other resident (non-Government) entities are personal and corporate clients, credit unions, commercial State-sponsored bodies, hire-purchase and other finance companies. They do not include the Central Bank, the General Government or credit institutions.

8. All Credit Institutions: Aggregate Balance Sheet — Liabilities

8.1 *Capital and reserves* comprise all capital (including capital contributions, i.e., payments into the reserves of a reporting institution by its parent for no consideration, which are not repayable except at the option of the reporting institution), reserves (except taxation reserve), accumulated retained profits, preference shares and subordinated loan capital, including floating rate notes.

8.2 *Deposits from credit institutions and other MFIs (excluding Central Bank)* comprise all funds placed with reporting institutions by monetary financial institutions. It includes: current accounts, money market deposits and other term deposits of MFIs with the reporting institution.

8.3 *Deposits from Central Bank* comprises drawings on the European System of Central Banks' Marginal Lending Facility, sale and repurchase agreements and other advances extended by the European System of Central Banks or other central banks.

8.4 *Deposits from General Government* comprises overnight (current) and deposit account balances held by the General Government (including government departments and the National Treasury Management Agency) with credit institutions.

8.5 *Deposits from other residents* comprise overnight (current) accounts and deposit accounts held with credit institutions by resident entities, as defined in item 7.

- (i) *Overnight accounts* comprise demand deposits, including those bearing interest, which are transferable by cheque or electronic equivalent, and suspense accounts. This item is reported net of the adjustment for items in transit, as defined in item 3.
- (ii) *Agreed maturity* comprise non-transferable deposits which cannot be converted into currency before that agreed fixed term or which can only be converted into currency before that agreed term provided that the account holder is charged some kind of penalty.
- (iii) *Notice* comprise deposits which are without any agreed maturity and cannot be converted into currency without a period of prior notice, before which the conversion into cash is not possible or possible only with a penalty.
- (iv) *Repurchase agreements* comprise funds received as part of 'repo-like' agreements. These agreements involve the receipt of cash by the reporting institution in exchange for securities with a simultaneous commitment to reverse the transaction at a future date. 'Repo-like' agreements include genuine repos, sale and buy-backs, and securities lending agreements with cash collateral.

8.6 *Debt securities issued* comprise funds received in exchange for non-equity debt securities issued by the reporting institution. Such instruments are usually negotiable and traded on secondary markets, and do not grant the holder any ownership rights over the issuing institution. All non-equity bearer securities which have been issued by the reporting institution are reported here, e.g., all commercial paper, certificates of deposit, notes and bonds which have been issued by the reporting institution to non-Government entities or in bearer form.

8.7 *Remaining liabilities* are the sum of all other liabilities of credit institutions. These include accrued interest payable, taxation provisions and reserves, sundry credit items such as: accrued expenses or net credit balances on accounts relating to the operating costs of the reporting institution such as salaries, wages, rent, rates, stationery, heating and lighting, insurance, stamp duty, PAYE, VAT, etc.; any gross credit balances on impersonal accounts not relating to customers' funds; any leasing rentals paid in advance by customers; any commissions and any net liability to non-resident offices.

9. All Credit Institutions: Aggregate Balance Sheet — Assets

9.1 *Holdings of notes and coin* comprise holdings of cash at branches and at the head office of the reporting institution. Cash in transit between branches and head office and cash held in ATMs are included.

9.2 *Loans to credit institutions and other MFIs (excluding Central Bank)* comprise all funds placed by reporting institutions with monetary financial institutions. It includes: current accounts, money market deposits and other term deposits of the reporting institution with MFIs.

9.3 *Balances with Central Bank* comprise any deposit which the reporting institution must maintain with the Central Bank of Ireland pursuant to the European Communities (Deposit Guarantee Schemes) Regulations, 1995 and funds placed by reporting institutions in their reserve requirement deposit accounts. It also includes discretionary term deposits, overnight and current/settlement account balances and any special supplementary deposits which reporting institutions have been requested to place with the European Systems of Central Banks or other central banks.

9.4 *Loans to General Government* comprise credit extended by credit institutions to General Government including advances under revolving credit facilities.

9.5 *Loans to other residents* comprise all forms of lending, i.e., funds lent by the reporting institution which are not evidenced by negotiable documents, to resident entities, as defined in item 7. Lending to credit institutions, the Central Bank and Central Government is excluded. All loans are reported net of any provisions for bad and doubtful debts and net of any unearned interest and charges.

- (i) *Overdrafts* comprise utilised facilities granted by way of accommodation to clients on accounts which show frequent fluctuations between debit and credit balances. Such facilities are usually negotiated for a period of one year and are repayable on demand. Only debit balances are reported here. This item is reported net of the adjustment for items in transit, as defined in item 3.
- (ii) *Repurchase agreements* comprise funds advanced under 'reverse repo-like' agreements. These agreements involve the lending of cash by the reporting institution in exchange for securities with a simultaneous commitment to reverse the transaction at a future date. 'Reverse repo-like' agreements include genuine reverse repos, buy and sell-backs, and securities borrowing agreements with cash collateral.
- (iii) *Loans up to and including one year* comprises loans, other than overdraft facilities, with an original maturity of up to and including one year. Any loans to resident entities, as defined in item 7, at a money-market rate and with an original maturity of up to and including one year are reported here.
- (iv) *Term/revolving loans* comprise loans which are repayable by negotiated amounts and which at the time when they were originally contracted (or renegotiated if applicable) had a maturity in excess of one year; loans to resident entities, as defined in item 7, at a money-market rate and with an original maturity of more than one year; loans which are rolled over after specified periods under loan agreements which at the time of original contraction (or renegotiation if applicable) are for periods in excess of one year; instalment-credit type financing with fixed monthly repayments whereby, as the monthly payment reduces the amount outstanding on the loan, the borrower may obtain further advances by topping up to his credit limit without increasing the amount of his monthly payment; and aggregate amount of net indebtedness of credit-card holders arising from the usage of credit cards.
- (v) *Instalment-credit/Hire-purchase/Leases* comprise agreements where the amount borrowed is repayable with interest by equal instalments over an agreed period. In the case of hire-purchase agreements ownership remains with the reporting institution until the customer has paid the required number of instalments and exercised his right to purchase the goods. In the case of instalment-credit agreements ownership of the goods passes to the customer from the supplier, with the reporting institution making its advance on the completion of the documentation. Unearned interest and charges are not included. In the case of leases, the lease transfers substantially all the risks and rewards of ownership of the asset to the lessee. It is presumed that such a transfer of risks and rewards occurs if at the inception of the lease the present value of minimum lease payments, including any initial payment, amounts to substantially all (90 per cent or more) of the fair value of the leased asset. Unearned interest and charges are not included.

- (vi) *Residential mortgages* comprise lending to private individuals for house purchase, repair, development or improvement, secured by a mortgage on the property which is or will be occupied by the borrower or which the borrower will rent out for residential purposes. This includes mortgages, for example, for holiday or second homes. 'Top up' mortgages or 'equity release' mortgages, whereby a mortgage is increased to allow funds to be used for purposes other than purchase of residential property are not included. Such mortgages are reported under Other Mortgages.
- (vii) *Other mortgages* comprise commercial mortgages and all other loans secured by mortgage on property, other than those mentioned above.
- (viii) *Other loans and securities issued* comprises all other forms of lending by credit institutions to non-Government entities.

9.6 *Holdings of securities* comprise funds lent in exchange for non-equity debt securities. Such instruments are usually negotiable and traded on secondary markets, and do not grant the holder any ownership rights over the issuing institution. The category *Issued by general government* includes *Exchequer Notes* and other government *Securities* (stock) held by credit institutions, including any government securities lent by reporting institutions as part of sale and repurchase agreements or securities lending agreements.

9.7 *Shares and other equity* comprise holdings of securities which represent property rights in corporations. These securities generally entitle the holders to a share in profits of the corporation or share in their own funds in the event of liquidation.

9.8 *Fixed assets* comprise premises, equipment, furniture, fixtures and fittings, company cars, etc., owned by reporting institutions for their own use. These assets are reported net of accumulated depreciation.

9.9 *Remaining assets* are the sum of all other assets of credit institutions. These include accrued interest receivable, sundry debit items such as: prepayments or debit balances on operating accounts of the reporting institution such as salaries, wages, rent, rates, stationery, heating and lighting, insurance, stamp duty, PAYE, VAT, etc.; any net claim on non-resident offices.

10. Retail Clearing Institutions: Aggregate Balance Sheet

The items reported in this balance sheet consist of the items defined for all credit institutions, reported for retail clearing institutions only.

11. Non-Retail Clearing Institutions with Predominantly Domestic Business: Aggregate Balance Sheet

The items reported in this balance sheet consist of the items defined for all credit institutions, reported for non-clearing institutions with predominantly domestic business only.

12. Non-Retail Clearing Institutions with Predominantly Foreign Business: Aggregate Balance Sheet

The items reported in this balance sheet consists of the items defined for all credit institutions, reported for non-retail clearing institutions with predominantly foreign business only.

13. Mortgage Lenders: Aggregate Balance Sheet

The items reported in this balance sheet consist of the items defined for all credit institutions, reported for mortgage lenders only.

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