# The Rise and Fall of Sectoral Net Wealth in Ireland

Mary Cussen and Gillian Phelan*


## Abstract

The loss in wealth precipitated by the latest financial crisis and economic recession has been substantial. Our paper estimates that Irish wealth has declined by 1.8 times GDP since Q3 2008. Much of the wealth lost has been due to a substantial decline in the value of real and financial assets. The household sector has suffered the severest decline, reflecting the rapid fall in house prices, to date. Our paper also finds that since the financial crisis began institutional sectors have markedly altered their behaviour in response to the changing economic environment. Households and the financial sector have been undergoing a process of deleveraging since late 2009, as they reduce debt levels. In contrast, the Government sector became a net borrower from Q2 2008 onwards, as a result of the worsening economic environment.


* The authors are Economist and Deputy Head of Department, respectively in the Bank's Statistics Department. The views expressed are solely the views of the authors and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks. The authors would like to acknowledge, with thanks, the helpful comments and suggestions of Patrick Honohan, Maurice McGuire, Joe McNeill, Gerard O'Reilly and Kieran McQuinn. They would also like to thank Donal Smith and Paul Anderson for statistical assistance.

## 1 Introduction

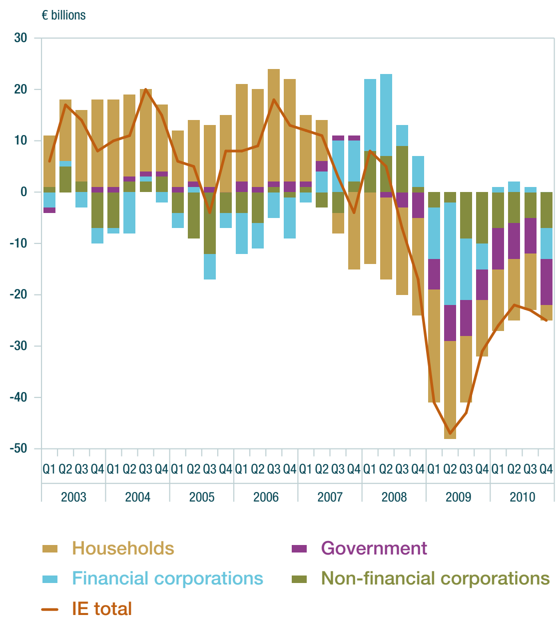
The wealth lost since the financial crisis began has been enormous. Total capitalisation of world stock markets almost halved during 2008, falling by approximately US $30 trillion (Lin 2009). Furthermore, the world economy shrank in 2009 for the first time since World War II (IMF 2009). Ireland became the first euro area country to officially enter recession in September 2008. The decline in wealth in Ireland has been significant. The largest hit to personal wealth has come from the fall in the value of housing (Cussen and Phelan, 2010). Moreover, Government finances have deteriorated severely, while the banking sector has undergone huge structural change since the financial crisis began. This paper shows that in line with these developments there was substantial wealth destruction, arising from falls in the value of both financial and non-financial assets.

Examining the fall in net wealth is important for a number of reasons. Declining wealth can affect institutional sectors consumption and investment decisions, which can have an adverse impact on economic recovery. In addition, sectors may alter their borrowing and lending behaviour as a result of the changing economic environment. This in turn will have repercussions for other institutional sectors ability to finance their activities. The paper will be structured as follows; section 2 examines the decline in overall Irish wealth. Sections 3 and 4 analyse the impacts on wealth of valuation changes and financial flows, respectively. The relative contributions of valuation changes and savings to total net wealth are presented in section 5. The final section outlines conclusions.

## 2 The Fall in Total Irish Net Wealth

The decline in net wealth over time can be estimated by calculating the changes in domestic institutional sectors' balance sheets. Net financial wealth for all institutional sectors of the Irish economy can be obtained from the *Quarterly Financial Accounts*. These data are compiled in accordance with the principles laid down by the European System of Accounts (ESA 95) and are published on a quarterly basis by the Central Bank of Ireland. As households and non-financial corporations hold a significant proportion of their wealth in the form of non-financial assets, estimates of housing assets and commercial property are added to net financial wealth so as to derive an overall approximation of total net wealth for these sectors. Chart 1 shows that overall Irish balance sheets have been declining since late 2008. In total, we estimate that net wealth has declined by €281 billion since Q3 2008, equivalent to approximately 1.8 times Irish GDP. This contrasts with an estimated loss in wealth of three times GDP during the Japanese recession of the 1990s and one year's GDP during the Great Depression for the United States (Koo 2008). Households have lost by far the largest amount of net wealth, accounting for nearly 50 per cent of the total wealth lost by Irish resident sectors since Q3 2008.

**Chart 1:** The Change in Irish Total Net Wealth, 4-quarter moving average




Sources: Quarterly Financial Accounts and internal calculations.

Changes in net wealth over a period can be sub-divided into two components – valuation changes in assets or liabilities held, and/or new savings generated, as outlined in Box 1. This paper examines the contribution of both declining asset values and savings to lower net wealth in sections 3 and 4, respectively.

**Box 1:** Determinants of Changes in Net Wealth

Net Wealth = Financial Assets + Non-Financial Assets – Liabilities

∆ Net Wealth = ∆ Value of Assets/Liabilities + ∆ Savings

Value changes can be due to changes in the price of an asset/liability, exchange-rate changes or other changes such as classification changes

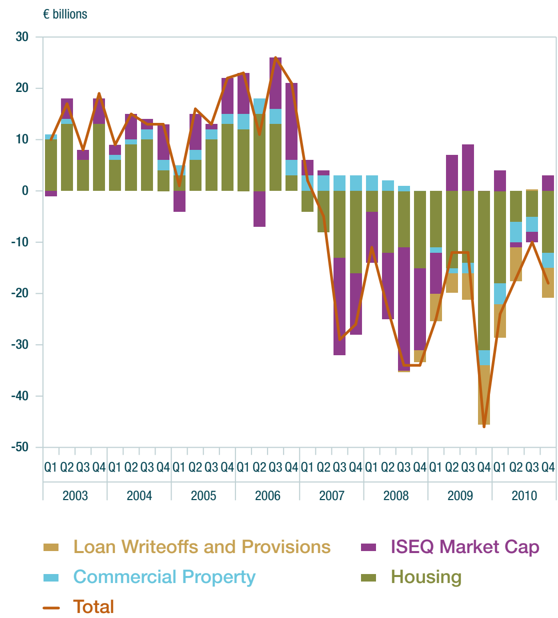
∆ Savings = net lending/borrowing + investment in non-financial assets

Net lending/borrowing = transactions in financial assets minus transactions in liabilities

## 3 Valuation Changes

Severe financial crises can lead to large and prolonged declines in market asset values. Reinhart and Rogoff (2009) find in their analysis of historical financial crises, that real house prices fell, on average, by 35 per cent over a period of six years. They also find that real equity prices on average suffer much sharper declines of 55.9 per cent. Declines in equity prices however, are not as protracted, lasting 3.4 years on average. In the case of Ireland, house prices have fallen by 40 per cent so far since mid-2007 (CSO 2011b). Equity prices, on the other hand, fell by nearly 47 per cent between September 2007, when the international banking crisis started, and November 2010, when the ISEQ was at its lowest value, but have since rebounded slightly. Chart 2 depicts the Irish asset categories which have fallen most in value. In total, these assets have lost €321 billion since Q2 2007, with housing asset value suffering the severest declines.

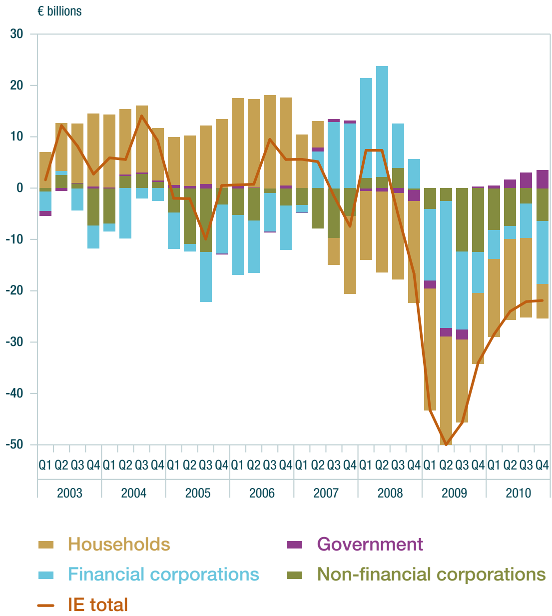
**Chart 2:** The Decline in Value of Irish Assets




Sources: Quarterly Financial Accounts and internal calculations.

As Irish assets can be held by non-residents, it is more appropriate to calculate the change in the value of net wealth held by Irish resident sectors only. In overall terms, it is estimated that net wealth held by Irish residents has declined in value by €291 billion since Q3 2008. Chart 3 shows the extent to which these declines have been distributed across institutional sectors.

**Chart 3:** The Decline in Irish Total Net Wealth due to Valuation Effects, 4-quarter moving average

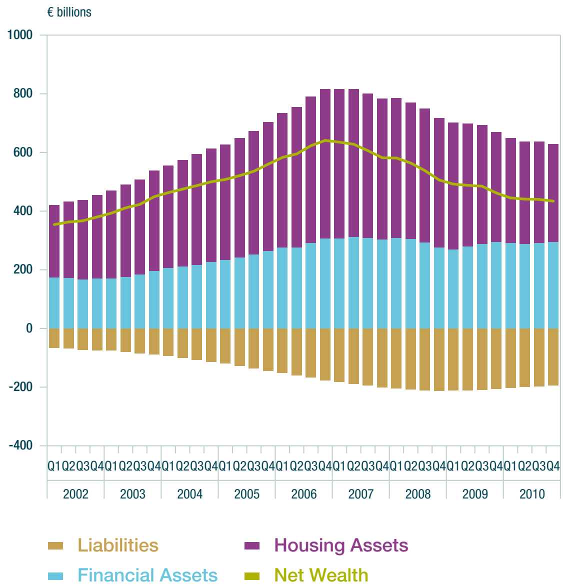



Sources: Quarterly Financial Accounts and internal calculations.

### *3.1 Households*

Irish households have suffered by far the largest decline in net wealth, largely due to their exposure to the housing market. Households were also the first sector to experience a reduction in their net wealth, as house prices began to fall from Q1 2007 onwards[2]. In total, the value of households' net wealth has fallen by 32 per cent from its peak in Q4 2006. Much of this reduction in wealth can be attributed to declines in the value of housing assets. In Q4 2006, housing assets formed 63 per cent of households total asset portfolio. House prices have, however, declined by nearly 40 per cent from their peak in mid-2007 (CSO 2011b), leading to a 35 per cent fall in the value of the total stock of housing assets. The value of households' assets were also adversely impacted, but to a lesser extent, by declines in the value of financial assets due to volatility in international stock markets as a result of the financial turmoil. Between Q1 2008 and Q1 2009, the value of households' insurance technical reserves (ITRs)[3] and quoted shares declined by 21 per cent and 60 per cent, respectively. However, as international stock markets started to recover, the value of ITRs rebounded by 14 per cent and quoted shares by 7 per cent, from Q2 2009 onwards.

**Chart 4:** The Household Balance Sheet: Assets, Liabilities and Net Wealth




Sources: Quarterly Financial Accounts and internal estimates.

Households' net wealth from Q1 2002 onwards is depicted in Chart 4. It can be seen that the net wealth of households has returned to Q3 2003 levels by Q4 2010. This fall in the net wealth of households is nearly identical to the fall in the value of housing assets, the stock of which is also back to the values that prevailed at Q3 2003. While households' financial assets have recovered some ground with positive growth in recent quarters, the net effect has been minimal, as the rise in asset values has been offset by an almost identical increase in liabilities.

As *Quarterly Financial Accounts* data only looks at sectoral wealth in aggregate, they do not give a comprehensive picture of the distributional effects of the fall in net wealth.

1 The improvement in Government's net wealth position in recent quarters reflects the fall in the market value of Irish Government bonds outstanding. The nominal value of the bonds outstanding provides a more accurate reflection of the debt outstanding.

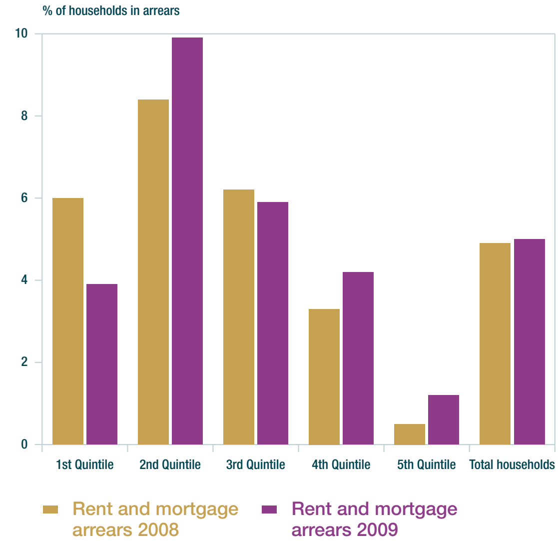
2 Our calculation on housing asset values are based on the ESRI/Permanent TSB house price index which shows that house prices were at their peak in Q4 2006. The recently released CSO residential property price index however, shows house prices peaking in April 2007.

3 'Insurance technical reserves' include life assurance policies and pension funds.

In particular, the data cannot tell us the extent to which lower income groups' net wealth has been impacted by the recession and financial crisis. Some useful information may, however, be gained from The *Irish Longitudinal Study on Ageing* (TILDA) survey, which was conducted between October 2009 and February 2011 and which surveys Irish people aged 50 and over. O'Sullivan and Layte (2011) find using the results of this survey that people aged 50 and over on higher income levels have higher asset holdings. They find that the median value of owner occupied residential property, net of mortgage, for those in the lowest income quintile was €100,000, compared to €330,000 for those in the highest income quintile. In addition, they find that those with higher education levels report higher property values. Individuals with primary or no education reported a median property value of €170,000, while those with secondary or tertiary education valued their property at €200,000 or €300,000, respectively. Therefore, those with higher income levels and high educational levels are likely to have seen the biggest decrease in the value of their net wealth as property values declined. O'Sullivan and Layte also find that for each income quintile median net assets are positive, however they are extremely small for those in the lowest income quintile (c. €3,000). Those on lower income levels are, therefore, likely to have less savings or other financial assets which can be drawn on during old age.

The *Survey on Income and Living Conditions* (SILC) (CSO 2010) which provides data on rent and mortgage arrears, also provides some insights into how the impact of the economic downturn may have adversely affected different income groups. Chart 5 shows that 5 per cent of all households reported that they were in arrears with their rent or mortgage. The survey found however, that nearly 10 per cent of households in the second lowest income quintile reported they were in arrears. Therefore, although those in higher income quintiles may have lost more in terms of the value of their housing wealth, these results show that those in lower income quintiles are most likely to be in arrears with their mortgage or rent, as they are likely to have less liquid assets at their disposal during times of financial stress. This is in line with findings by Foote, Gerardi and Willen (2008) which found that the probability of mortgage default increases if accompanied, at the same time, by cash-flow problems.

**Chart 5:** Rent and Mortgage Arrears by Income Quintile




Sources: SILC Survey 2010, CSO.

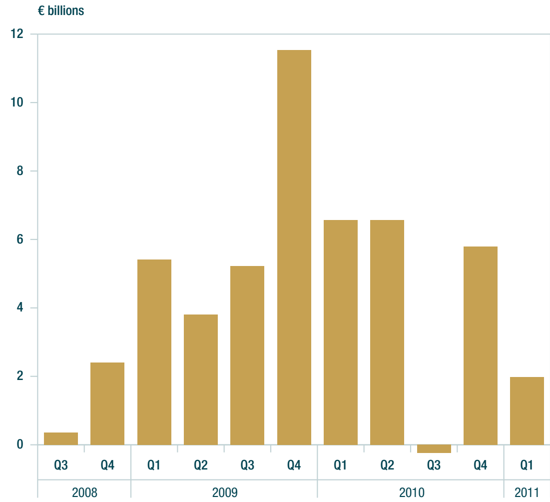
### *3.2 Financial Corporations*

Financial corporations experienced the second largest decline in the value of their net wealth since the financial crisis began as shown in Chart 3[4]. Financial corporations comprises the Central Bank, money market funds, credit unions, credit institutions, other financial intermediaries, financial auxiliaries and insurance companies and pension funds. Though the money market fund and other financial intermediary sectors are very large in Ireland, most of their assets and liabilities are *vis-a-vis* non-residents. While, significant assets are held by the domestic insurance and pension fund sector, this sub-section will however, concentrate primarily on credit institutions where the largest structural changes have occurred.

4 It should be noted that as net wealth is equal to assets minus liabilities, declines in the value of securities and shares issued by financial corporations will increase the value of the sectors net wealth. Consequently, declines in financial corporations' asset values during the financial crisis were offset to some extent by reductions in the value of their liabilities.

In the years preceding the financial crisis, Irish banks built up a considerable exposure to the property market. Property-related lending, as a share of banks assets, had grown from less than 40 per cent before 2002 to over 60 per cent by 2006 (Honohan 2009). Moreover, from 2003 onwards, there was a distinct decline in residential loan appraisal quality and there was also a substantial increase in lending to property developers (Honohan et al. 2010). As property prices began to decline from early 2007 onwards, and Ireland entered recession in September 2008, it became evident that the over-exposure of bank lending to the property-related sector was a serious problem. In response to significant impaired loans on banks' balance sheets the National Asset Management Agency (NAMA) was established in January 2010. The purpose of NAMA was to remove impaired land and development loans from participating credit institutions'[5] balance sheets. These loans were exchanged for NAMA-issued securities, of which 95 per cent were Government guaranteed. Due to the significant impairment of the loans, NAMA has so far applied an average haircut on these loans of 58 per cent. As at the end of March 2011, Irish banks had transferred €72.3 billion of loans to NAMA, with the likelihood that a further €3.5 billion may yet be transferred (NAMA 2011). Chart 6 depicts loan write-downs, including those associated with the loans transferred to NAMA, and provisions for bad loans since Q3 2008. Since Q3 2008, the effect of write-downs and provisions on banks' loan books has been a reduction of almost €50 billion in the loan assets of banks. As most land and development loans have now been transferred to NAMA, it is likely that loan write-downs and provisions on development-related loans will be markedly smaller going forward, although further write-downs are likely for other loan categories.

**Chart 6:** Loan Write-Downs and Provisions for Bad Debts (transactions)




Sources: Money and Banking Statistics and internal calculations.

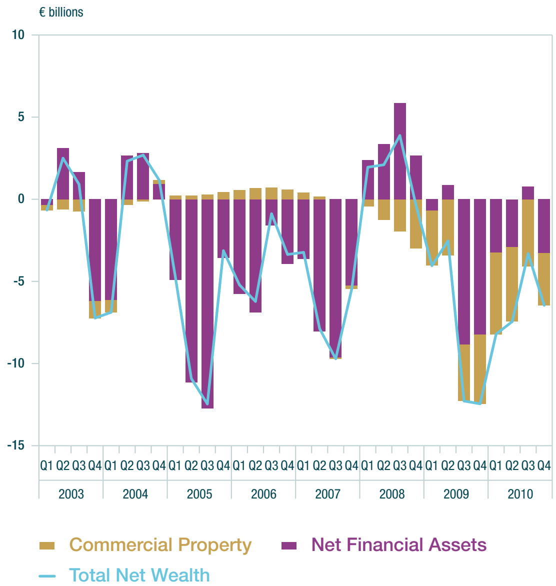
### *3.3 Non-Financial Corporations*

Due to the large number of multinationals in the non-financial corporation sector in Ireland, changes in the net financial wealth of this sector can be heavily influenced by market entrants and exits. It can, therefore, be difficult to estimate the extent to which any net financial wealth decline is directly attributable to the recession and financial crisis. Chart 7 depicts the changes in the value of total net wealth of non-financial corporations, broken down by financial wealth and commercial property. As banks wrote-down the value of commercial property related loans from late 2008 onwards, this led to a decline in the value of non-financial corporations' liabilities. The fall in the value of non-financial corporations' commercial property assets was however, far less than the write-downs in loan liabilities. Commercial property prices began to decline in Q3 2007 as shown in Chart 7, *albeit* by a very small amount. As Ireland entered recession during 2008 however, the loss of value in commercial property increased substantially. Gros (2011) presents an alternative calculation for the value lost during the recession. This is

5 Allied Irish Bank, Bank of Ireland, Anglo Irish Bank, the Educational Building Society and Irish Nationwide Building Society.

based on estimates of the construction 'overhang' by calculating the amount by which construction exceeded its long-run average in Ireland. Using this methodology he calculates that the value of the oversupply amounted to around 52 per cent of GDP.

**Chart 7:** The Decline in Value of Non-Financial Corporate Net Wealth, 4-quarter moving average




Sources: Quarterly Financial Accounts and internal calculations.

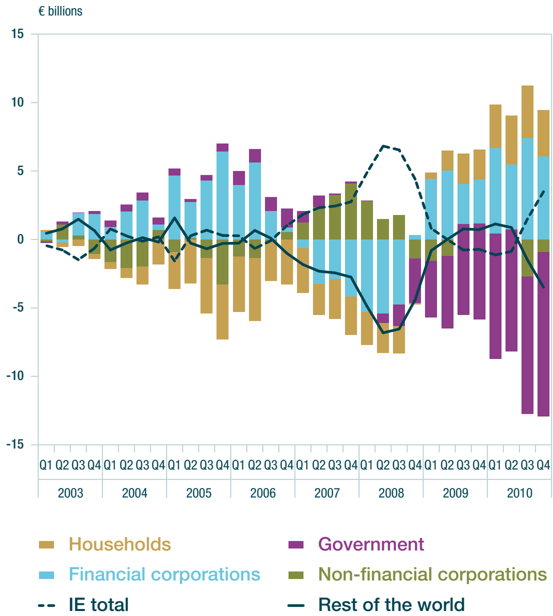
To conclude this section, declines in the value of net-financial wealth experienced in Ireland since the recession and financial crisis began, have not been homogenous across institutional sectors. Households have suffered, by far, the largest decline in net wealth reflecting their exposure to the housing market. Valuation changes are however not the only determinant of net wealth. Section 4 illustrates how trends in investment and borrowing have also influenced net wealth.

## 4 The Impact of Financial Flows on Wealth

In addition to valuation changes, financial transactions (or flows) also contribute to changes in net wealth. Institutional sectors markedly changed their behaviour in response to the financial crisis and subsequent recession, to adapt to the worsening economic environment. While the previous section examined the decline in Irish wealth due to valuation effects, this section looks at how the changes in behaviour of institutional sectors have impacted wealth. This is done by examining the flow of funds between sectors using net lending/borrowing data from Irish *Quarterly Financial Accounts*.

If a sector is a net lender, it is in overall terms, saving more than it is borrowing, thereby increasing its stock of financial assets. If a sector is a net borrower, the reverse applies. Net lending is, therefore, the difference between transactions in financial assets and transactions in liabilities. The net lending/borrowing of all sectors of the economy is summarised in Chart 8, where a positive figure indicates that a sector is a net lender, and *vice versa*. Overall, the sum of net lending/borrowing of all sectors will sum to zero, as for every lender there must be a corresponding borrower. However, flows can only contribute to an increase in overall net wealth, when domestic sectors have a positive net transactions balance with the rest of the world. Chart 8 shows that trends in net lending/borrowing for all sectors have altered significantly since the financial crisis intensified in Q3 2008. These changing trends are discussed in detail for each sector below, as well as their impact on net wealth and their counterparties.

**Chart 8:** Net Lending/Net Borrowing of All Sectors, 4-quarter moving average



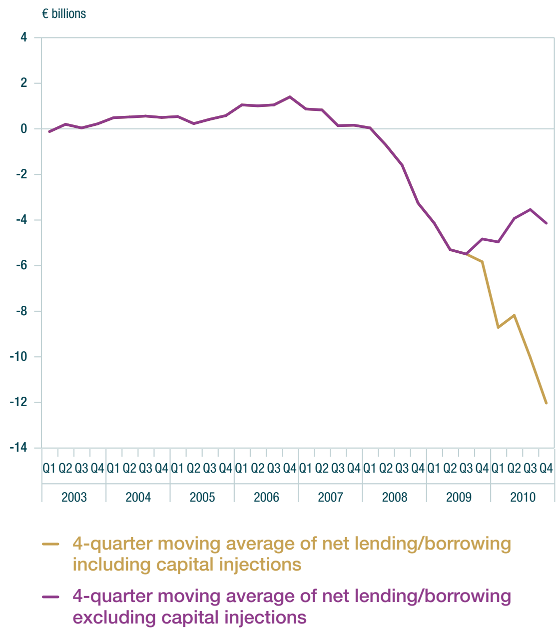

Source: Quarterly Financial Accounts.

The reliance of Irish financial sectors on the rest of the world for funding, particularly in 2007 and 2008, is noteworthy. Essentially, domestic residents were accumulating financial liabilities with the rest of the world, largely for the purposes of investment in domestic non-financial assets (primarily property). These financial liabilities, largely in the form of bank borrowing, have not been impacted to a significant degree by valuation changes, in contrast to the non-financial assets they funded.

### *4.1 Government Net Lending/Borrowing*

As the economic environment worsened, the Government sector moved from being a net lender to a net borrower in Q2 2008, as depicted in Chart 8. Lower tax revenues as a result of the recession, and the provision of capital transfers to stabilise the banking sector, have led to substantial increases in Government net borrowing in recent quarters. During 2009 and 2010, the State provided capital transfers totalling €4 billion and €31.6 billion respectively to the distressed banks, further increasing Government borrowing requirements[6]. The impact of these capital transfers on net lending/borrowing is depicted below in Chart 9. Overall net borrowing by the Government totalled €23 billion in 2009 and €48 billion in 2010. This increased borrowing has led to the deterioration of Government wealth as outlined in section 2. Between Q4 2008 and Q4 2010 Government wealth has fallen from minus €23 billion to minus €78.7 billion.

**Chart 9:** Net Lending/Net Borrowing of Government, 4-quarter moving average




Sources: Quarterly Financial Accounts and internal calculations.

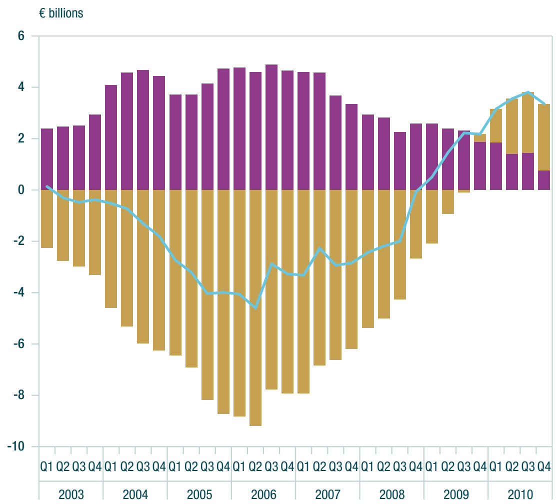
### *4.2 Households' Net Lending/Borrowing*

Irish households had been net borrowers up to Q4 2008, increasing their debt levels each quarter, as depicted in Chart 8. Households' total borrowing levels peaked at €212 billion in Q4 2008, an increase of 220 per cent from Q1 2002. Households' borrowing was predominately used to finance housing purchases over this period. By Q4 2008, 73 per cent of outstanding loans related to housing purchases. The bursting of the

**6** Capital injections into banks are treated in two distinct ways. Capital injections into Allied Irish Bank and Bank of Ireland totalling €10.7 billion are treated in the accounts as investments and therefore do not negatively impact net borrowing. However, capital injections into Anglo Irish Bank, EBS and Irish Nationwide are treated as capital transfers and therefore increase net borrowing.

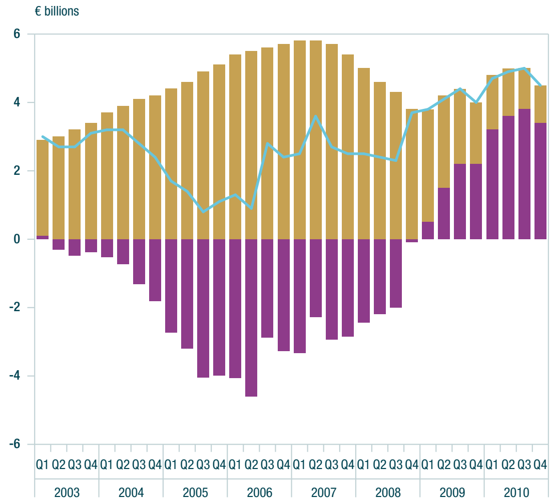
housing bubble and the financial crisis has, however, led to a deterioration in the value of household assets. Duffy (2010) estimates that 196,000 households were in negative equity by the end of 2010, equivalent to almost 30 per cent of mortgaged households in Ireland. Chart 10 shows that from Q1 2009 onwards households became net lenders, as transactions in liabilities declined. Furthermore, from late 2009 onwards households have been undergoing a process of deleveraging, as they reduce the high debt levels accumulated prior to the recession and financial crisis. This trend is in line with studies which have found that deleveraging has followed nearly every major financial crisis since the Second World War (Roxburgh et al., 2010). Estimates of household savings can be derived by adding investment in non-financial assets to net lending/borrowing. Chart 11 shows that household savings have been at historically very high levels since Q4 2008. The increased savings by households should over time contribute towards higher net wealth, as liabilities are reduced, assuming that they are not offset by further declines in asset values.

**Chart 10:** Net Lending/Net Borrowing of Irish Households, 4-quarter moving average




Sources: Quarterly Financial Accounts and internal calculations.

**Chart 11:** Estimates of Household Savings, 4-quarter moving average



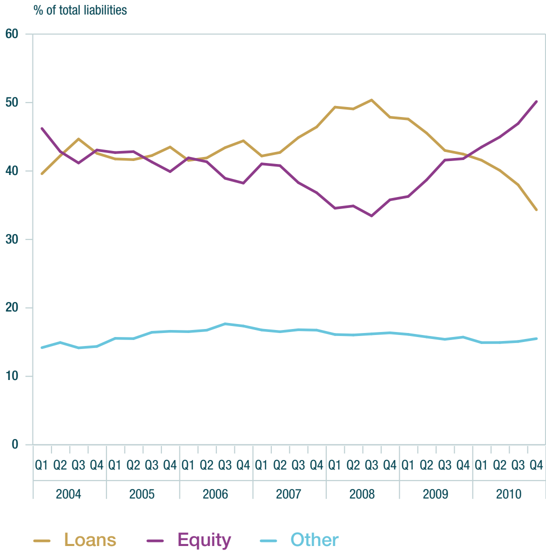

Sources: Quarterly Financial Accounts and CSO calculations.

### *4.3 Non-Financial Corporations' Net Lending/Borrowing*

Non-financial corporations were net lenders between Q3 2009 and Q2 2010, as they reduced debt levels in the wake of the financial crisis. This trend was reversed however in late 2010 as they became net borrowers once more.

Chart 12 shows how non-financial corporations' funding sources have altered since the financial crisis and recession. From Q3 2004 onwards funding through loans tended to be proportionately higher than equity funding. However from Q3 2008 onwards the proportion of funding in the form of loans began to decline, and from Q1 2010 onwards non-financial corporations received proportionally more of their funding in the form of equity as opposed to loans. This trend is in line with the CSO *Access to Finance Survey* (2011a) which found that successful loan applications from credit institutions declined from 90 per cent in 2007 to 50 per cent in 2010, reflecting tighter credit controls by banks.

**Chart 12:** Non-Financial Corporate Funding




Source: Quarterly Financial Accounts.

### *4.4 Financial Corporations' Net Lending/ Borrowing*

Financial corporations[7] were net borrowers between Q1 2007 and Q3 2008, relying primarily on the rest of the world to fund their expansion. As the financial crisis intensified however, and it became more difficult to access the money markets for funding, this trend reversed from Q4 2008 onwards, as depicted in Chart 8.

Irish credit institutions grew rapidly in the years preceding the financial crisis. Anglo Irish Bank and Irish Nationwide grew by an average annual rate of 36 per cent and just over 20 per cent respectively, between 1998 and 2007 (Honohan, 2009). Credit institutions relied on funding from non-residents to finance much of this expansion. Chart 13 shows the rapid increase in the banks' liabilities with the rest of the world. This trend however was reversed in late 2008 as the global interbank markets froze as a result of the international financial crisis. Despite the introduction of a government guarantee of all Irish banks' liabilities in September 2008, Irish banks continued to find it difficult to access funding from international investors from 2009 onwards, amidst concerns that the over-exposure of some banks to the property market was a serious problem. Consequently, Irish banks have received unprecedented support from the Irish Government and from the ECB so as to meet their funding requirements.

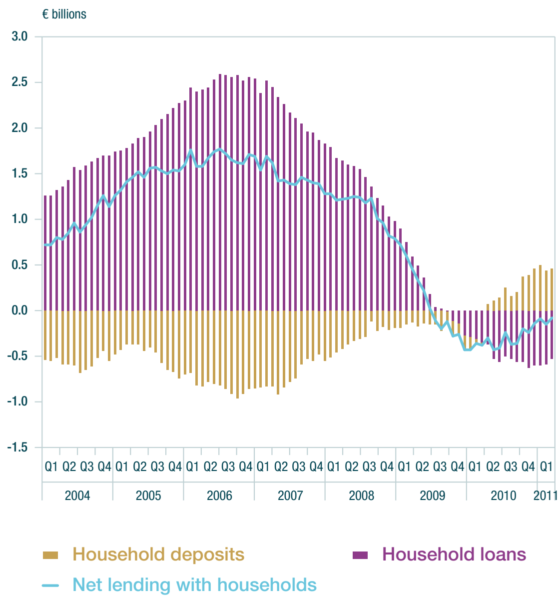
As discussed in section 4.2, Irish households have been reducing their debt levels since Q1 2009. The repercussions of this trend for credit institutions are evident from Chart 14. The credit institution sector had been a net lender to households up to July 2009, as they provided the sector with financing. This trend has since reversed however, as credit institutions are now net borrowers from the household sector who are reducing debt levels, thereby reducing the value of assets held by the banking sector.

**Chart 13:** Credit Institutions' Net Financial Assets with Non-Residents (stocks)


Source: Money and Banking Statistics.

7 Financial corporations comprise of the Central Bank, credit unions, money market funds, credit institutions, financial auxiliaries, other financial intermediaries and insurance corporations and pension funds.

**Chart 14:** Credit Institutions' Net Lending/ Net Borrowing vis-a-vis the Household Sector (transactions), 12-month moving average




Source: Money and Banking Statistics.

### *4.5 Non-Residents' Net Lending/ Borrowing*

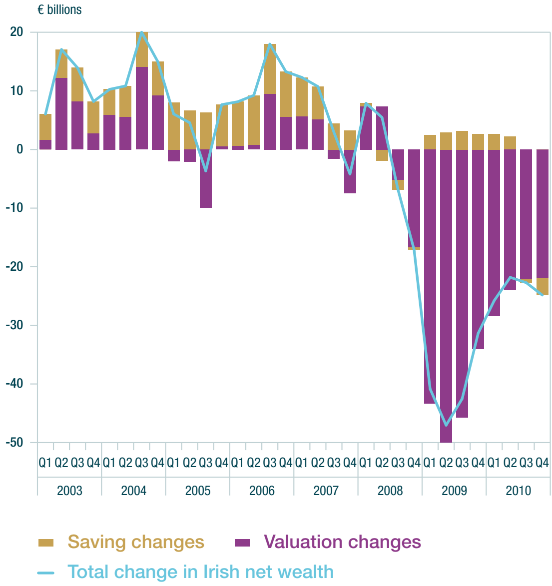
Between Q4 2006 and Q1 2009, the resident sectors combined had a net borrowing requirement, largely due to the rapidly expanding financial sector, which required funding from the rest of the world to finance its activities. Chart 8 shows a reversal of this trend from Q2 2009 to Q2 2010, as access to funding from the rest of the world became scarcer. Since Q3 2010, the domestic sector has been a net borrower once more. The higher financing requirement by Irish residents from the rest of the world predominantly reflects the increased funding needs of the Government sector. At end Q4 2010, 82 per cent of long-term Government bonds were held by non-residents. Higher funding needs by the Government sector from the rest of the world were offset, to some extent, by lower financing requirements by credit institutions, as banks reduced debt held with the rest of the world.

Net lending/borrowing trends illustrate a marked change in the behaviour of the institutional sectors of the economy in response to the financial crisis. Households, Government and the financial sector have all reversed their pre-crisis behaviour to adapt to the changing economic environment. Households and the financial sector became net lenders from Q4 2008 onwards, as both sectors are undergoing a process of deleveraging to reduce their pre-crisis debt levels. The deleveraging undertaken by Irish credit institutions has contributed to a reduction in net external liabilities, notwithstanding the increased external borrowing of the Central Bank from the Eurosystem. In contrast, the Government has become a net borrower, reflecting substantial financing requirements as a result of the banking crisis and the weaker economic environment.

## 5 The Contribution of Valuation Changes and Savings to Total Net Wealth

This paper has shown that since late 2008, a significant decline in net wealth has occurred due to declining asset values. In addition, institutional sectors have markedly altered their borrowing and investing behaviour since the financial crisis began. The relative contributions of valuation changes and savings behaviour to total Irish net wealth is depicted in Chart 15. The chart shows that most of the wealth lost by Irish residents since 2008 has been as a result of the enormous declines in asset values as outlined in section 3. Increased savings by Irish residents during 2009 and early 2010 contributed towards higher net wealth. This trend was however, reversed in Q3 and Q4 2010 as the domestic Irish resident sectors became net borrowers, largely as a result of higher Government borrowing over the period. Chart 15 clearly shows that despite the generation of savings since early 2009, net wealth has continued to decline given the much larger fall in asset values, largely reflecting the continued weakness in property assets.

**Chart 15:** The Determinants of Valuation and Savings Changes to Irish Net Wealth, 4-quarter moving average




Sources: Quarterly Financial Accounts and internal calculations.

## 6 Conclusions

This paper has shown that the decline in Irish net wealth since Q3 2008 has been considerable, amounting to around 1.8 times GDP. All institutional sectors of the economy have suffered declines in their net wealth. Households have, however, endured by far the largest drop in their net wealth largely due to declining housing asset values.

The financial crisis and the recession has also caused institutional sectors to significantly alter their net borrowing and lending behaviour. The Government sector has substantially increased net borrowing, as it provided capital injections to the financial sector and adapted to a worsening economic environment. In contrast, the household and financial corporate sectors have both become net lenders as they reduce high debt levels accumulated since the crisis. This shift in behaviour is important, because it can have implications for the funding of institutional sectors. Although the domestic sectors have been accumulating savings in most recent quarters, net wealth continues to decline, as the savings generated are offset by the much greater declines in asset values, particularly housing assets. This destruction of wealth across the economic sectors dispels the myth that for every 'loser' in the crisis, there was a corresponding 'winner'.

## References

CSO (2010), 'Survey on Income and Living Conditions (SILC) 2009', Central Statistics Office, November, www.cso.ie.

CSO (2011a), 'Access to Finance Survey, 2007 and 2010', Central Statistics Office, May.

CSO (2011b), 'Residential Property Price Index', Central Statistics Office, June.

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

Duffy, D. (2010), 'Negative Equity in the Irish Housing Market', The Economic and Social Review, Vol. 41, No. 1, Spring, pp 109 – 132.

Foote, C., K. S. Gerardi and P. S. Willen (2008), 'Negative Equity and Foreclosure: Theory and Evidence', Journal of Urban Economics, Vol. 64, No. 2, pp 234 – 245.

Gros, D. (2011), 'Ireland and the Euro Crisis: Is There Light at the End of the Tunnel?', presented at IIEA Conference, Dublin, April.

Honohan, P. (2009), 'Resolving Ireland's Banking Crisis' The Economic and Social Review, Vol. 40, No. 2, Summer, pp 207 – 231.

Honohan, P. (2010), 'The Irish Banking Crisis: Regulatory and Financial Stability Policy: 2003-2008', www.centralbank.ie.

IMF (2009), 'World Economic Outlook: Crisis and Recovery', www.imf.org, April.

Koo, R. C. (2008), 'The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession', John Wiley and Sons.

Lin, J. Y. (2009), 'How to Solve the Global Economic Crisis: Making Fiscal Stimulus Packages Work Across the World', speech given at Peterson Institute for International Economics on February 9.

NAMA (2011), 'NAMA Quarterly Report, 31st December 2010', www.nama.ie, May.

O'Sullivan and Layte (2011), 'Income and Asset Levels of Older People'.

Reinhart, C. M. and K. S. Rogoff (2009), 'This Time is Different: Eight Centuries of Financial Folly', Princeton University Press.

Roxburgh, C., S. Lund, T. Wimmer, E. Amar, C. Atkins, J. Manyika, J. Kwek and R. Dobbs (2010), 'Debt and deleveraging: The global credit bubble and its economic consequences', January, McKinsey Global Institute.