Irish Households: Assessing the Impact of the Economic Crisis

Mary Cussen and Gillian Phelan*

Abstract

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

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

1. Introduction

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

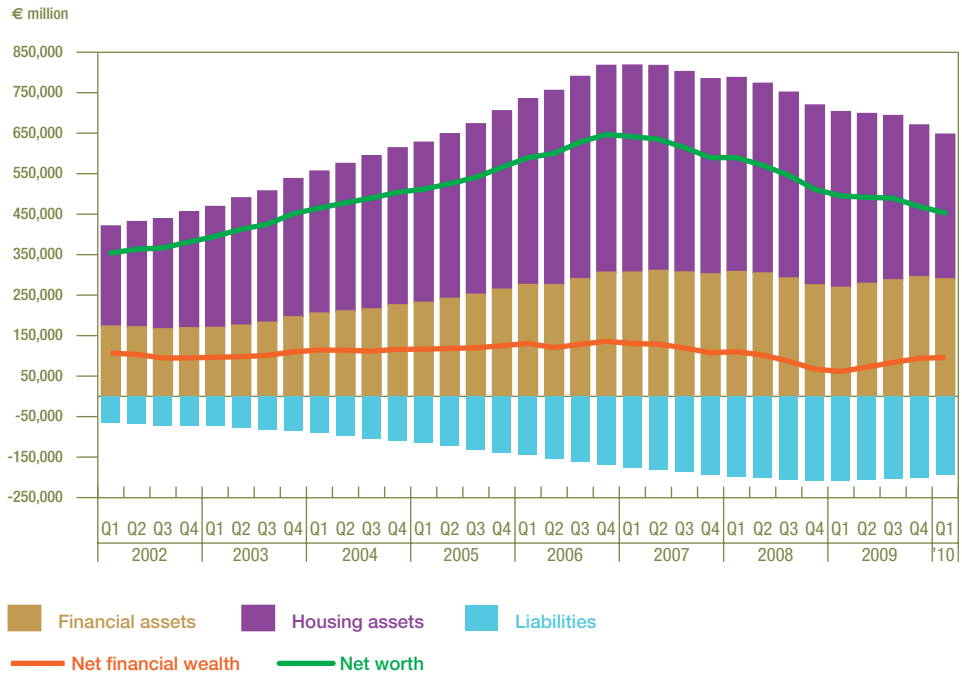
This article therefore, considers the interaction between households' investment and indebtedness, and the overall impact on saving in the context of the economic crisis. The analysis is based on *Quarterly Financial Accounts* for Ireland, published for the first time by the Central Bank in July 2010.[2]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

2. Household Net Worth and Portfolio Composition

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

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

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



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

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

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

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

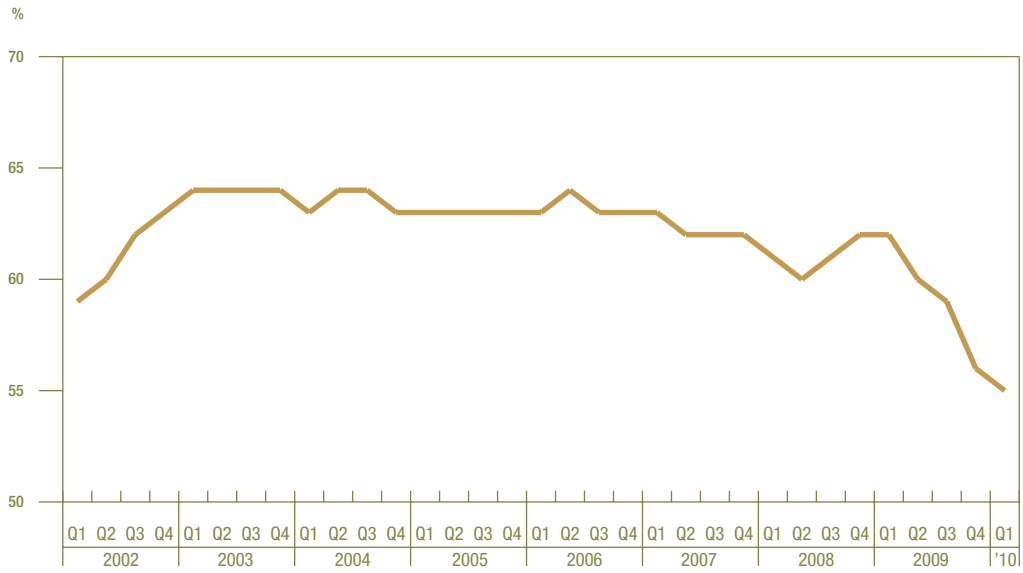
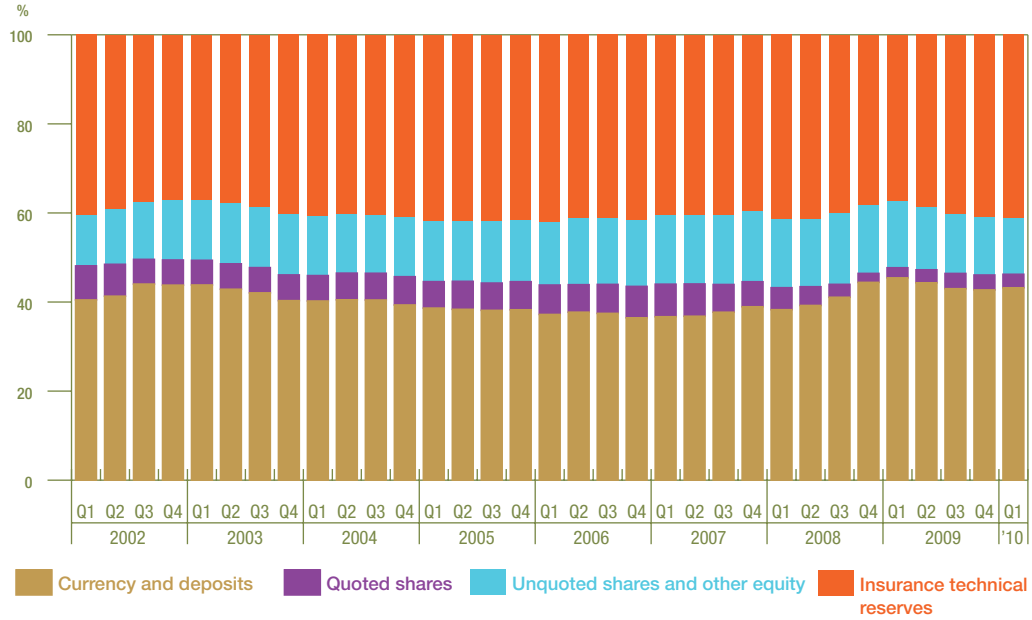


Chart 2b: Portfolio Composition of Household Financial Assets, Q1 2002 – Q1 2010 [6]



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

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

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

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

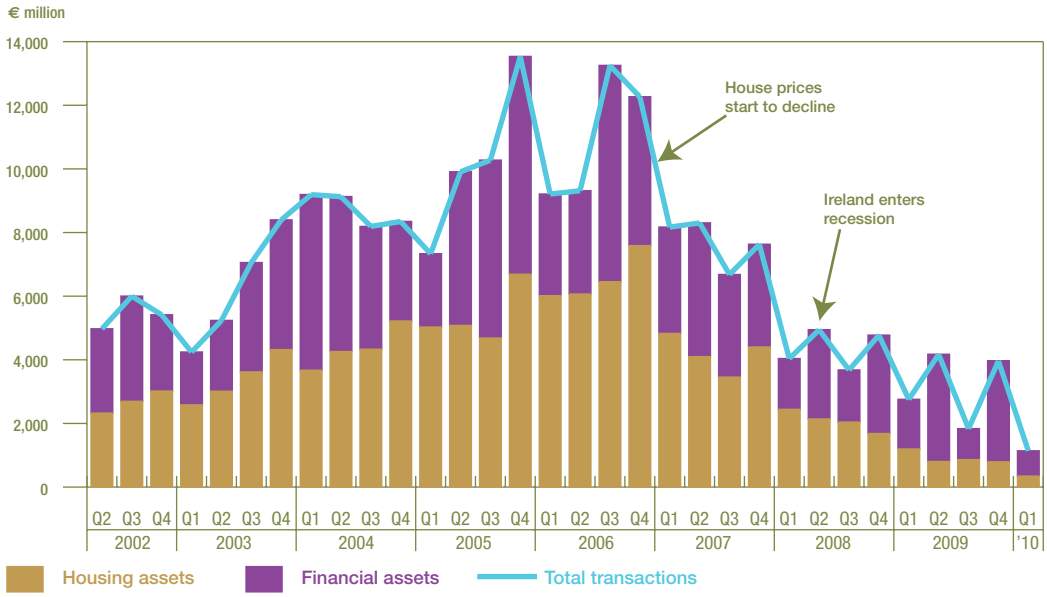
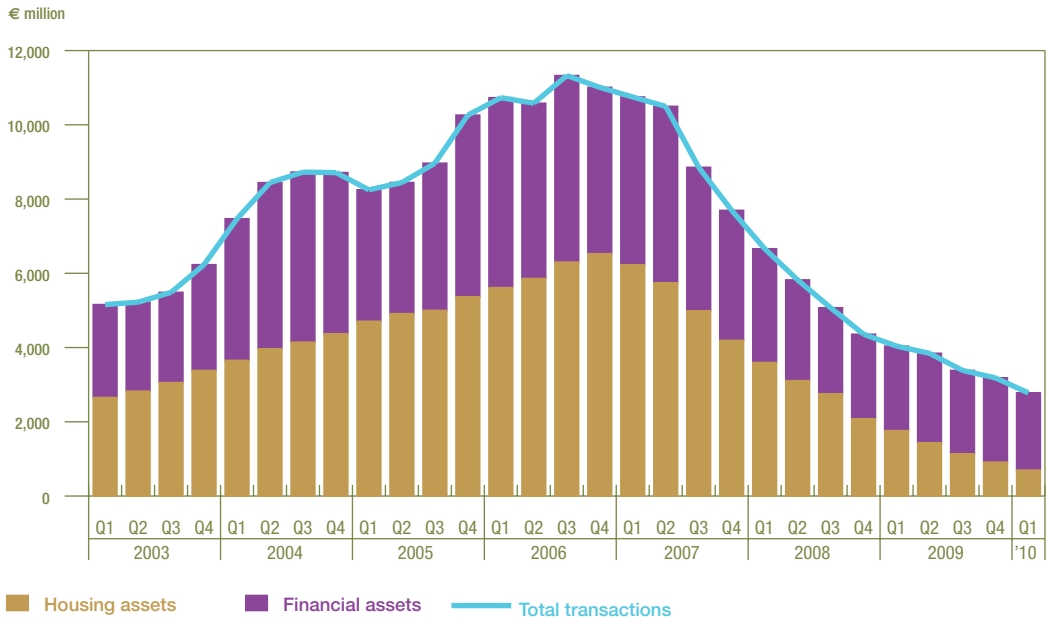


Chart 3b: Transactions in Housing Assets and Financial Assets (4-quarter moving average), Q1 2003 – Q1 2010[7]



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

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

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

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

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

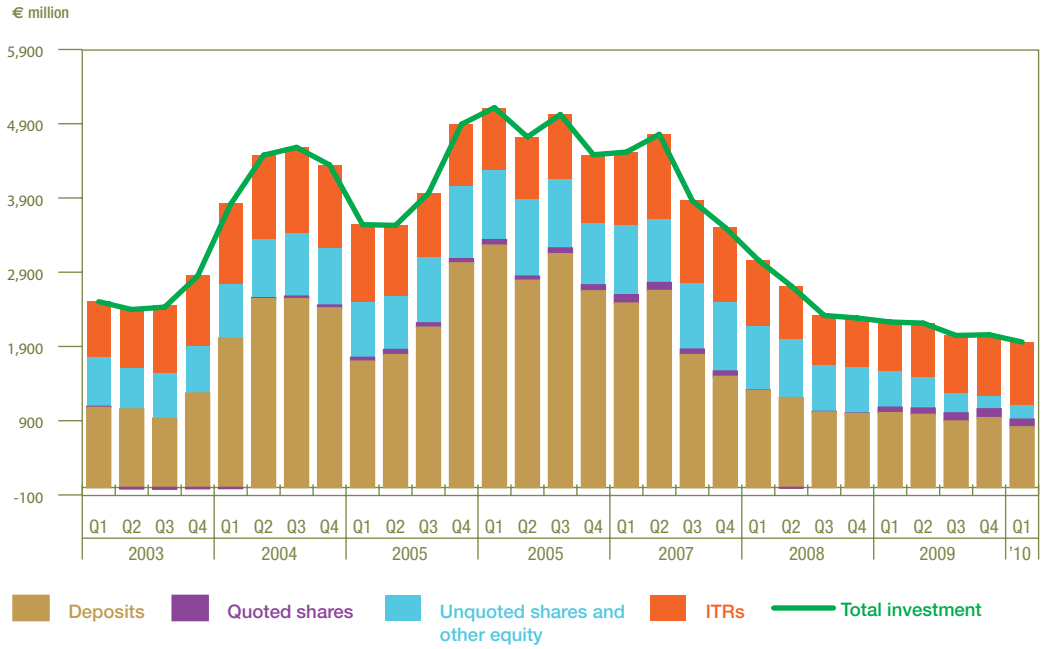
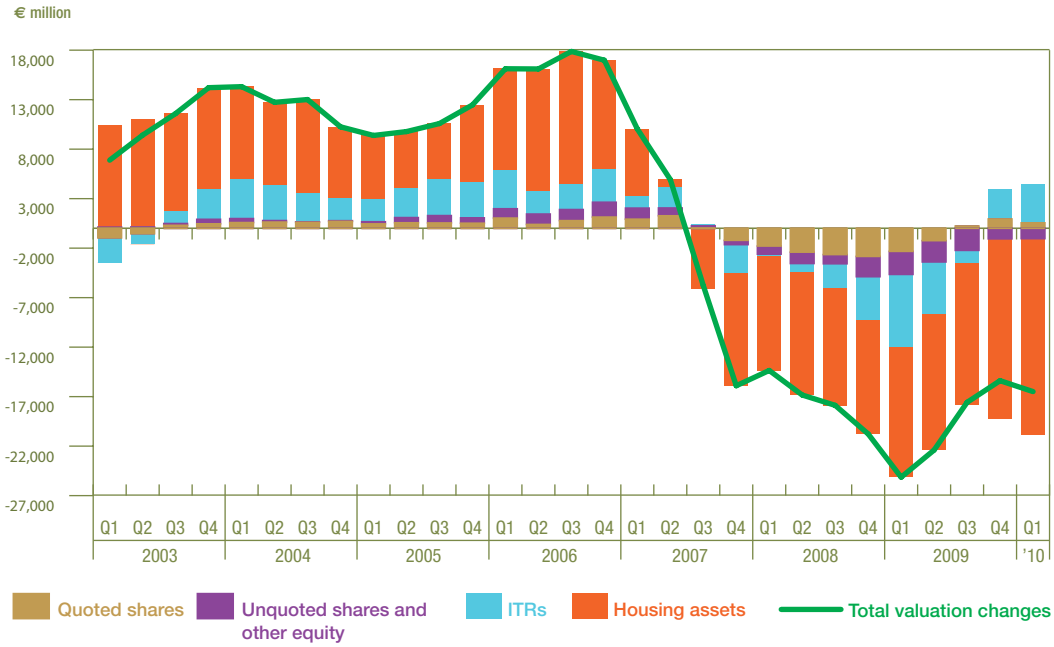


Chart 5: Valuation Changes in Household Assets (4-quarter moving average), Q1 2003 – Q1 2010



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

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

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

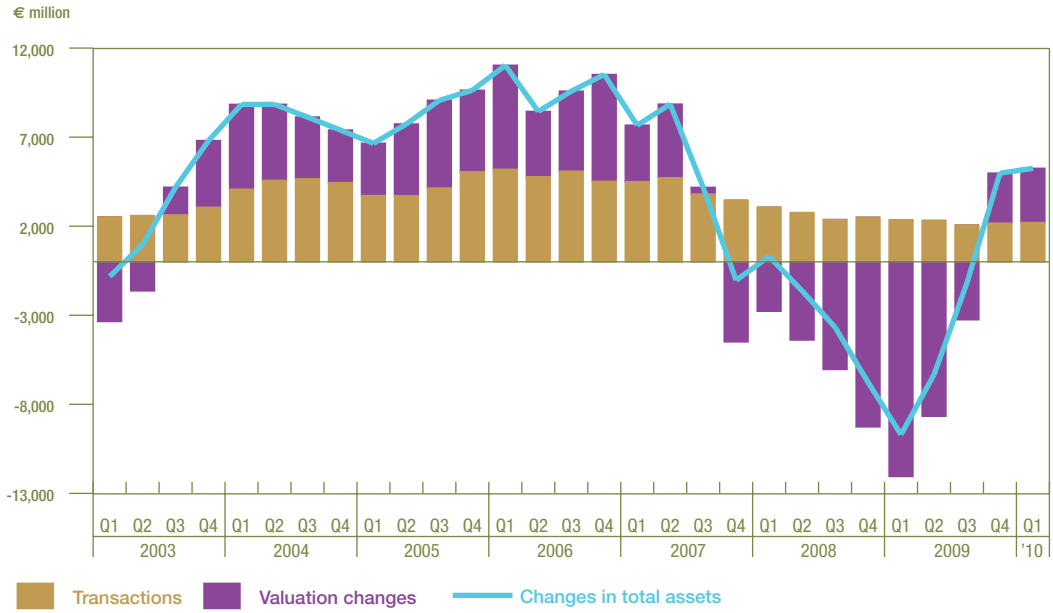
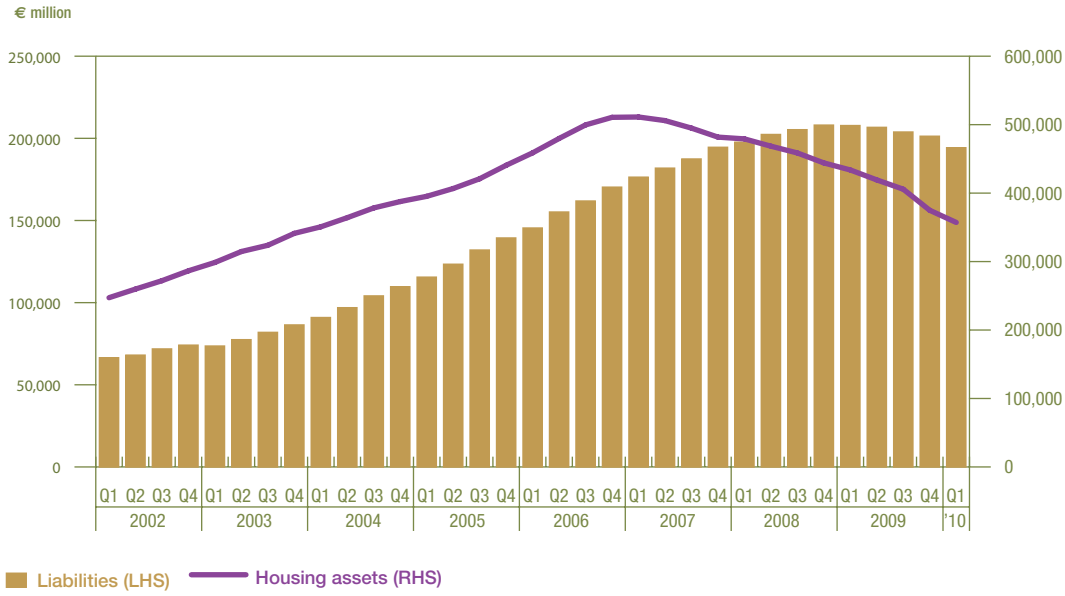


Chart 7: Trends in Total Household Liabilities, Q1 2002 – Q1 2010

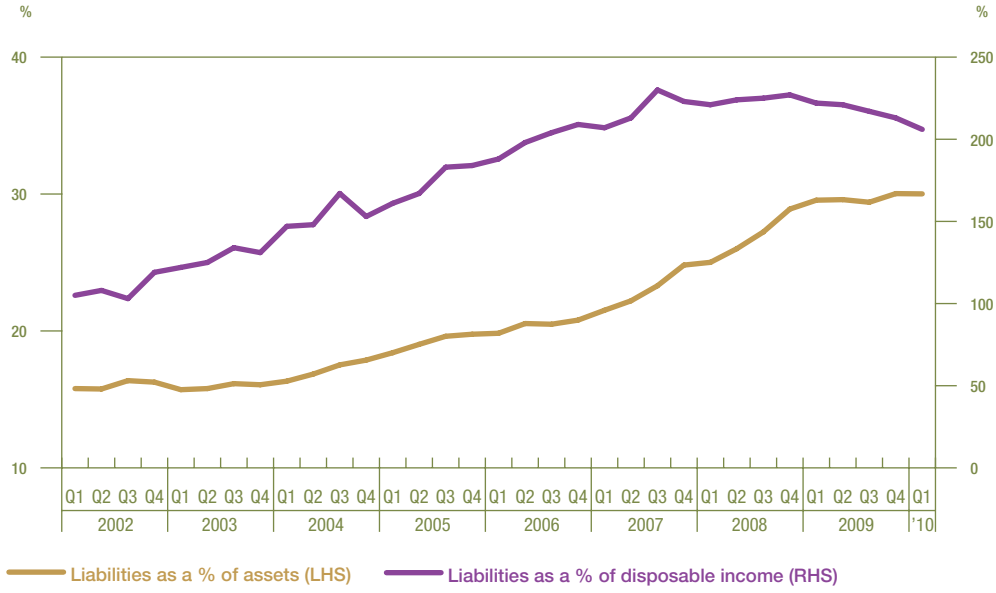


3. Household Liabilities

3.1 Indebtedness

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

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



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

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

3.2 Leverage ratios

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

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

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

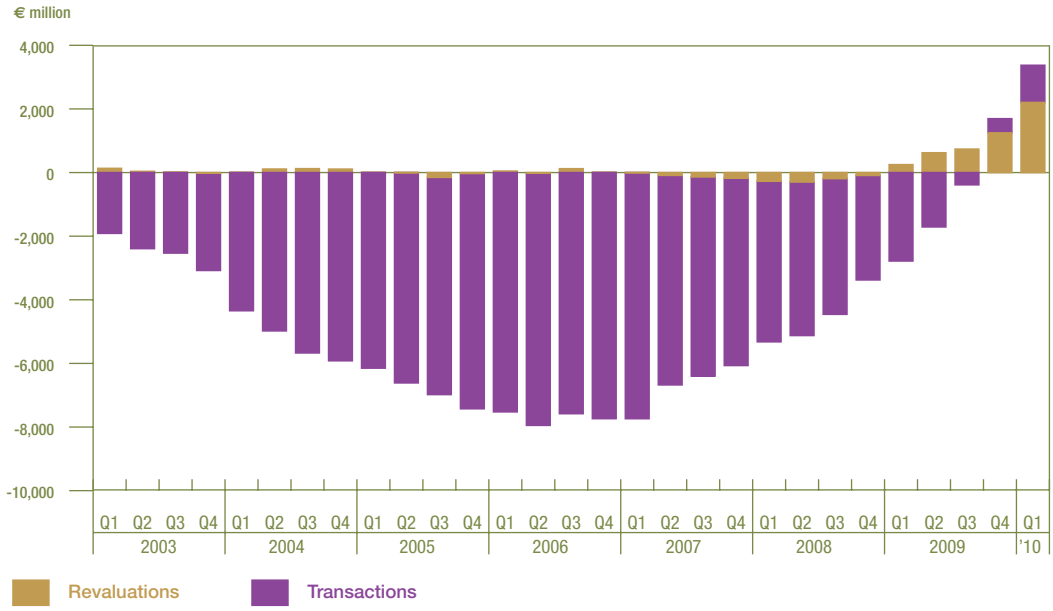
3.3 Deleveraging

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

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

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

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



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

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

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

4. Household Saving

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

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

Box 1: What is household saving?

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

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

Funds raised — Assets accumulated

Therefore, saving can then be expressed as follows:

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

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

Saving ratio = Saving ÷ Disposable income

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

4.1 Determinants of household saving

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

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

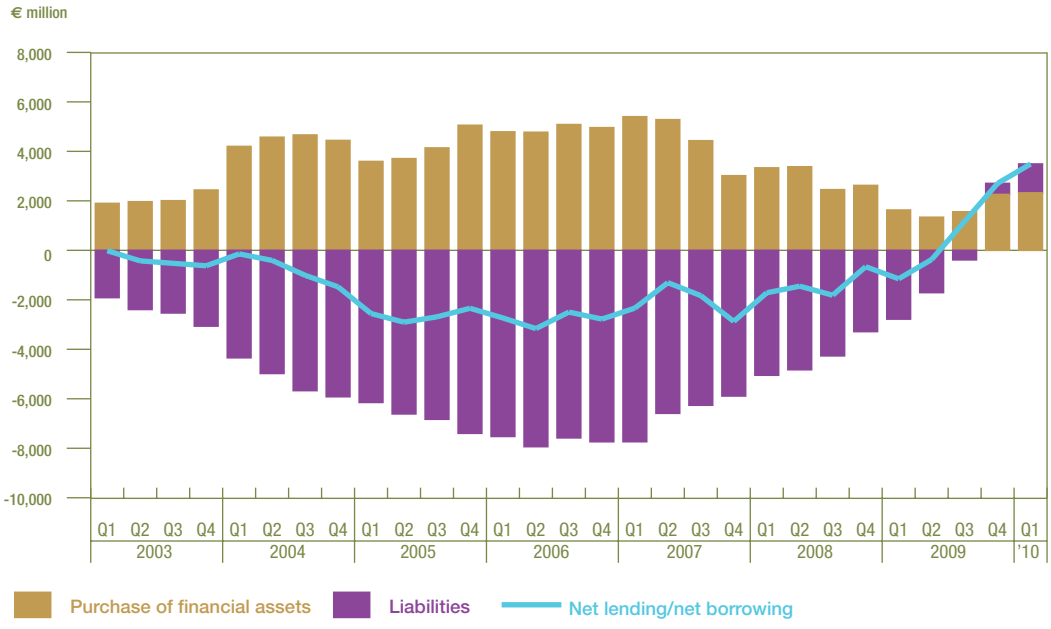


Chart 11: Trends in Household Saving (4-quarter moving average), Q1 2003 - Q1 2010

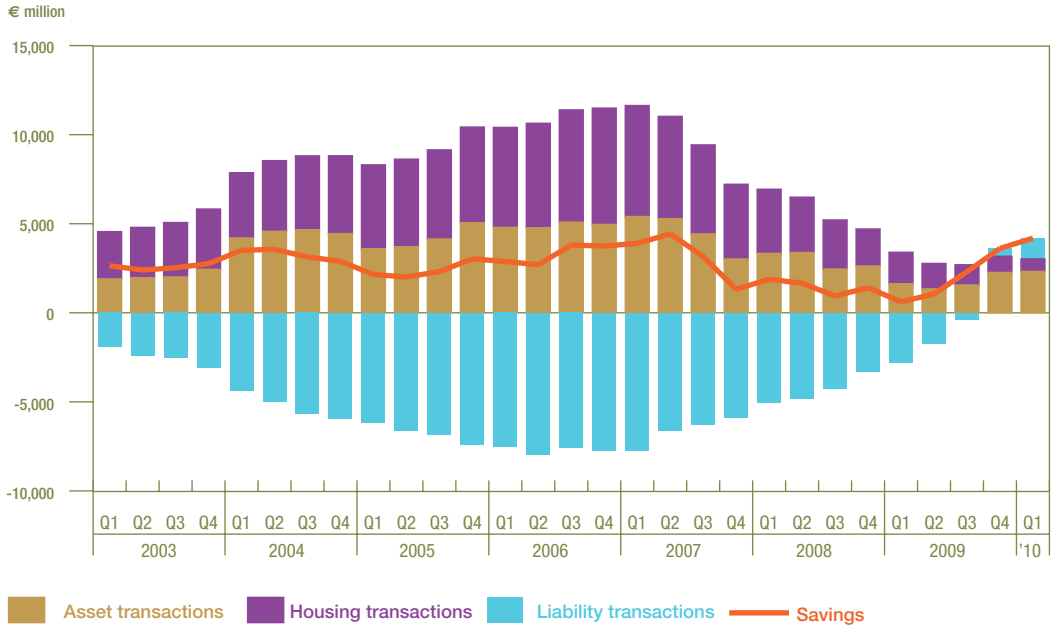
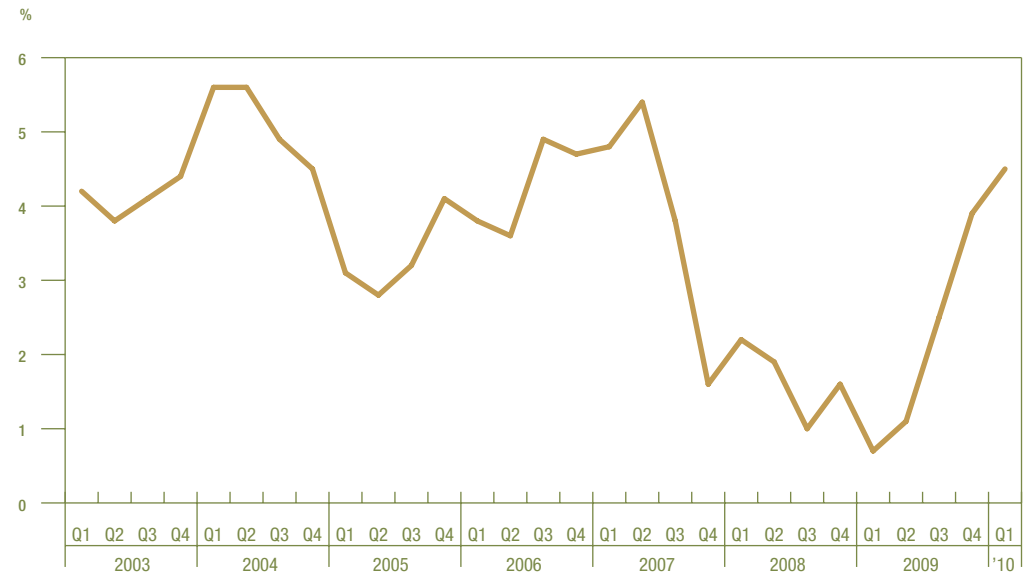


Chart 12: Household Saving Ratio (4-quarter moving average), Q1 2003 – Q1 2010



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

economic slowdown; households have now become net lenders.

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

4.2 Household saving ratio

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

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

Conclusions

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

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

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

Annex 1

Household Balance Sheet (€ million), Q1 2010

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

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

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

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

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