

Housing finance in the Netherlands – the impact of structural developments on households and banks

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1. Introduction

In this paper we aim to describe how structural developments have affected the behaviour of households and banks with respect to the financing of home ownership. These structural developments relate to the housing market directly – for example the large extent of government interference – and to indirect factors. We mention supervisory rules, ie the impact of the Basel-I Accord, the seemingly perennial decline of inflation and the increased labour participation by women (chapter 2). Against the background of these structural factors we analyse the often interrelated consequences of the demand for mortgage loans, house prices, rising household debt ratios, securitisation by banks and other financial institutions, and the interest sensitivity of households (chapter 3). Finally, we review the impact on households and banks (chapter 4). At the end we offer our conclusions (chapter 5).

2. Structural developments

2.1 Government policy

For many decades, government policy has dominated the housing market in the Netherlands. The range of government measures encompasses both financial instruments – income tax deductions and subsidies – and regulatory activities. Examples of the latter are detailed urban development criteria and regulations affecting the environment, air quality and urban aesthetics. During the last 35 years, government policy has focused on making good (rental) housing affordable to low income classes and stimulating home ownership (box 1). Tenants enjoy caps on the level of rents, as these are regulated by a scoring system. They also benefit from ceilings to the annual rent increase – an issue that is hotly debated each year in the Dutch Parliament. Moreover, the government provides rent supplements for lower income categories. Home owners, on the other hand, may deduct interest payments on mortgage loans from taxable income. Further, potential first-time home owners are entitled to subsidies when they buy their first house. These measures have strongly stimulated the demand for housing.

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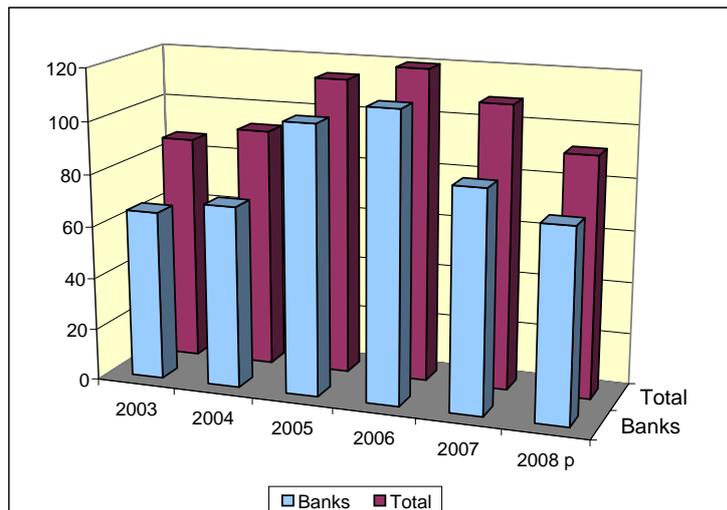
Box 1

Structural characteristics of the Dutch housing market

Around 16.5 million people live in the Netherlands. Because the area is small, the country is densely populated: 1000 inhabitants per square kilometre. This figure is only exceeded on islands like Taiwan or Hong Kong. Although the largest cities each accommodate fewer than 1 million people, together they form one agglomeration – the Randstad – that houses 6 million people. To a certain extent, density is reflected in tight housing conditions. In 2003, 419 dwellings per 1000 inhabitants were available. Neighbouring countries like Belgium and Germany have 462 and 472 dwellings per 1000 people, respectively. Spain and Portugal exceed 500.² 57% of the Dutch housing market is made up of private homes. Rental housing has a 43% share, three quarters of which is owned by housing corporations (social housing), and the remaining part by private landlords (buy-to-let market). Due to the government's rent policy (on, among other things, maximum rents, ceilings on annual rent increases, rent subsidies), tenants are not encouraged to circulate, so they live for many years – sometimes their whole life – in the same rented house. As a result the subsidised rental market is characterised by waiting lists and long waiting periods. Many people, therefore, have recourse to private homes.

The average house price is over EUR 240,000. The wealth of an ordinary household is about EUR 58,000 (deposits and securities). Households generally have to borrow in order to buy. They borrow from banks or their subsidiaries, insurers, pension funds and other mortgage providers without a deposit base. Mortgage loans do not have to be obtained directly from originators: they can also be taken at intermediaries that offer a wide array of lenders and products. Banks are the most important providers: in 2007 their market share for new mortgages was 75% (figure 1). Providers offer their customers a wide choice of mortgage types: linear, annuity, life, savings, interest-only, equity etc. Presently, interest-only loans are popular (2006: 44% of total). This marks a substantial shift with respect to some 30 years ago, when repayment of the principal was seen as normal, and annuity loans were standard. Contract periods are usually 30 years. The interest on mortgage loans varies from variable rate to fixed rate for more than 10 years. Government stimulates private home ownership by allowing home owners to deduct interest payments on their mortgage loan from taxable income.³ On the other hand, owners pay residential property tax and have to add a fraction of the value of their property to taxable income. Further, a transaction tax exists: buyers of an existing house have to pay 6% over the purchase price. This tax restricts home owners' mobility.

Figure 1
New mortgage contracts
EUR billion



Source: DNB.

² Nyffer 2008, p 22.

³ Conditional on a maximum length of 30 years and for the main residence (not for holiday cottages). There are further restrictions on tax deductibility for owner-occupiers who move to another home.

Unfortunately, housing supply has not kept up with the growth in demand. This is mainly due to time-consuming building permission procedures and complex regulations for constructing new dwellings, which has led to a shortage of construction sites and long construction times. As a consequence, new housing production has been unable to react to the price increase. The price of existing dwellings rose fourfold, while housing production actually declined. The Netherlands is rather unique with this inverse relationship between price and supply.⁴

Of course, this government policy of stimulating both the demand for rental dwellings and owner-occupied dwellings is a costly affair. The Netherlands Bureau for Economic Policy Analysis estimates that an amount of EUR 29 billion (in 2006) is involved, evenly divided over rental subsidies and subsidies of home ownership.⁵ The combination of these subsidies has resulted in rigidities in the Dutch housing market that are difficult to change because political parties have rallied behind interest groups. The Political Agreement behind the present government explicitly states that during this government's term there will be no change in housing policy. Demands for adjusting tax deductions for interest payments on mortgage loans have been dropped in exchange for maintaining the present system of rental subsidies. The result is stalemate.

2.2 Capital requirements Basel-I

In the first Capital Accord (1988) minimum requirements were laid down for the amount of own capital banks had to hold. Own capital should be at least 8% of the sum of the risk-weighted assets. For residential mortgage loans a weight of 50% applied. So, capital requirements were 4% of the amount of the claims. It turned out, however, that for the majority of mortgage loans the actual risk was lower than embodied in this requirement. Banks increasingly recognised they held too much capital against these low-risk assets. Therefore, they sought ways to reduce capital costs. Among other things, they found a solution by making mortgage loans marketable. Banks bundled these loans and sold them to entities, Special Purpose Vehicles (SPVs), which were deliberately created for this end. The SPVs bought the original assets and financed this by issuing mortgage-backed securities (MBS). This process is known as securitisation.

The advantages of securitisation were manifold: banks could reduce the pressure on the balance sheet to enhance their solvency position. The capital freed could then be used to finance other activities with a higher risk profile (and higher return). Another motive was to bring down financing costs. The SPV that buys the assets is usually assigned a high rating on the basis of the specific collateral provided. Banks used securitisation furthermore as a risk management instrument in order to mitigate the interest rate mismatch (caused by the difference between rates on long-term claims and short-term liabilities) or to reduce exposures to certain sectors or debtor categories. Finally, securitisation was used to achieve greater diversity of capital sources or to tap into new groups of investors.⁶

⁴ IMF (2006), p 74. See also DNB Quarterly Bulletin, March 2008, p 50.

⁵ CPB (2006), CPB (2008a).

⁶ DNB Statistical Bulletin, December 2002, p 17.

2.3 Decline of inflation

In many industrialised countries, inflation has declined since the start of the 1980s. This trend can be attributed to various factors, such as a stronger commitment by monetary authorities towards price stability, the adoption of more prudent fiscal policies – for European countries, these policy shifts were strongly encouraged by the establishment of EMU – and the global liberalisation of markets for goods, services and labour.⁷ Together with the reduction in inflation level the volatility decreased too. As a result, capital market rates and mortgage interest rates declined. This stimulated both the demand for and the supply of mortgage loans. Lower interest rates for households imply that they could afford to take up larger loans. They raised their leverage. Also, from the point of view of financial institutions households became more creditworthy. To maintain their market share, they scaled up the supply of residential mortgage loans. Lower interest rates in competing markets also induced financial institutions to speed up their search for yield and provide more loans in the mortgage market.

2.4 Increase in labour market participation of women

In the past 25 years, the participation of Dutch women in the labour market has increased from 33% in 1980 to 61% in 2007. This spectacular rise is manifested mostly in part-time jobs. Because males retained their full-time jobs, the household income increased structurally. As a consequence, households were able to borrow larger amounts for house purchase. This development was facilitated on the supply side. Banks progressively began to base their offer for mortgage loans on household income, instead of the income of the wage earner – mostly the male. As a result, demand for housing was stimulated.

3. Results of structural developments

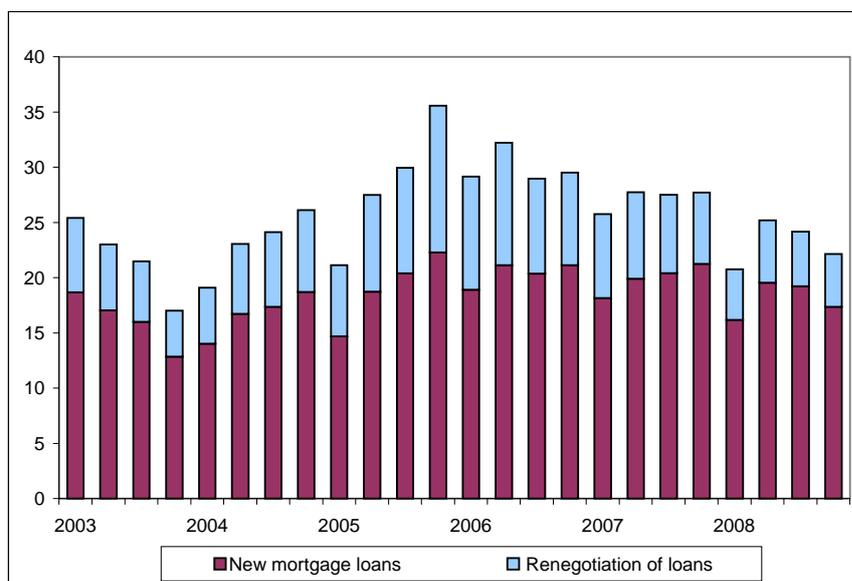
The above-mentioned structural developments have greatly affected the financing of the housing market in the Netherlands in recent years. Both sectors involved, households and financial institutions (mainly banks), have changed their behaviour. Of course, this has had consequences for the judgement of several aspects of their financial stability.

3.1 Surge in new mortgage loans

A major characteristic of the housing market in recent years was the large increase in borrowing capacity by households for house purchases. For the period 2003–07 this can be illustrated by the rise in new mortgage contracts (figure 2). The increase in new contracts was partly due to renegotiated mortgage loans. For instance, when interest rates declined, many borrowers took up new, lower interest rate loans and redeemed old, higher interest rate loans. It is estimated that 20 to 25% of new contracts were renegotiated. Still, a large increase in new loans resulted.

⁷ CGFS 2008, p 18.

Figure 2
New residential mortgage contracts
 EUR billion

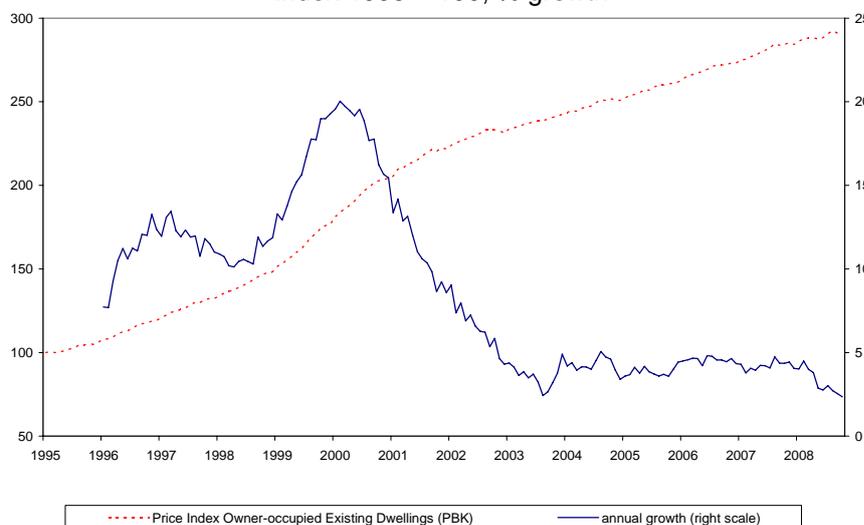


Source: Land Registry.

3.2 House price increases

The combination of stimulating demand across the board and a nearly frozen supply of new dwellings led to strong house price increases (figure 3). See also box 2 on the issue of measuring house prices. Towards the end of the last century, prices on the Dutch housing market exploded. In 1999, price increases peaked at around 20% on an annual basis. More recently, prices rose at a more moderate rate of between 3 and 5%. For more than 20 years, house prices have been growing faster than the general rate of inflation. Higher house prices also stimulated higher debt. In this respect a risky vicious circle was looming. However, lower economic growth since the burst of the Internet bubble and the accompanying decline in ECB interest rates eased tensions.

Figure 3
House prices
 Index 1995 = 100, % growth



Source: Land Registry.

Box 2

House price indexes in the Netherlands

Since the beginning of 2008, Statistics Netherlands (CBS) and the Dutch Land Registry Office (Kadaster) publish the Price Index Owner-occupied Existing Dwellings (Dutch acronym PBK), which they calculate in a common project. The PBK is the successor to the House Value Index Kadaster (Dutch acronym WIK), which had originally been developed by the Land Registry.

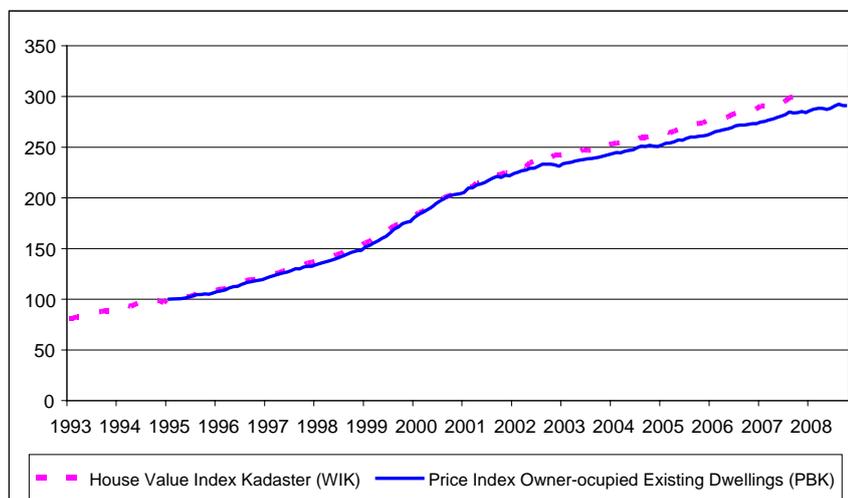
The PBK is based upon the Sale Price Appraisal Ratio method (SPAR). The PBK is calculated by combining information from two sources: sale prices recorded by the Land Registry and officially appraised values that are updated on a regular basis. (The latter are determined by municipalities, which use the appraisal values as the base for the residential property tax.) In essence, the SPAR calculates the price increase of houses in the current period compared to their appraisal value in the reference period after correction for the under- or overestimation between the actual selling price and the appraisal value in the reference period.

The WIK was based on the Repeat Sales Method. It was calculated from an estimation method based on sale prices that were recorded by the Land Registry and applied to dwellings that had been sold at least twice in the period to which the index applied.

Both SPAR and Repeat Sales Method have a strong advantage over alternative house price indices based on hedonic methods in the sense that they are rather easy to calculate. In a comparison between the two methods, however, SPAR scores higher than the Repeat Sales Method. The PBK can be considered a price index as the appraisal value is adjusted to quality changes of the house (for example through extensions or adding dormers – both very popular in the Netherlands) on a regular basis. Of course, the quality change is not captured if it occurred after the last appraisal date. In that case, however, the house sale may be left out as it results in being an outlier. The WIK is a value index. Of course, it compares the sales prices of the same house, but because of the longer period under consideration quality changes may play a larger role. Another advantage of the PBK is that data once published are not revised. WIK data are revised monthly as they are based on an estimation method that continuously adds new information that also affects the outcomes of previous periods.

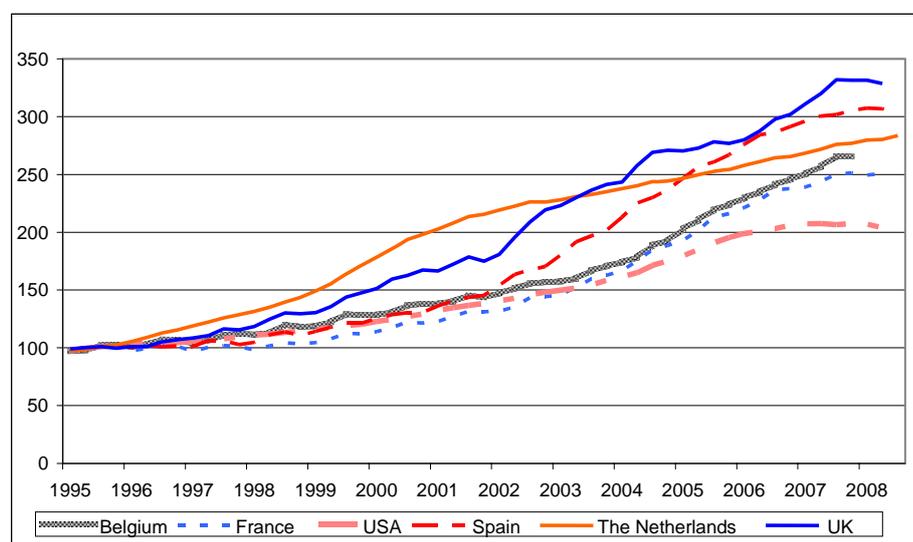
PBK and WIK show a rather similar development over the last decade or so (figure 4). However, the PBK is consistently growing a little more slowly. The difference is less than 0.4% per year. This is probably due to quality changes, for which the PBK provides a better correction. Interestingly, Bourassa et al argue that a SPAR index tends to increase more strongly than a Repeat Sales Index. In their view, houses that are sold more often tend to be of lower quality – typically houses for starters on the housing market – which rise less in price and, therefore, reduce the index. They found a confirmation for this assumption in New Zealand. Apparently, in the Netherlands the continuous drive by owners to improve and expand their homes is predominant.

Figure 4
Two house prices indices
January 1995 = 100



The strong increase in house prices in the Netherlands was not exceptional. In recent years, booming house markets have led to even stronger price rises in the United Kingdom and Spain (figure 5). Over the last year, house price increases levelled off in many countries. Prices even started to decline in quite a few countries, of which the United States, United Kingdom and Spain are most conspicuous. This led the IMF to assess the risk for decreasing house prices in developed economies.⁸ One of its conclusions was that house prices in the Netherlands were about 30% higher than was justified by fundamental developments. The publication of the IMF report led to strong – occasionally even acrimonious – reactions, from both policymakers and market parties. Of course, commercial interests were involved too. Real estate agents fear for their turnover if expectations of falling house prices induce potential buyers to postpone their house purchases. Banks face higher funding costs in financial markets when the value of their collateral is lower. In the hot debate, one important element seemed to be lost: the IMF study related to real house prices: so the interpretation that the IMF expected that house prices would fall by 30% was wrong.

Figure 5
House price developments in 6 countries
 Index 1995 = 100



Source: BIS.

In reaction to the IMF study, the Netherlands Bureau for Economic Policy Analysis (CPB) updated its own analysis of house prices in the Netherlands. The CPB found that the present level of (real) house prices corresponded to its long-term value. So the price level could be fully explained by the regression equation it used, in which both cyclical and structural factors played a role.⁹ In the scientific debate on this issue, it was stressed that structural factors – including the interest subsidy, the changing composition of family income, and the rigidities in the housing market in general – explained the high level of house prices and that these factors would continue to push prices upward. This does not mean, however, that in a weakening economy falling house prices can be excluded. As a matter of fact, house prices

⁸ IMF (2008), Box 3.1. Assessing vulnerabilities to housing market corrections.

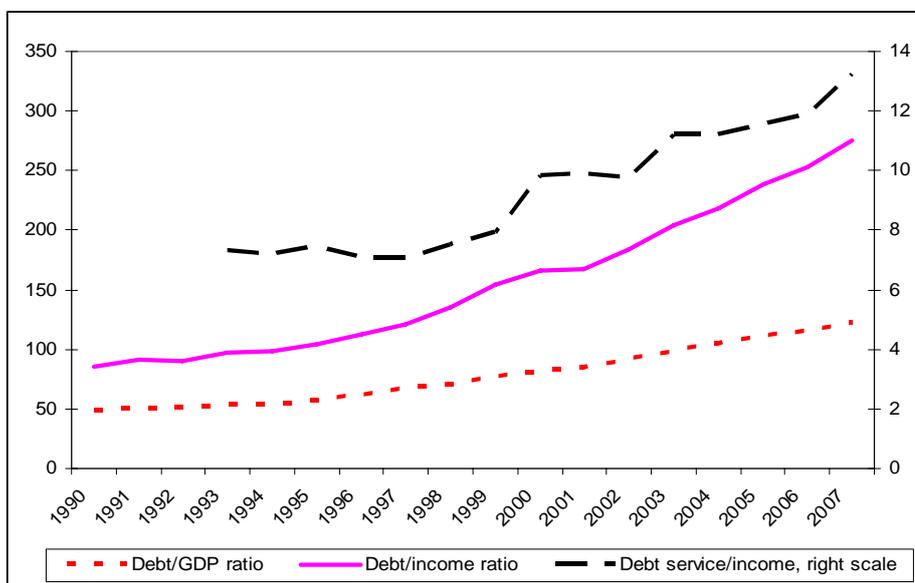
⁹ CPB (2008b), Are house prices in the Netherlands overvalued? (in Dutch only)

have levelled off completely in recent months. But in the present financial turmoil, while potential buyers postpone their decisions, the supply of new dwellings has a tendency to start falling behind as well. These two factors have opposing influences on the house price level.

3.3 Rising debt ratios

The surge in new mortgage loans has produced a rising debt/GDP ratio (figure 6). Compared with more than 10 years ago, the ratio of household debt has nearly doubled. For the most part, this was due to mortgage debt as consumer loans are a small fraction of total debt. In international perspective the Dutch level of 120% is relatively high. Only a few countries surpass it. Debt has also grown in relation to disposable household income. In 2007, household debt amounted to more than 2.5 times disposable household income. Internationally, the Netherlands is leading here.

Figure 6
Dutch household debt and debt service ratios
%



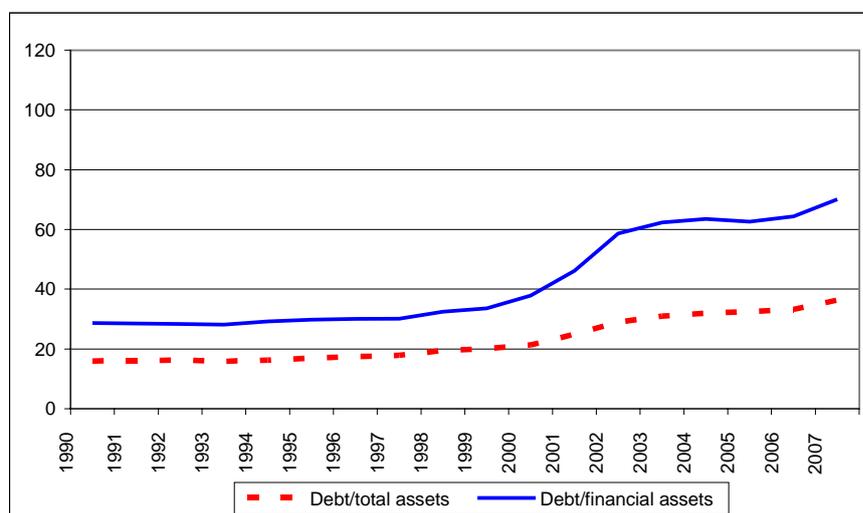
Source: DNB, nsi.

Many studies of housing finance take account of debt service payments (taken here as interest payments). The idea is that households have to service their debt out of their disposable income. After a steady level of about 7% in the 1990s, interest payments in relation to disposable income increased at the turn of the century. This occurred because of rising debt, and in spite of the mitigating effect of falling interest rates. At the end of 2007, debt service costs were 13% of disposable household income. This figure still underestimates debt service costs at an individual level, as household income also includes income earned by citizens who did not borrow any money for the purchase of their house or who live in a rented house.

Against this background, debt/asset ratios have increased since the turn of the millennium (figure 7). However, the rise was much lower than debt/income ratios. Financial assets of households have grown too. Also, non-financial wealth, mainly embodied in private homes, rose due to the price increase of dwellings. So the rise in total wealth mitigated the rise in the

debt-asset ratio to some extent. In international perspective, the Dutch debt/asset ratio is an average figure.¹⁰

Figure 7
Dutch households debt/asset ratio
 %



Source: DNB, nsi.

3.4 Securitisation via SPVs

Basel capital requirements led to the creation of a securitisation industry in the Netherlands. Its size is rather large: Dutch SPVs are responsible for 20% of European securitisations. There are several reasons for this. First, the Netherlands has a highly developed financial sector. There are large banks and also large pension funds and insurers. The Netherlands is also home to many special financial institutions.¹¹ Another reason for securitisation is the large market for mortgage loans, due to low interest rates and the strong rise in house prices, among other factors. Because many loans for house purchase were provided, this resulted in tensions on the balance sheet of mortgage suppliers. Additional financing was needed. Moreover, new entrants came into the market that financed themselves directly by bundling mortgage loans and transferring these to investors in the form of residential mortgage backed securities (RMBS). This resulted in a large supply of securitised loans. On the demand side, institutional investors were attracted in their search for yield. At the end of 2007, the balance sheet of SPVs amounted to EUR 270 billion, of which EUR 145 billion consisted of mortgage loans (figure 8).¹²

One of the major consequences of the securitisation process is that residential mortgage loans disappear from the balance sheet of originating financial institutions. This applies to true-sale securitisations. These transactions entail assets that are actually transferred to the SPV. In the case of synthetic securitisations the assets (mortgages) remain on the balance

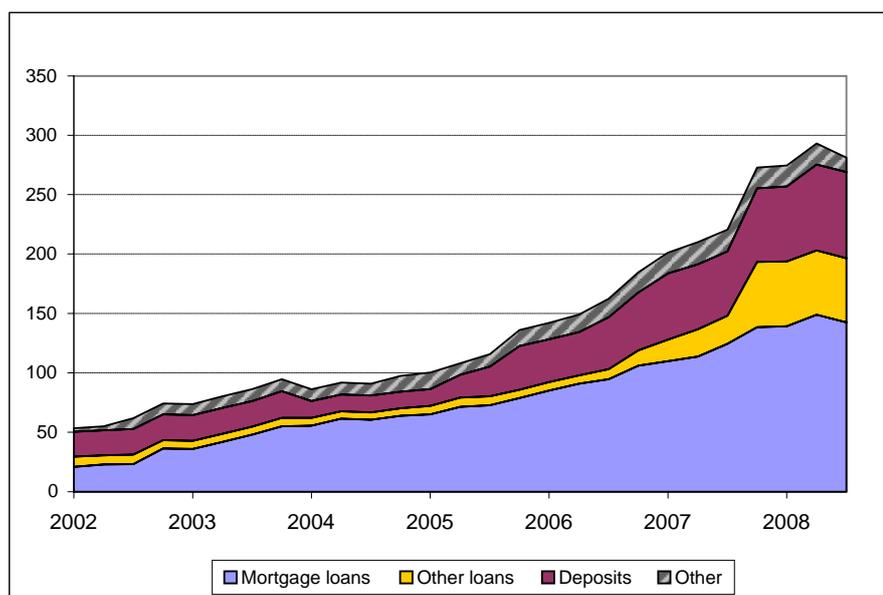
¹⁰ CGFS (2006).

¹¹ Special financial institutions (SFIs) are Netherlands based companies or institutions that specialise in raising funds from outside the Netherlands and on-lending or investing them outside the Netherlands.

¹² DNB Statistical Bulletin, June 2008.

sheet of the originator. Only the credit risk is transferred to the SPV by means of credit default swaps and credit linked notes. Banks in the Netherlands are dominant suppliers of mortgage loans. Because of true-sale securitisations, banks' balance sheets will give wrong signals. The credit growth derived from the balance sheet will underestimate the original loan supply. The calculation of total mortgage debt of households in particular might be distorted if it is derived solely from the balance sheets of banks and other important providers of mortgage loans.¹³

Figure 8
Assets of Dutch SPVs
 EUR billion



Source: DNB.

DNB collects data on securitisation transactions (see box 3). It is therefore possible to correct for these distortions. In essence, part of the balance sheet of Dutch SPVs is split between the originating loan providers. By assuming that the contribution from each group of financial institutions to the securitisation transactions will be reflected in stocks at end-of-period to the same degree, we are able to reconstruct the “true” growth of mortgage loans provided by banks. It appeared that the original amount of mortgage loans increasingly surpassed the data taken from the balance sheet (figure 9a). As a consequence, the banking data gave the wrong signals with respect to growth figures as well (figure 9b). Before and after correction for the impact of securitisation operations, the extension of mortgage loans showed a downward trend after 2001. It appears, however, that the actual growth of mortgage loans is seriously underestimated. The real growth is about twice as large as shown by the banks' balance sheet. In 2008, banking data even gave a misleading picture. Instead of a recovery of the market for mortgage loans, a further decline actually occurred.¹⁴

¹³ DNB Statistical Bulletin, December 2002, p 27.

¹⁴ Due to the financial turmoil in 2008, banks bought back part of the earlier sold mortgages. This increased balance-sheet growth.

Box 3

Compiling SPV data: the Dutch model

A special purpose vehicle (SPV)¹⁵ is a separate legal entity that buys financial assets from financial institutions. These can be banks or insurers, or other financial intermediaries, which are originators of loans. To finance its purchases the SPV issues marketable securities known as asset-backed securities (ABS). Debt instruments issued to finance the transfer of residential mortgage loans are known as residential mortgage-backed securities (RMBS). Debt servicing in respect of ABS or RMBS is paid out of the cash flows ensuing from securitised assets (like mortgages or company loans). DNB compiles data on SPVs from publicly available information. The policy of DNB is to shield financial institutions from an unnecessary reporting burden. In this case sufficient information is already available from other sources and can be retrieved at low cost. It should also be considered that there is no legal obligation to notify individual securitisation transactions as yet.

DNB identifies new issues of ABS or the establishment of new SPVs from several sources:

- commercial data providers (Telekurs)
- money and banking data on securitisations
- balance of payments data
- trust offices
- other public sources (papers, journals, and internet: eg pre-sale and investor reports).

As regards the SPVs' balance sheet, the amount of debt securities issued is taken from the data provider. To calculate the amount of securitised assets this source is tapped too, and investor reports are taken into account as well. Securitised assets can be classified into several types of credit, including residential mortgages. The update of quarterly data depends on available sources and trends. New information on loans and debt issued is derived from investor reports. Moreover, DNB compares data on redemptions received from the data provider with balance sheet data. Further, annual reports of SPVs are used. They can be downloaded from the Internet (Chamber of Commerce). In particular for those SPVs for which no other data are at hand (only a very limited number), quarterly data are updated by smoothing year-on-year changes over the quarters.

¹⁵ The ECB term is Foreign Vehicle Corporation.

Figure 9a
Banks' outstanding mortgage loans
 EUR billion

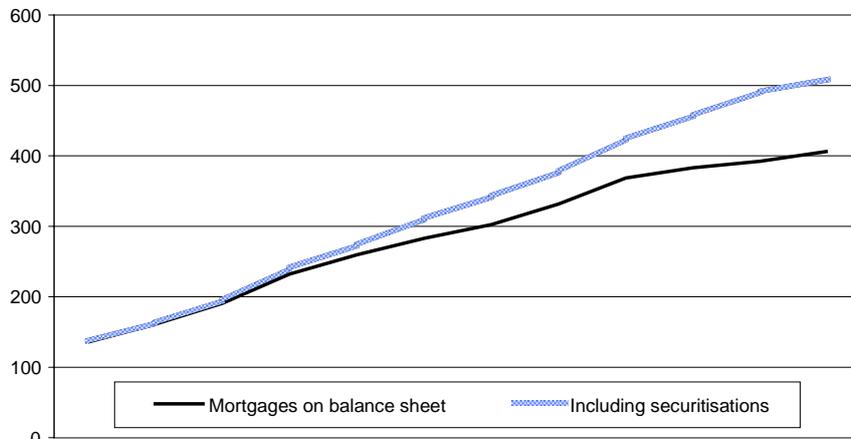
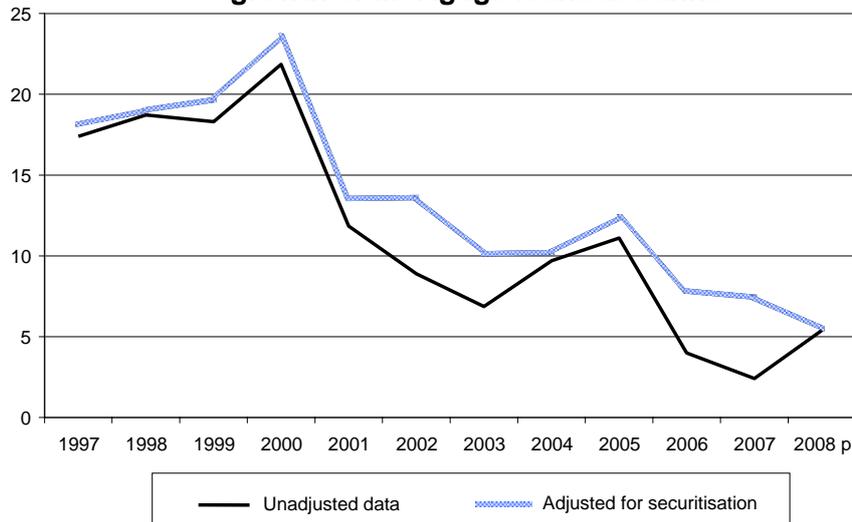


Figure 9b
% growth of mortgage loans at banks



Source: DNB.

3.5 Relation between interest rates and adjustable rate mortgages

The decline in interest rates on financial markets had an impact on the type of mortgage loan. Traditionally, the Dutch housing market relied predominantly on fixed rate products. When interest rates began their downward trend, loan providers introduced new products with variable rate elements. After the turn of the century, when historic low interest rates prevailed, variable rate loans and loans with a one-year fixation period became popular in the Netherlands. The decline in interest rates after 2000 boosted the demand for mortgage loans. In 2003 and 2004 the low level of short-term rates led to a sharp increase in demand for short-term mortgages loans (figure 10a, 10b). Households increasingly renegotiated their existing higher rate mortgage loans. Because of the structural increase of house prices, the collateral value of mortgage loans rose. This facilitated renegotiation by replacing loans. In addition, the borrowing capacity of households grew because of low interest rates. At the lowest point of the variable interest rate (3.15% in the second quarter of 2005), banks lent more than EUR 10 billion in new loans in the short-term segment.

As against the temporarily favourable effects of rising mortgage *volumes* for banks, the mortgage interest rate trend, particularly from 2005, combined with the interest rates payable on deposits, squeezed interest margins (figure 10a). In particular, this reflected the rate increases by the European Central Bank (ECB). The margin also came under increasing pressure as a result of competition in the mortgage market.¹⁶ Non-bank financial institutions and some foreign banks were attracted by the size of the Dutch market for mortgage loans. Rising interest rates restrained the demand for variable-rate mortgages. In response, demand from home owners shifted to the longer end of the interest fixation period. The flattened yield curve made fixed-rate mortgages more attractive. But in the course of 2006, rates gradually increased in this part of the mortgage market. The establishment of the Code of Conduct for Mortgage Financing – according to which financial institutions must more carefully scrutinise the financial position of households, in particular the capacity for debt servicing – is considered to have checked the supply of new loans to some extent. In sum, households reacted in an active way to changes in the level and in the steepness of the mortgage rate curve. By renegotiating debt, they tried to limit future interest expenses to some extent. In 2008 mortgages with a one- to five-year interest fixation period became more popular, at the expense of variable rate contracts.

Figure 10a
Mortgage rates and financing with euribor

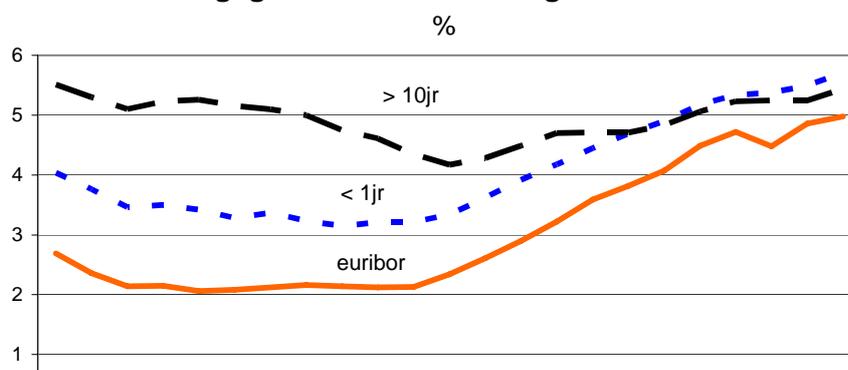
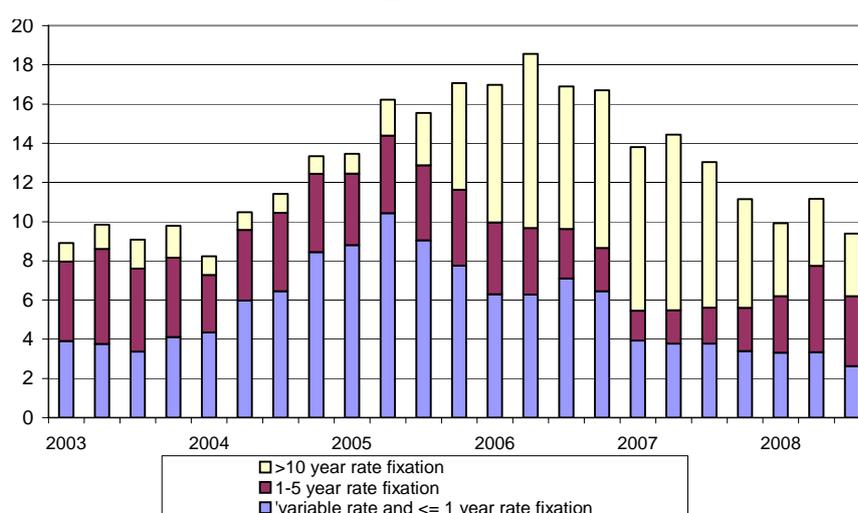


Figure 10b
New mortgage contracts provided by banks



Source: DNB.

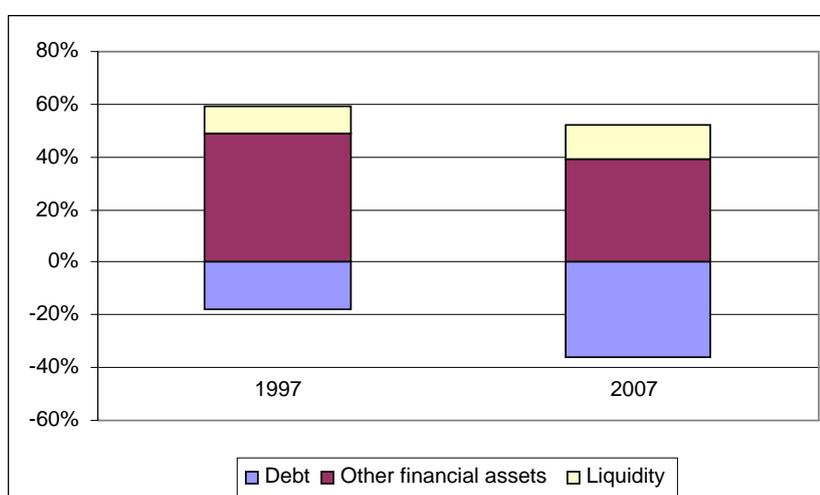
¹⁶ DNB *Annual Report 2006*, p 73, and WW Boonstra and JM Groeneveld (2006).

4. Impact on balance sheets of households and banks

4.1 Households

We saw above that households took an active stance in trying to restrict their interest rate expenses by a shift to mortgage loans with a long interest fixation period. Nevertheless, the developments in the past decades resulted in accumulation of debt on the balance sheet. Leverage of households thus increased: the ratio of debt to total households assets doubled from 18% in 1997 to 36% in 2007. The share of financial assets (excluding liquid assets) decreased by 10 percentage points to 39%. The share of liquidity remained more or less the same (figure 11).

Figure 11
Leverage at households
% of total assets



Source: DNB.

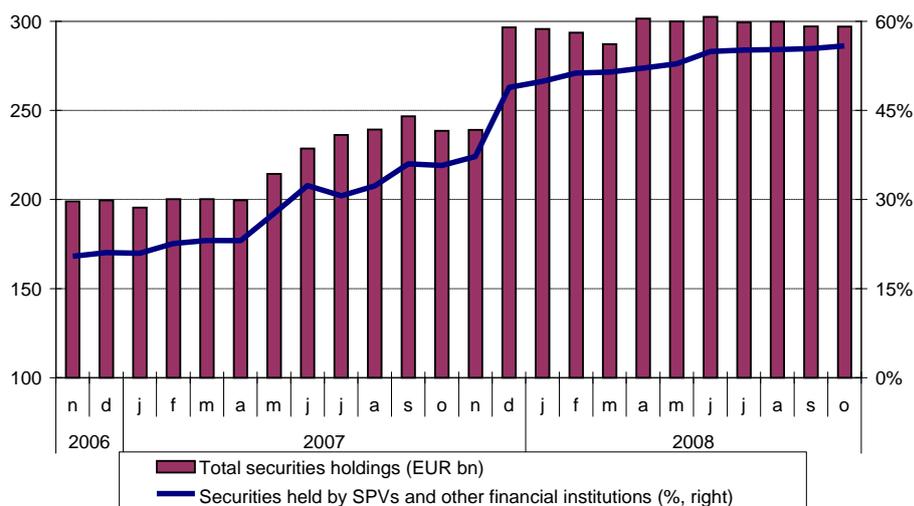
4.2 Banks

We have seen that banks have become active players in the securitisation of assets, in particular in mortgages. The usual business model of banks – attracting deposits and extending credits – changed to the so-called originate-to-distribute model (OTD). According to this model, a bank extends individual credits, bundles them and sells the package to investors via an SPV. In this model banks rely on financing in the capital market, rather than funding from deposits and savings accounts held by the public. In 1995, Dutch banks relied to 63% on traditionally entrusted funds from the public. This share has declined since and in 2006 it stood at 41%. When this form of capital market financing dries up, financial institutions that are dependent on this source have to refinance. Since the outbreak of the American mortgage crisis, investors avoid ABS and other structured products. Also in the Netherlands, a few institutions without a deposit base could not attract funds on reasonable terms any more. They stopped their activities, eg in mortgage finance along the OTD model. Likewise, the SPVs sponsored by banks were no longer able to place their debt in the markets. Banks bought these debt securities back. Further, they increased their holdings of bonds newly issued by affiliated and non-affiliated SPVs. In October 2008 banks held 56% of

total debt securities issued by domestic SPVs and other financial institutions (figure 12). Banks feared that possible failure of their vehicles could backfire on their own reputation. Therefore, they bought SPV bonds in the primary market.¹⁷ Banks also had another motive to invest in these bonds: liquidity reasons. ABS with a certain rating are eligible with the ECB in exchange for short-term loans. Because of the American mortgage crisis and the accompanying uncertainty in the financial markets, banks established a cushion to bridge periods of tightness on the money markets.

Figure 12

**Securities holdings of Dutch banks (EUR bn);
of which issued by Dutch SPVs (%)**



Source: DNB.

5. Conclusions

The housing market in the Netherlands is characterised by strong regulation, resulting in various rigidities. On the one hand, this has led to a considerable burden to the government budget; on the other, this has resulted in a situation in which supply has not reacted positively to the large house price increase. In the past decade, households have strongly increased their leverage, raising debt to finance their purchases of houses.

Banks, for their part, have become heavily involved in securitisation of their initial mortgage claims. Their role in financial intermediation has changed from a traditional model of on-lending their customers' deposits and savings account to an originate-to-distribute model. Due to the credit crisis the market for ABS dried up, and banks increased their holdings of bonds issued by SPVs. Via a detour, mortgages came back onto their balance sheets, now in a marketable form.

¹⁷ In calculating the size of the mortgage market, these bonds are counted as securities, not as mortgages, in order to prevent double counting.

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