# Dutch house prices and tax reform

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**Abstract**
This paper discusses the likely impact of tax reform, in particular the removal of home mortgage interest deductibility, on Dutch house prices in the context of recent local and global house price developments. We analyse three aspects: first whether there is a house price bubble in the Netherlands ready to burst; secondly, whether Dutch house prices will decline in response to the global credit crisis; and finally, in this context, what impact would the reform of income tax treatment of home owners – in particular reduction of the advantage of home mortgage interest deductibility – be on Dutch house prices. We conclude that prices were already under pressure before the credit crunch started affecting the housing market and that changing the fiscal treatment of home owners in this context would cause a further decline in house prices. This would be unfortunate timing for such a reform, especially because the global credit crunch also seems to have started to have an effect on the Dutch housing market.

## 7.1 Introduction

One year after the start of the global credit crisis in the US, rising interest rates and tightening mortgage markets had led to falling house prices in a number of countries, including the United Kingdom and Spain, but not as yet in the Netherlands (DNB, 2008). This paper analyses whether house prices will start falling in the Netherlands at the end of 2008 and the beginning of 2009 and the potential impact of tax reform on house prices. We first explore whether a house price bubble exists in the Netherlands that is ready to burst and whether house prices are likely to decrease in response to the credit crisis. We then examine the likelihood of a fall in Dutch house prices in response to modelled changes that would reduce the favourable income tax treatment of home owners. To address these aspects, we analyse the literature.

Section 7.2 contains a general discussion of underlying determinants affecting the movement of house prices, including both psychological and non-psychological effects, and the factors that contribute to the phenomenon of house price bubbles. Section 7.3 summarises the general theory and evidence as to the relationship between house prices and income taxation of home ownership. Section 7.4 discusses the possibility of a house price bubble bursting and the anticipated reaction of house prices to the credit crunch in the Netherlands. Section 7.5 examines the impact of income tax treatment of home owners on house prices in the Dutch situation, in particular in light of various proposals (not yet enacted) to reduce or remove the tax benefit of home mortgage interest deductibility. We begin by setting out the context and describing the relevant income tax rules. We then present the outcomes of two Dutch models that predict the movement of house prices following restrictions to the tax treatment of the owner-occupied dwelling.



## 7.2 Underlying determinants of house prices and causes of housing bubbles

In a competitive market, house prices are the result of interacting demand and supply (Girouard *et al.*, 2006; Chen, 1998). Factors, or 'drivers', influencing demand and supply are usually called fundamentals or the underlying determinants. Factors such as disposable income, interest rates and demographic development influence demand, while factors affecting supply, such as the price of land and the level of building costs, influence the availability of dwellings. These drivers may influence the house price in the short-term, the medium-term and the long-term.

On the demand side, an argument analogous to the one underlying the general theory of price can be made: the demand for goods is a function of (household) income and of the price of the good or service relative to those of other goods or services (Fair, 1972). Various studies demonstrate that in the long-term, house price and income level are indeed in equilibrium (e.g., Malpezzi, 1999)[1].

In addition, access to capital and the conditions under which households can borrow money can play an important role. Meen (1998) draws the conclusion that in the United Kingdom and the US, access to capital has affected house prices in the past. Since the 1980s, however, financial markets have largely been liberalised and restrictive rules on eligibility for mortgages have lost much of their impact. In response, the influence of exogenous factors such as the development of income and interest rates has increased (e.g., Muellbauer & Murphy, 1997).

On the supply side, neoclassical economic theory predicts that the housing market operates as a supply market (Boelhouwer, 2005). This means that the long-term price development of dwellings will be determined by the development of construction costs (Muth, 1960; see also Shiller, 2007). When scarcity of dwellings causes prices to rise, the supply of newly built dwellings will increase, causing prices to fall to a new equilibrium price. Econometric studies carried out for the US demonstrate a significant relation between the

1 Gallin (2006) suggests, however, that the co-integration relationship between house price and income that is commonly assumed in the literature may be inappropriate.

development of construction costs and sales price (Abraham & Hendershott, 1996). This result strengthens the assumption that as the government exerts less influence and building land is made available without many restrictions, the influence of construction costs on house prices will increase.

On the other hand, if a government intervenes in the housing market, Boelhouwer (2005) speaks of a 'stock' market in which the price of newly built dwellings follows the price of dwellings in the existing stock. An example of such government intervention is when the government prevents the release of sufficient building land (Winky & Ganesan, 1998) by implementing restrictive spatial planning policy (see, among others, Muellbauer & Murphy, 1997; Abraham & Hendershott, 1996).

House prices appear not only to be influenced by 'rational' economic or policy drivers, but also by some 'irrational' considerations that work in the short term. A house price bubble might be formed because "excessive public expectations of future [house] price increases cause [current] prices to be temporarily elevated" (Case & Shiller, 2003: 299). The bubble grows because homebuyers will buy a dwelling that "they would normally consider too expensive" in the expectation that they will be compensated by future price rises. Himmelberg *et al.* (2005: 67-68) quote Stigler's definition of a bubble (1990): "[I]f the reason that the price is high today is only because investors believe that the selling price is high tomorrow – when 'fundamental' factors do not seem to justify such a price – then a bubble exists." They continue (p. 68): "We think of a housing bubble as being driven by homebuyers who are willing to pay inflated prices for houses today because they expect unrealistically high housing appreciation in the future." In this context, first-time buyers may expect that houses will quickly become unaffordable and in order to prevent this, they will act swiftly to purchase a house (Case & Shiller, 2003). House prices could then fall when people realise that constantly rising prices in the future are not realistic because "home prices are inherently unstable", and this may burst the bubble.

The irrational belief that nominal house prices always appreciate more than inflation, and that this explains the fast-rising house prices in recent decades, is a psychological or speculative short-run effect that 'infects' the development of house prices (Shiller, 2005; see also Levin & Wright, 1997). This idea that housing is a great investment – which accompanies a speculative bubble – seems actually to be caused by the bubble itself. Shiller argues that 'boom psychology' helps to spread such thinking (2007: 7).

The reverse effect would be the story fuelled by pessimistic expectations of the possible duration of a recession and how far house prices might fall enforcing these expectations. In a downturn situation, the consumer may also postpone the decision to buy for as long as possible in order to avoid incurring capital loss. Such speculative behavior may force prices to decline further (Boelhouwer *et al.*, 2004; Levin & Wright, 1997).



However, not every house price rise will make a bubble (see also Himmelberg *et al.*, 2005). A bubble is created only when expectations keep the market going in the sense that they stimulate buyers to buy a dwelling and only if the fundamentals in the market do not explain the increase.[2]

Whether market fundamentals get a chance to work will also depend on the elasticity of supply. Based on a simple model of house price bubbles, Glaeser *et al.* (2008) conclude that their observation of more volatile house prices (or bubbles) than observable changes in fundamentals appears to be more likely in situations of less elastic supply.

## 7.3 Evidence of the effect on house prices of changing the tax treatment of home ownership

A separate discussion of the fiscal treatment of home ownership is warranted here, as one of our aims is to analyse how house prices may develop when the income tax treatment of home ownership is made less favorable. In particular, the issue to be analysed in more detail in Section 7.5 is the impact on house prices of limiting or removing the deductibility of home mortgage interest, which is currently allowed in the Dutch income tax system.

In general, the expectation is that house prices will start falling if tax treatment of home ownership is made less favourable. However, according to Bourassa & Grigsby (2000), the degree to which changes in the tax treatment of home ownership impact on the development of house prices will depend greatly on the extent to which the existing tax advantage is capitalised into house prices. Capozza et al.'s (1998) results for the US support the hypothesis that income tax advantages are fully capitalised into house prices. Bourassa & Grigsby (2000) argue that such a result requires a fully inelastic longterm supply curve, an implication that they consider questionable.

In the Netherlands, a lower proportion of households live in a home that they own or are purchasing than in some other countries (54 percent of about 7 million Dutch households are home owners). Of these, however, the majority are purchasing their homes with mortgage debt and so the home mortgage interest deduction has a significant effect on the cost of this mortgage debt. Indeed, 85 percent of home owners are purchasing their home with a mortgage loan, resulting in an average loan-to-value ratio (LTV) of 0.52 and an average loan-to-income ratio (LTI) of 2.52 as at 1 January 2006 (Haffner *et al.*, 2008).

In this context, for the Netherlands, Brounen & Neuteboom (2008) estimate

**2** Shiller (1981) reports excessive volatility of stock prices in relation to underlying determinants.

a considerable average capitalisation rate of almost three-quarters of the home mortgage interest tax deduction to households. For first-time buyers, this share, at almost 96 percent, is calculated to be bigger than average. This suggests that first-time buyers are translating most of the expected mortgage interest tax deduction into their house price bid. In contrast, for a home owner who is moving house, the share of capitalisation is estimated to be far lower, at 57 percent. This is because such home movers usually need a smaller mortgage loan than first-time buyers as they have some equity in their first home.

Previous capitalisation of tax benefits allows for house price falls when the tax benefits are restricted. Bourassa & Grigsby (2000) cite on the one hand calculations that place the capital losses at between 10 to 20 percent or more, depending on market conditions and other factors. On the other hand, using a simulation model which integrates short term and long-term impacts of tax reform on the housing market, Bruce & Holtz-Eakin (1999) find only a slight decline in house prices of a little over 1 percent in the short term after a tax reform.

Capozza *et al.* (1998) with their model find a decline of house prices of 14 percent with an average LTV of 0.41 in the US in 1992 when they include only the repeal of the home mortgage interest deduction. If the LTV were assumed to be 0.25 on average, the price decline is estimated at almost 10 percent, running from almost 13 to 20 percent and more. They find that the greatest losses would occur in expensive cities such as Honolulu and San Francisco.

If house prices do fall after such a change in the tax system, the question becomes: when does the decline begin? This depends on how households behave when they become aware of proposals for a tax reform. Vandell (2000) argues that households will take action in anticipation of the change in policy. Åsberg & Åsbrink (1994) have attempted to model such proactive behavior. They estimated the effects of income tax reform, all other things being equal, on house prices in Sweden. In their estimates they distinguish between home owners' reactions to both an expected and an unexpected revision in the tax code. If home owners expect the revision, then a further distinction is made in the reaction, taking into account the timing of the announcement (1989) and the time at which the revision actually came into force (1991). In all three situations, the researchers expected to see the house prices decline by less than 10 percent (8.7 percent to 9.9 percent) with inflation running at 2 percent. They predicted that an unexpected revision in the tax code would lead to the greatest decline in house prices (9.9 percent). This was also the case when inflation was assumed to be 6 percent. In that event, the expected decline amounted to between 23.3 and 25.4 percent.

However, in reality, the actual development of Swedish house prices proved that no house price response occurred when the reform of the tax system was announced; instead, the house price decline only set in after the tax



**Table 7.1 Main policy changes in personal income tax treatment of home ownership in selected European countries**

| Country | Year | Policy change |
|---|---|---|
| **No observed relation to house price change** | | |
| Belgium | 1989 | System change: reduction of highest tax rate affecting mortgage interest deduction |
| | 1992 | Mortgage interest deduction extended |
| France | 1997 | Mortgage interest deduction abolished for new homes |
| | 1998 | Mortgage interest deduction abolished for purchase and improvement |
| Germany | 1987 | More room for deductions. Imputed rent abolished |
| | 1996 | Fiscal concessions terminated |
| Netherlands | 1990 | System change: reduction of highest tax rate affecting mortgage interest deduction |
| | 2001 | Mortgage interest deduction limited to 30 years |
| Norway | 1992 | System change: reduction of highest rate affecting mortgage interest deduction |
| United Kingdom | As of 1991 up to 2000 | Mortgage interest tax relief phased out |
| **Observed relation to house price change** | | |
| Denmark | 1987 | System change: reduction of highest rate affecting mortgage interest deduction |
| | 2000 | Imputed rent abolished and replaced by property tax |
| Sweden | 1991 | System change: reduction of highest rate affecting mortgage interest deduction |
| | | Imputed rent abolished and replaced by property tax |

Note: Capital gains taxation is excluded from the table.

Source: Boelhouwer *et al.* (2004)

reform had been implemented in 1991. At that time, selling prices dropped quickly – by 26 percent between 1991 and 1993 at inflation rates of 10.3 percent in 1991, 2.2 percent in 1992, and 5.7 percent in 1993 (Eurostat, Economic Outlook). A 'lagged' response such as this raises questions as to whether the owner-occupiers were actually able to understand the tax changes adequately and in good time. It should be noted that in the Swedish case, the changes in tax treatment of home ownership were combined with an overall reduction in tax rates. The economic recession that commenced soon after may also have obscured the evaluation of owner-occupiers about effects of the housing tax reform measures.

More generally, however, a comparative descriptive study (Boelhouwer *et al.*, 2004) found that in many countries, there was no observed house price impact from housing tax reform. This study observed whether a change in average house price could be detected after a change in the income tax treatment of home owners in eight countries: Belgium, England, Denmark, Finland, France, Germany, the Netherlands and Sweden. The reforms to income tax that were studied, and whether there was any observed house price change, are summarised in Table 7.1.

This broad comparison also revealed that the means and timing of the implementation of the tax reform largely determines the impact on the development of house prices. Only in Denmark and Sweden (see above) could an annual decline in house price be observed to take place in the four years after the year of the change in income tax treatment. In the other countries studied, the effects of the changes were either too small to be traceable (e.g., Belgium, England, France and Germany) or were compensated for by general

tax measures (the Netherlands and Norway).

It must also be noted that changes were introduced more gradually in some countries, in particular in the United Kingdom (see also Gale, 1997) and in the Netherlands and Norway, compared to both Denmark and Sweden. The latter two countries also had the misfortune that the tax reforms coincided with a recession. This manifested in various ways, including high unemployment and inflation alongside a recession in the housing market. In Norway, in contrast, the tax reform carried out in 1992 made a positive contribution to economic recovery. On balance, home owners were better off – in terms of purchasing power – even though the mortgage interest deduction for home owners was reduced as a result of the reduction of the highest individual marginal tax rate.

## 7.4 Dutch house price development and expectations

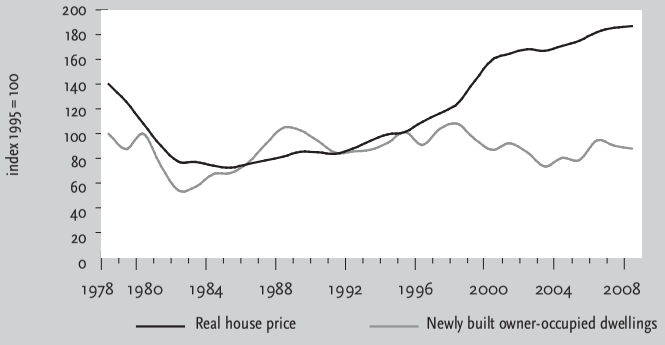
In this section, we discuss the expectations of various researchers about the movement of house prices in the Netherlands. The International Monetary Fund (IMF) has suggested that in 2007 there may have been a house price bubble in the Netherlands (IMF, 2008). Dutch models, however, draw different conclusions about current house price trends.

Dutch house price developments over the past three decades are illustrated in Figure 7.1. In the 1970s, house price development was characterised by steep price rises shortly before the second oil crisis, followed by equally steep price decreases in the period from 1978 to 1983 (Boelhouwer & De Vries, 2001). This is the starting point for Figure 7.1. Prices then rose for more than 2 decades (see also Girouard *et al.*, 2006), until the third quarter of 2008, with the exception being a fall in the first half of 1990 (the time of the Gulf War). This relatively long period of price rises was brought about by favorable economic conditions combining rising household incomes and falling interest rates. In addition, mortgage requirements eased during this time. For example, in 1993, a second household income was allowed to be included when determining eligibility for a home loan. Increasingly, mortgage loans were developed in which the full amount of income-tax-deductible interest was paid during the loan term, in first 'endowment loans' and later, interest-only mortgages. These new mortgage products maximised the benefit of the home mortgage interest deduction for households. As a result, house prices could rise without generating liquidity problems for households, whose monthly housing or mortgage expenses remained affordable.

During the period 1991 to 2000, house prices increased substantially, with average yearly growth rates of 9.7 percent in nominal terms and 7.1 percent in real terms. From 2001 to 2007, house price increases were more moder-



**Figure 7.1 Real house price and newly built owner-occupied dwellings, 1978-2008 (index 1995=100)**




ate, with average yearly growth rates of 3 percent above inflation. The most important factor in this period was the increase in household disposable incomes. Furthermore, during this period, the increase in dwelling supply was relatively small. The downward pressure on prices therefore was also relatively small.

### 7.4.1 Was there a Dutch house price bubble in 2007?

The recent IMF assessment of the vulnerability of various countries to housing market corrections was based on two housing market indicators (IMF, 2008). The first indicator shows the overvaluation of house prices in relation to the following housing market fundamentals for the period 1997-2007: the affordability ratio (the lagged ratio of house prices to disposable incomes), the growth of disposable income per capita, the short-term and long-term interest rates, the credit growth, and the changes in equity prices and working-age of population. The IMF estimated the gap between real house prices and house prices justified by the fundamentals to be approximately 30 percent in Ireland, the Netherlands and the United Kingdom. This was the largest gap estimated in the countries examined. If this estimated gap may be interpreted as a measure of house price overvaluation, it is then an indication of house prices being prone to correction in these countries. It must be noted that the IMF (2008: 11) cautioned that the unexplained increase in house prices might reflect variables omitted from the model, such as macroeconomic volatility, household formation and inward migration.

The second indicator used by the IMF shows the development in the past 10 years of the residential investment-to-GDP ratio in each country. One assumption underlying this indicator is that large house price increases are accompanied by large increases in residential investment in 2007. However, Boelhouwer (2005; see also Ball, 2008) shows that this is not the case in the Netherlands, where house prices have risen exuberantly while residential investment stagnated as a result of the abolition in supply-side subsidies in combination with barriers in the planning, sales and building phases of

the production process. Figure 7.1 also illustrates this stagnation in supply of newly built housing. As this indicator does not apply to the Netherlands, only the question of the 30 percent gap remains.

Although the IMF formulated its findings with care, in the Netherlands there were strong reactions to the suggested 30 percent gap in house prices. The IMF responded by explaining that it is hard to predict bubbles and went on to emphasize that the results of its models do not exclude the possibility that price increases may be driven by factors other than economic fundamentals (NRC, 19 May 2008, p. 23). In contrast to the IMF study, Kranendonk & Verbruggen (2008) argued that Dutch house prices in 2007 can be fully explained by the underlying determinants. Their study functioned as a reply to the assumed house price bubble warning of the IMF. Their model (which was originally developed by Koning *et al.*, 2006) showed that the development of real house prices in the period 1980-2007 can be ascribed to fundamental demand and supply variables, such as real disposable wage income, the real interest rate, the real financial wealth of households other than stock, and the stock of dwellings. Furthermore, they concluded that the calculations of earlier models (Verbruggen *et al.*, 2005), showing that house prices had been overvalued by about 10 percent in 2003, were substantiated by the more recent calculations. After 2003 the overvaluation diminished, however, and disappeared entirely by 2007. This was due not to a downward house price correction but to the fact that between 2003 and 2007 the increase of actual house price lagged behind the increases of the long-term equilibrium price calculated in the model.

Kranendonk & Verbruggen (2008) explained that their results differed from the IMF's analysis because the IMF would not have taken national housing market specifics into account, such as the moderate increase in the supply of dwellings in the Netherlands which pushed up the equilibrium house price more than otherwise would be the case.

De Vries & Boelhouwer (2009) showed with their model that house prices had been out of equilibrium longer – from 2000 to the first half of 2007 to be precise – than Kranendonk & Verbruggen (2008) assert. This was caused particularly by decreasing interest rates and increasing income levels, both of which have more than likely supported the creation of the house price bubble. When interest rates began rising at the end of 2005 (3.75 percent), continuing to rise through the first half of 2008 (5.16 percent), and income growth began slowing down more than before, the affordability of home ownership worsened and house prices therefore began a gradual downward adjustment. De Vries and Boelhouwer (2009) conclude that in 2007, house prices can be determined by the fundamentals and as from 2008, the growth of real prices was predicted to be zero.

In summary, calculations based on two models for Dutch house prices counter the IMF's warning of a possible Dutch house price bubble in 2007.



Any bubble that may have existed before 2007 had vaporised by that year as a result of the period's moderate house price development.

### 7.4.2 Effect of credit crisis on house prices in 2008

The global financial crisis (that began in the US in the summer of 2007) had its source, after 2000, in the increase in loan incentives that caused declining lending standards (Haffner, 2008; Chomisengphet & Pennington-Cross, 2006; Zelman *et al.*, 2007). The long-run trend of rising house prices also caused financial institutions to engage in sub prime loans with a heightened risk of default. That same long-run trend also presumably encouraged households to assume riskier mortgage types in the belief that they would be able to refinance quickly at more favorable terms. As interest rates began to rise in 2006, the well-known consequences followed: refinancing became more difficult, more dwellings were seized and foreclosures increased dramatically when initial soft terms of mortgage loans expired. As house prices started falling in the US, the financial problems of the US housing market especially for securities based on sub prime and other risky mortgages, triggered the global crisis.

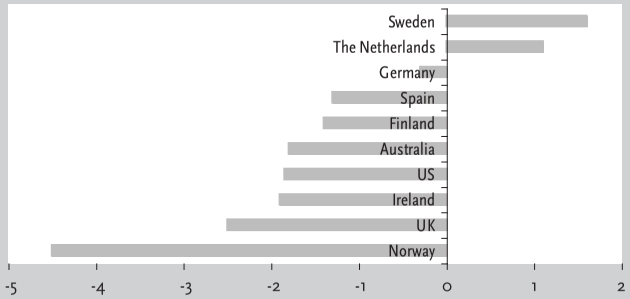
Will the global crisis trigger house price decreases in the Dutch housing market? The Dutch central bank (DNB, 2008) argued that the risk of a downward house price correction in the Netherlands as a result of the effects of the American credit crisis is much lower than in some other countries. This is supported by Figure 7.2, which compares nominal house price changes in the third quarter of 2008 compared to the third quarter of 2007 and demonstrates that house prices in the Netherlands (and Sweden) had not started falling.

DNB (2008) asserted that the reason for relatively less downward movement of house prices in the Netherlands than in some other countries is because of several features of the local housing market that differ from housing markets in other countries. These local features apply, although in general, underlying affordability of home ownership had begun to decline in the Netherlands due to interest rates rising from 3 to 4.3 percent in the period from 2005 to 2007. First, DNB identified the relatively low share of home ownership (54 percent) in the Netherlands, which means that fewer households are vulnerable to changes in mortgage interest rates.

Second, the Netherlands has a relatively low share of mortgage loans with a variable interest rate, or an interest rate fixed for a period of less than one year (only 15 percent). This contributes to what Case & Quigley (2008) refer to as 'downward stickiness' of house prices because changes in interest rates will take their toll on affordability less quickly.[3]

3 See also Peltzman (2000) who studied the phenomenon of downward stickiness of output prices as a response to an input price decrease.

**Figure 7.2 Nominal house price development in a number of countries (percentage change in third quarter 2008 in relation to the third quarter of 2007**




Source: Statistics Netherlands

Tsatsaronis & Zhu (2004) also show that house prices are more sensitive to short-term interest rates in countries where floating mortgage rates are used.

Third, as discussed further in Section 7.5, there is a significant tax effect in the Netherlands because of the relatively high share of mortgage interest that is deductible for income tax (maximum tax rate of 52 percent). As a result, increases in the mortgage interest rate are mitigated more than in most other countries where home mortgage interest deductions are more limited or do not exist (Haffner, 2002). Affordability of mortgage expenditure will thus be changed at a slower rate.

Fourth, DNB argued that in countries where house production and the number of building permits has been relatively high in the past decade, the drop in demand may hit harder, especially when house buys are fed by the speculative expectation that house prices will keep on rising (compare IMF, 2008). the Netherlands is not one of those countries, as house building has been decreasing for several years of this century and has not regained the higher levels of production that were achieved in the past century.[4]

According to DNB, overall, these factors contribute to a smaller risk of a downward house price correction in the Netherlands, even if mortgage credit becomes scarcer and economic growth perspectives are less optimistic than in the recent past.

However, some more recent data may suggest otherwise. Although it is still too early to establish a statistical relationship between the global credit crunch and the Dutch housing market, Figure 7.3 illustrates that the number of sales of newly built dwellings fell sharply in the fourth quarter of 2008.[5]

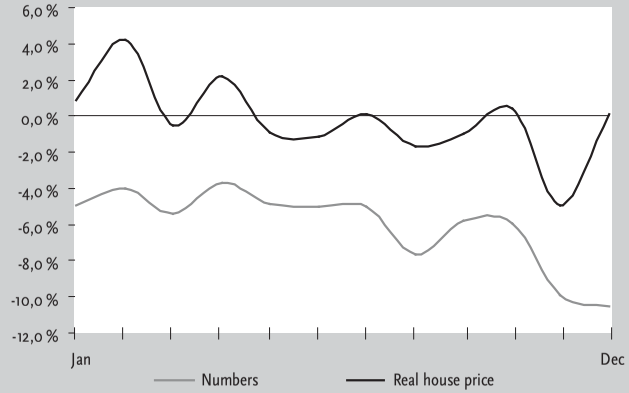
The decline in number of transactions that started in the second half of

4 House production expressed as investment reached almost 6 percent of GDP in 2007 versus e.g., more than 8 percent respectively 10 percent in Spain and Ireland. The number of building permits reached 6 per 1,000 inhabitants in 2006 versus e.g., more than 19 in Spain and 6 also in Ireland, but for 2001.

5 The sales of newly built dwellings fell 50 percent in comparison to a year earlier according to the database *Monitor Nieuwe Woningen*.



**Figure 7.3 Real house price and number of transactions, January-December 2008 (percentage-changes per month compared to 12 months earlier)**




Source: Kadaster Nederland; OTB Research Institue (TU Delft) calculations

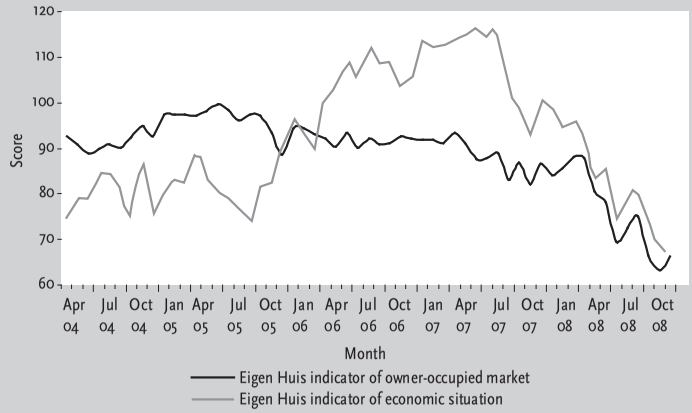
2006 (more than 195,000) intensified in 2008 (from less than 180,000 to less than 161,000). Figure 7.3 also shows that the real house price seems to have started decreasing at that time, but is volatile.

Statistics like these have not been seen for the Dutch housing market in decades; nor were they expected (De Vries *et al.*, 2008). It was assumed that in the period 2008-09, house prices would at least follow inflation because the fundamentals were expected to show a favorable development in both years. For 2009, both a decline in interest rate and an increase in disposable household income through tax measures were taken into account.

It seems that a negative short-run effect, possibly caused by the credit crunch, has 'infected' the housing market in the fourth quarter of 2008. This negative psychological effect determines some 50 percent of price developments in the Dutch housing market according to De Vries and Boelhouwer (2009). Figure 7.4 shows that psychology seems to have started playing a role in the owner-occupied market as early as the second quarter in 2007 when the news about the start of the problems on the financial markets became known, even before the Vereninging Eigen Huis (association for owner-occupiers) indicator for consumer confidence in the owner-occupied housing market started falling.

The question remains whether the presumably positive influence of economic fundamentals can neutralise the current negative sentiment in the housing market. If an economic downturn affects the fundamental drivers, especially the income situation of households, then house prices as well as the number of transactions may decrease further. This is not an unrealistic scenario, as De Jong *et al.* (2008) forecast a 0.75 percent shrinkage of the Dutch economy in 2009. Unemployment has also started rising for the first time in

**Figure 7.4 Eigen Huis indicator for owner-occupied market and Eigen Huis indicator for the general economy, April 2004-December 2008 (average scores per month)**




Source: Boumeester & Lamain, 2008

more than 3 years in the fourth quarter of 2008 (CBS, 2009).[6]

What may seem 'only' psychological effects for the moment may fall into line with changing fundamentals of house prices in the near future.

On the other hand, the continually lagging supply of new dwellings (illustrated in Figure 7.1) has brought about a situation of scarcity in dwellings on the housing market,[7] a situation which will counterbalance the threat of a price decrease. If the sharp decline in new construction and backlog orders continues,[8] another offset to house price decreases may be at work. In total, Van Hoek (2008) expects that the production of dwellings will decrease by 20 percent in 2009 and 2010.

## 7.5 Tax reform and house prices in the Netherlands

In this section, we discuss the potential impact on house prices of tax reform that would reduce the favourable tax treatment of home ownership in the Netherlands. In particular, we examine the potential impact of reduction or repeal of the Dutch home mortgage interest deduction.

6 Dutch newspapers also mention regularly that banks have tightened up their lending policy.

7 The policy aim is to reduce scarcity on the housing market by 2010 to 1.5 percent of housing stock (Ministerie van VROM, 2004-05).

8 The backlog of orders for new dwellings continued to fall from ten months to less than eight months in September 2008 (Van Hoek, 2008).



**Table 7.2 Quantification of tax treatment of home ownership in Box 1 ranked according to income and age, using estimates for 2005**

| Joint aggregate income | Net tax deduction (€ M) | Home ownership (%) | % Home owners with mortgage loan | No. of households | Net advantage per household with mortgage interest relief (in euros) | Net advantage per household with mortgage interest relief as % of disposable income |
|---|---|---|---|---|---|---|
| **Households < 65 years old** | | | | | | |
| Up to 30,000 euros | 1,621 | 33 | 92 | 716,037 | 2,264 | 13 |
| 30,000 – 45,000 | 2,620 | 70 | 95 | 945,107 | 2,772 | 10 |
| 45,000 – 60,000 | 2,159 | 81 | 95 | 649,481 | 3,324 | 10 |
| 60,000 – 90,000 | 2,020 | 88 | 94 | 478,988 | 4,217 | 9 |
| 90,000 and above | 1,219 | 89 | 92 | 187,115 | 6,515 | 7 |
| Total < 65 years | 9,639 | 59 | 94 | 3,012,201 | 3,200 | |
| **Households 65+** | | | | | | |
| Up to 20,000 euros | 26 | 17 | 44 | 65,352 | 398 | 3 |
| 20,000 – 40,000 | 103 | 43 | 54 | 119,065 | 865 | 4 |
| 40,000 and above | 167 | 69 | 54 | 80,103 | 2,085 | 4 |
| Total 65+ | 295 | 32 | 51 | 261,354 | 1,129 | |
| Total | 9,934 | 53 | 88 | 3,280,070 | 3,029 | |

Sources: First four columns: Wijn (2005); final column: Kuipers *et al.* (2006)

### 7.5.1 Tax treatment of home ownership

As a matter of policy, in an 'ideal' income tax, two 'pure' options can be chosen for taxation of home ownership, or owner-occupied housing (Haffner, 2002).[9]

In the first option, the home is treated solely as a durable consumption good. Neither the imputed rent of the owner-occupied dwelling nor any capital gain is taxed and no income tax deductions are available for expenses associated with the home. In the second option, the home is treated as an asset or investment good. In this case, imputed rent and capital gain are taxed to the home owner as income and the costs incurred to produce that income are deductible.

Historically, the investment approach was taken when the Dutch income tax was first designed in 1914 (Bijvoet, 2001). That is, the owner-occupied home was treated like an investment good. This policy choice was not illogical if one considers the roots of income taxation in the aftermath of the Industrial Revolution. At that time, most dwellings were for rent. The treatment of owner-occupied dwellings probably was a simple adaptation of the way in which rental dwellings were taxed: the taxation of profit being the difference between rental income and maintenance and other costs (there was

9 From an economic point of view the choice for one of these options will be based on the policy aim that the marginal decision of the actors will not be influenced by income tax. Neutrality can either be established across tenures, across all investments or according to the primary structure of the tax system (Flood & Yates, 1989; Hancock & Munro, 1992).

no capital gains tax at that time). For the owner-occupied dwelling, rental income was imputed.

The net imputed rent from living in the dwelling is determined as a percentage of assessed market value of the dwelling. It is the imputed difference between gross income and a number of costs including local taxation and insurance. However, the interest expense of a mortgage to purchase the home and the leasehold costs of land may be deducted from taxable income as actual amounts instead of imputed amounts.

In due course, inconsistencies in treatment of owner-occupied dwellings, in comparison with the income tax treatment of other investment goods such as second homes, shares and bank savings accounts, crept into the system (Haffner, 2002). One of the more important inconsistencies was the result of a reform which meant that net imputed rent was no longer actually calculated or estimated for each dwelling, but was instead expressed as a percentage of 60 percent of taxable house value, while 100 percent of actual interest expense remained deductible (Ministerie van Financiën, 1989). The exclusion of 40 percent of value of the home was considered a political correction to the calculation of imputed rent, which was applied because of the mixed investment-consumption character of the owner-occupied dwelling. The investment character of the dwelling was considered weaker than that for a share, for instance, because a dwelling also was meant to provide shelter.

Another big inconsistency in comparison with the income tax treatment of other investment goods arose from the major Dutch income tax reform of 2001. In this reform, a type of dual income tax was introduced which separates income into two basic categories: income from capital (including gains from shares, property, bank savings accounts and so on) and income from other sources (most importantly income from work and active business (see further Cnossen and Bovenberg, 2001; Sørensen, 1994). Income from capital is generally taxed at a flat, proportional rate, while income from work and active business is taxed under a progressive tax schedule. In fact, in the Netherlands, three 'Boxes' of income were established. Box 1 included income from work and business at progressive marginal rates, with a maximum rate of 52 percent. The income from investment is taxed in two other boxes. Box 2 taxes actual income (dividends and gains) from shares at a flat rate of 30 percent for shareholders with a significant (more than 5 percent) interest in the company. Box 3 taxes the imputed return from capital (wealth) at a flat rate of 30 percent. In contrast to Box 2 (which taxes actual returns to shares), the net income from net wealth (wealth minus debt)is imputed at 4 percent so that, in effect, income tax on Box 3 capital assets is calculated as 1.2 percent (30 percent over 4 percent) of net wealth. The use of an imputed return to wealth is markedly different from income tax systems in most other countries.

From the standpoint of providing neutral treatment of individual owners of dwellings, one would expect to find the owner-occupied home in Box 3.



However, in fact, the net imputed income from the home, less actual interest expenses on mortgage debt to purchase the dwelling, is treated in the same way as income from work and taxed in the new Box 1 against a progressive rate with a maximum of 52 percent. This is inconsistent with the treatment of second home and landlord-owned dwellings, which are included in Box 3. This exceptional income tax position for owner-occupied housing results in a much more favorable treatment of owner-occupiers in comparison with landlords, as owner-occupiers can deduct home mortgage interest against employment income up to a maximum rate of 52 percent. This mortgage interest deduction does not stimulate households to save, but rather to borrow money.

The special position of the home owner could make the owner-occupied dwelling an easy victim for tax savings for the government. However, nothing could be further from the truth. The fundamentals of the income tax treatment of owner-occupied dwellings have not been changed since 2001 and various Dutch cabinets have promised not to interfere with the fiscal treatment of home ownership.

In spite of this, there have been some changes that will make mortgage interest deductibility less favourable over time. The tax reform of 2001 lowered the maximum progressive tax rate from 60 to 52 percent, which reduced the benefit of mortgage interest deductions for home owners facing the top marginal rate. At the same time, mortgage interest deductions were limited to 30 years and to the principal dwelling only. Subsequently, in 2004, for existing home owners who move to their next owner-occupied dwelling, the deductibility of mortgage interest was limited to interest on a loan sum being the difference between the price of the new dwelling and their accumulated equity in the previous dwelling. In 2005, net imputed rent would be limited to the amount of interest deducted, when the amount of interest deducted is lower than the net imputed rent. As a result of this reform, which was intended primarily as an encouragement to pay off the mortgage loan, no further income tax is levied on the principal dwelling once the mortgage loan is paid off. This means that the incomplete investment good approach that applies for as long as there is a debt on the owner-occupied dwelling, is changed to the consumption good approach to owner-occupied housing, once the mortgage is repaid.

Although these measures will in due course limit mortgage interest deductions, the estimated budgetary importance of the outstanding balance of the mortgage interest deduction and the imputed rent (indicated by the net tax deduction in Table 7.2) rose from 1.5 percent of GNP in 2000 to 2 percent of GNP in 2005. Table 7.2 also shows that the net tax deduction per home owner with mortgage loan rises with income. Expressed as a percentage of disposable income, these tax reductions go to those owner-occupiers with a mortgage who are in the lower income brackets.

### 7.5.2 Is reform of the Dutch home mortgage interest deduction likely?

There are a number of external factors that may influence the Dutch government to reform taxation of home ownership in future. However, the suggestion of some politicians thathome mortgage interest deductions in the Netherlands should be abolished because of the European Union (EU) influence is a misunderstanding. The EU is less concerned with national housing or income tax policy issues than with competition, focussing on modifying laws and regulations that are disruptive to competition in order to improve and ensure the free movement of persons, goods, services and capital across the EU (Elsinga *et al.*, 2006).

Dutch policy may nonetheless be influenced by outside forces. For example, the final two decades of the 20th century saw a general trend in OECD countries to reduce tax rates and abolish or reduce allowable deductions. The goal was to make labour less expensive and stimulate job opportunities and economic growth. According to the European Commission (2005), the revenue cost of interest deductions for home owners in the Netherlands is expected to increase and this will further erode the income tax base. This is undesirable because the effect will only arise in the middle and higher income brackets and this is inefficient since it keeps capital away from productive objectives. It may also disturb the housing market, not in the least through a possible undesired price rise effect, due partly to a minimal supply side elasticity, as shown in Figure 7.1 (see also Swank *et al.*, 2002; Vermeulen & Rouwendal, 2007). (We return to the price impact below).

As noted above, the mortgage interest deduction does not stimulate households to save, but to borrow money. In recent years, the national exposure to risk as a result of the large financial value represented by the dwelling in combination with a large mortgage debt has made the housing market increasingly sensitive to the economic climate (Van Ewijk & Ter Rele, 2008). Van den Noord (2005) developed a model in which the relatively large tax advantage in the Netherlands makes house price variability in response to changes in inflation relatively high. Van Ewijk *et al.* (2006) attribute welfare increases in housing and labor markets in their model to the abolition of fiscal advantage for the owner-occupied dwelling. Present annual welfare loss would amount to 800-2,000 million euros, between 0.15 and 0.4 percent of GNP, depending on the supply elasticity of dwellings. On the other hand, DNB (2008) ascribes a positive thus mitigating effect to the mortgage interest deduction when interest rates change. The mortgager then bears only part of the change.

Various national and international organisations, including the IMF (2005) and REA (2005) have called for changes to this unbalanced situation in the housing and labor markets. The OECD (2004) called for the phasing out of



tax subsidies for housing because of their contribution to reduced economic efficiency, such as supporting higher tax rates than necessary and drawing resources into home ownership that otherwise would not have gone there. Another influence coming from outside the Netherlands could result from the further integration of mortgage markets, from which the EU expects economic advantages (Doling, 2005; Neuteboom, 2006). On balance, it is not unthinkable to imagine that influences from outside the Netherlands might stimulate the Dutch government into setting limits on the income tax treatment of owner-occupied dwellings.

An expectation that was carried broadly throughout the last election campaign (and the subsequent negotiations between political parties to form a new Dutch government in 2007) was that a commission of experts would be appointed to come up with reforms for the housing market. However, much to everyone's surprise, the new coalition parties agreed to put a halt on reforms (Tweede Kamerfracties CDA, PvdA and Christen Unie, 2007; see also Boelhouwer & Hoekstra, 2008). As a result, politicians and government officials are not to prepare or study reforms of the housing market. In this compromise, the Christian Democrats won their point that the fiscal treatment of home owners should not be changed, the Social Democrats won their point that the annual rent increase (1.1 percent on July 1, 2007) for 95 percent of the rental market – the regulated rental market – should not exceed inflation. Thus, at present the tax position of Dutch home owners and lack of neutrality across investment goods (including types of dwellings) is being perpetuated.

### 7.5.3 What is the modelled impact of tax reform on house prices?

Despite the agreed policy standstill, it is not unrealistic to expect future changes in the tax treatment of home ownership. Countless in-depth arguments are forcing political parties and lobbyists to take stands on this issue (see above, VROM-raad, 2007). The VROM-raad, the council which advises the government and parliament on matters including housing, has issued an advisory paper that presents the results of modelled house price developments, based on the two models referred to in Section 7.4, if income tax concessions were gradually to be reduced (VROM-raad, 2007).

The aim of the reform would be to increase the economic stability of the housing market and to stimulate upwards mobility in the housing market. The main scenario dealt with an annual phasing out of 5 percent of the home mortgage interest deduction, leading ultimately to the abolition of the deduction for home owners in 20 years' time. Tax proceeds would be 'returned' to all households as a general tax advantage (a reduction in the tax rate). The nominal interest rate was assumed to be 4.5 percent throughout the 20 year period.

The basic assumptions in the De Vries and Boelhouwer's[10] macroeconomic model differ from those in the microeconomic model by Koning *et al.* (2006). De Vries and Boelhouwer's model assumes that in the long-term, housing expenses will develop in much the same way as income (same housing expenditure to income ratio) whereby an increase in housing expenditure through a change in tax treatment leads to a decrease in house price. This model is also based on the assumption of an extremely inelastic supply of dwellings. As a result, the change in tax treatment would return largely as a price effect.

The model by Koning *et al.* (2006) assumes that house buyers, in their role as investors, take into account a required market yield on the dwelling that should balance the costs and financial risks that accompany big investments. In addition, it includes the effect of a change in housing supply, emphasising gradual modification because such changes do take time. The starting position is a supply elasticity of 0.65, whereby the change in the tax treatment of the owner-occupied dwelling will return partly as a price reduction and partly as a decrease in supply. In this model, most of this effect is processed directly in the first year. The supply elasticity of 0.65 in the Konings model is, in particular, a point of discussion because most of the house price models are based on the assumption of an inelastic supply between 0.2 and 0.4 (see also Vermeulen & Rouwendal, 2007; Swank *et al.*, 2002).

Although the assumptions are different, one may conclude from both model calculations that any reduction of the tax advantage for home owners will have a negative effect on house prices. The speed at which this effect appears is not easy to model. Calculations based on the De Vries and Boelhouwer model (De Vries, 2007) result in a large total price effect (real and nominal) of in total 23 percent over the period of 20 years, compared to the no-change situation. Partly because this model assumes a housing supply elasticity of zero, this effect may to a certain extent be considered the maximum expected price effect (or worst case scenario).

Koning *et al.* (2006) also find a house price decline but expect a much smaller total price effect of a reduction in 4.4 percent in house prices over a period of 20 years, compared to the no-change situation, with about two-thirds of this price effect occurring in the first year. A volume effect of negative 3.5 percent will also occur because their calculations are based on a price elasticity of 0.65. However, if the model of Koning *et al.* (2006) were to incorporate De Vries & Boelhouwer's assumptions concerning inelasticity and, apart from interest costs, no capital expenditure, then the estimated decrease in the house price will be greater as well (an estimated negative 9.7 percent).

**10** This was the model used by Boelhouwer *et al.* (2004) and updated by De Vries (2007) and De Vries & Boelhouwer (2009).



## 7.6 Conclusion

In this chapter, we examined whether house prices in the Dutch owner-occupied market may decline in the near future as a result, first,. of a price bubble that is ready to burst; second, in response to the global credit crisis; or, third, in response to potential tax reform that would reduce the home mortgage interest deduction in the Dutch income tax system. Each aspect was analysed on the basis of a literature study using Dutch house price models.

The IMF issued a cautious warning of the possible existence of a Dutch house price bubble in 2007. However, calculations based on two models of Dutch house prices counteract this warning. Any bubble that may have existed prior to 2007 had burst by that year as a result of the moderate house price developments in the years before 2007. In 2007 house prices were in accordance with fundamentals.

We conclude that a psychological effect, possibly resulting from the global credit crisis, is causing the downturn in 2008 in the number of housing transactions, construction orders and in house prices in 2008. The effect of possible credit restrictions applied by financial institutions is not clear, as there is no hard evidence. This 2008 downturn may be temporary, unless it is reinforced by a downturn in the real economy of which the first signs are being foreshadowed in terms of increasing unemployment and forecasted shrinkage of the economy.

Third, we addressed whether it is likely that house prices will fall as a result of changes to the tax treatment of home owners. As the Dutch form of taxation of owner-occupied dwellings is relatively unique, the expectation is that in due course the Dutch government will be unable to stand alone on this matter and so it is likely at some point to reduce the benefits of the home mortgage interest deduction. The Dutch models predict that house prices will decline if the income tax treatment of owner-occupiers is phased out over a 20 year period, even if the savings are returned to taxpayers as a general reduction in tax rates. The extent of the decline will depend on supply elasticity.

The outcomes of the models predicted that even without tax reform, prices in the Dutch housing market are expected to come under pressure in the sense that, contrary to the previous decades, the growth of real house prices is predicted to be zero. If tax reform were to be carried out that reduces the benefit of the mortgage interest deduction, this would make housing more expensive. The models indicate that this will decrease demand and that house prices will respond with a decrease of between ten and 25 percent over a period of twenty years. The effect of housing becoming more expensive will have been mitigated by the general tax relief provided and the scarcity of dwellings on the Dutch housing market. It is important to realize that these effects are first-order effects that will change as households adapt their

behavior to the new situation. Also, the housing market will never be in equilibrium but is always moving towards an equilibrium with many opportunities to react to new stimuli.

As house price growth in the Netherlands has already been slowing down since 2000 and has become negative since the fourth quarter of 2008 because of the effects of the global financial crisis, a tax reform that would have the effect of making owner-occupied housing more expensive at the current time may be unfortunate.

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