



Interest Rate Risk

**The Consequences of an Interest Rate Shock
for Households in the Netherlands**

AFM - the Netherlands Authority for the Financial Markets

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The AFM, the Netherlands Authority for the Financial Markets, is the supervisory authority for the conduct of and the provision of information by all parties in the financial markets in the Netherlands, that is to say the savings, lending/borrowing, investment, and insurance markets. The AFM's objective, as laid down in its Statutes, is 'to promote an orderly and transparent market process, an honest relationship between market players, and the protection of the consumer on the financial markets'.

The AFM ensures that the parties comply with the relevant laws and rules. The AFM also advises the Dutch Ministry of Finance when new laws and rules are being drafted that relate to the supervision of conduct of business in the financial markets. Within the limits set by the Ministry, the AFM can also develop its own rules and regulations.

The AFM's operational objectives are:

- to promote access to the market;
- to promote the proper and correct operation of the market, and
- to maintain all parties' confidence in the market.

These objectives serve not only the interests of those who purchase financial services and products but also the economy as a whole. The general public, the business sector and the government all depend for many activities on the financial products that are offered on the markets. Confidence in the orderly and honest operation of those markets is therefore crucial, which is why proper supervision is very important.

In pursuing its objectives, the AFM is guided by such concepts as integrity, transparency, proper provision of information and equality.

The financial world is vast and many of the AFM's activities therefore focus on the passing on of standards, that is to say promoting greater understanding of the rules among companies and citizens so that they comply with the rules out of conviction. For example, the AFM provides information about new rules, interpretations and general observations. The AFM also asks financial institutions to carry out a self-assessment of whether they are contributing sufficiently to the objectives of supervision. This allows checks to be carried out systematically, namely where there is the greatest risk.

The AFM performs its supervisory role based on four principles, namely perfect knowledge of the facts, legally and economically fair analyses based on these facts, careful and balanced decisions based on the facts and analyses, and clear-cut responses where they are needed.

In those areas where the market can and wants to contribute to supervision, it must actively take this opportunity to do so. This means self-regulation or self-supervision. Supervision is needed when all parties observe that the market itself - that is to say without supervision - is not contributing sufficiently to the objectives of confidence, access and proper operation of the market. In the case of those parts of the financial market where regulation and supervision are necessary, the question is then whether the market players can carry out some or all of the supervision themselves and therefore to what extent is an external supervisory authority required.

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AFM - the Netherlands Authority for the Financial Markets (contd.)

The AFM is an autonomous administrative authority. The Ministry of Finance has delegated the various powers in the field of supervision of conduct of business in the financial markets to the AFM. As an autonomous administrative authority, the AFM is responsible for the actual exercising of its supervision. The AFM's Supervisory Board supervises the way in which the Executive Board performs its tasks. The Minister of Finance appoints the chairperson and members of the Executive Board and the Supervisory Board, and approves amendments to the Statutes and the annual budget.

When dealing with the external 'stakeholders', the AFM applies the basic principle of listening to all interested parties. The AFM is open to substantiated arguments. The consultation process plays a prominent role in the dialogue with the market players.

The AFM has an agreement with fellow supervisory authority the DNB (the Dutch Central Bank) regarding the division of tasks and operational collaboration. In addition, the AFM has entered into individual agreements with certain organisations in the Netherlands and Memoranda of Understanding with supervisory authorities abroad. There are a number of international partnerships and consultative bodies, the most important of which are the Committee of European Securities Regulators (CESR), and the International Organisation of Securities Commissions (IOSCO).

Summary and conclusions

Interest rates are at their lowest level for 30 years and may rise

At the end of 2004, the capital market interest rate was 3.8%, which means it is at about its lowest level in 30 years. The same is true of the money market interest rate, which was 2.2% at the end of 2004. However, various indicators are pointing to a potential rise in interest rates.

Households are running the risk of rising interest rates

Households have taken out consumer and mortgage credit that will (over time) become more expensive if the interest rate rises. This could cause payment problems for the households in question.

This report looks at the consequences of a possible interest rate rise for Dutch households:

- the report indicates how the interest rate may develop. Note that the AFM does not make predictions itself, but rather uses the predictions made by the OECD. An historical scenario of a leap in interest rates is presented too;
- the report shows which groups are having problems now and how those problems would be worse in the event of an interest rate rise;
- the report helps to make households aware of the risk, and the need to take responsibility themselves for their financial situation.

The interest rate may rise sharply over the next 2 years

It is difficult to predict future interest rate trends, but historical trends show that interest rates can rise sharply. Over the past 30 years, the maximum increase in the capital market interest rate has been 2 percentage points over a period of six consecutive quarters. The AFM has chosen this scenario as the basis for its analysis of the interest rate risk that households are running. The OECD is predicting a rise of 0.7 percentage points by the end of 2006. The money market interest rate fluctuates more than the capital market interest rate and thus could rise more rapidly.

An interest rate rise would have a significant impact on households

Many households in the Netherlands have consumer and mortgage debt. The higher house prices in recent years have led to many households taking out large mortgage loans. Financial institutions have granted larger mortgages than they would have done about 10 years ago for the same borrower income. At that time they would only grant a mortgage of up to three times the gross income, whereas in recent years a maximum of five times the gross income has been the usual practice. In addition, it is now possible to include a second income from the household in the mortgage calculation. Households have financed their homes 'more heavily', which has made them more vulnerable to an interest rate rise. Another factor that makes households more vulnerable to an interest rate rise is that more and more of them are choosing a variable interest rate.

Given current interest rate levels, it is estimated that a group of about 180,000 households has payment problems as a result of their mortgage debt

Depending on their income level, households are budgeting responsibly if they spend between 22% and 30% of their disposable income on mortgage payments. Disposable income is the income after deduction of taxes and social security contributions. The National Institute for Information on Consumer Budgets (NIBUD)^[1] in its calculations arrived at this budgetary leeway after deducting all normal day-to-day expenditure, such as food, clothing, phone charges, healthcare, etc. At current interest rate levels, a group of an estimated 180,000 households spends on average between 30% and 40% of their disposable income on mortgage payments. These figures are averages, which means that some households may be better off and some may be worse off. On average, this group of 180,000 households overshoots its budget for mortgage payments and gets into payment problems as a result. They have to make (drastic) cutbacks on other expenditure as a result or else use up some or all of any assets they may have. When this money runs out and no additional debt can be taken on, these households end up dealing with debt assistance agencies and may even be forced to sell their house. If the mortgage debt exceeds the value of the house, the household will be left with a residual debt.

If the interest rate rises by 2 percentage points, more than 80,000 additional households could get into payment difficulties

Higher interest rates mean higher mortgage payments. This happens immediately in the case of variable interest rates and after the fixed-rate period has expired in the case of loans that involve a fixed-rate interest period. Households can absorb the effect of higher charges via their income or their other assets. If a scenario is assumed whereby the interest rate rises 2 percentage points by the end of 2006, then it is estimated that more than 80,000 households will have insufficient income or assets to cope with an interest rate rise. This group is in addition to the estimated 180,000 households that are already finding it difficult to cope with the monthly payments at the current rate of interest. Therefore, the total estimate is that more than 260,000 of the 7 million households in the Netherlands would ultimately face serious payment problems in the event of an interest rate rise. That amounts to almost 9% of the approximately 3 million mortgages entered into.

[1] Budget Handboek 2004. Gegevens omtrent inkomsten, uitgaven en bestedingspatronen van particuliere huishoudens. NIBUD (National Institute for Information on Consumer Budgets), Utrecht, 2004. This budgetary leeway is the average for households with a certain income and is derived from CBS (Statistics Netherlands) figures. In other words, some households have more money left over for mortgage payments than others because they live more economically. If all normal expenditure is kept to an absolute minimum, then a larger part of the budget is left over. For the lowest incomes, for example, 30% is left over. See Annex 1. This report has assumed an average budgetary leeway associated with a certain income, given that consumers are in an unhealthy financial situation if they have to cut back on their essential everyday spending in order to pay the mortgage.

Extent and severity of problem greater than suggested by data

Averages underestimate the problems

Statements or conclusions about households relate to averages: individual households may be better or worse off than the average. In general, the conclusions drawn in this report are on the cautious side in terms of numbers and severity. In reality, the situation is more likely to be worse than better. The data provides no insight into that section of the vulnerable group that is made up of first-time buyers. They often have a reasonably high level of income but have had to take out fairly large loans to buy on the expensive housing market of recent years. In many cases, they have not yet been able to build up a substantial buffer that would cushion them against increased payments.

Additional vulnerability due to a potential drop in house prices

A number of forecasters including the IMF and the Economist magazine have forecasted a sharp fall in house prices. According to them, a 30% fall is not out of the question. Others, such as the Rabobank and Nyfer (the Nyenrode Forum for Economic Research), have a more moderate outlook in terms of house price trends. The Rabobank sees house prices rising slightly, whereas Nyfer's most probable scenario is that there will be a modest economic recovery until the end of 2007 in which house prices will remain stable. Should house prices actually fall, then those households with payment problems will be faced with additional difficulties, as they are more likely to be left with a residual debt. After all, if the payment problems get worse as a result of higher monthly payments due to a rise in interest rates, and homeowners are forced to sell their homes in a market with lower house prices, they may receive less for their house than their mortgage is worth. The sum that cannot be paid off becomes the residual debt.

Relationship between an interest rate rise, lower house prices, and the price of shares and bonds

According to economic theory, there is a link between an interest rate rise, a drop in house prices and the price of shares and bonds. A combination of these factors can significantly worsen households' financial position: an interest rate rise makes payments more difficult whilst the household's financial assets decrease in value (which may lead to reduced capital build-up for investment-based mortgages, for example). Those households forced to sell their house are then more likely to be left with an even greater residual debt.

The limitations of the data may be disguising the problem

The limitations of the available data are one reason why the conclusions drawn regarding the vulnerability of households are on the cautious side. Different types of debt are looked at individually, namely mortgage debt and debt for consumer purposes, but this data cannot be aggregated. The cumulative effect of different types of debt is a real problem in practice but this cannot be deduced from the data provided in the CBS dataset. This is why in practice the vulnerable groups of households are probably larger - and their problems probably greater - than indicated by the analysis.

1 Introduction

Purpose of this study

The aim of this report is to map out the consequences of a possible interest rate rise for Dutch households.^[2] This report also:

- indicates how interest rates may develop. Note that the AFM does not make predictions itself, but uses the predictions made by the OECD instead. An historical scenario of an interest rate shock is presented too;
- shows which groups are having problems now and which would start having problems in the event of an interest rate rise;
- helps to raise the awareness of consumers about the risk, and to encourage them to take responsibility themselves for their financial situation.

Structure of this report

The next section, Section 2, analyses the possible interest rate trend, using interest rate scenarios. Note that the scope of this report does not include an economic probability analysis of the interest rate trend. One scenario was developed by the OECD; in the other scenario the largest ever interest rate shock takes place from the current level. The AFM is not making any statement about the likelihood of such interest rate scenarios actually occurring; nor does this report analyse the effects that an interest rate rise could have on securities prices, house prices or macro-economic variables. Part 1 of this section contains a brief introduction to the various interest rates and the factors that influence the fluctuations in the interest rates. It also looks at the historic trend in the capital market rate and the money market rate. Part 2 deals with the possible interest rate scenarios.

Section 3 analyses the households that are vulnerable to an interest rate shock. A household is defined as ‘vulnerable’ if paying off debts becomes a problem as a consequence of insufficient assets or income or a combination of the two. This report looks at the different vulnerable groups. The impact of an interest rate rise and an interest rate shock is also analysed for each group. Section 3 also addresses the combination of these factors with possible loss of income as the result of unemployment, occupational disability and divorce.

Section 4 summarises the results of the market consultation process that the AFM has undertaken with stakeholders in respect of the results of this study.

[2] This report does not look at the effects of an interest rate rise on other groups (e.g. businesses).

The purpose of Section 5 is to provide pointers that the consumer can use to protect himself or herself against interest rate shocks. The consumer can be encouraged to take the following action:

- to draw up a financial plan/schedule, setting out his or her own financial position, aims, preferences and risks
- to find out about financial risks in general and the interest rate risk in particular, and
- to determine how much money he or she needs to achieve his or her goals and to ensure that he or she has a buffer, based on the financial plan.

2 Interest rates may rise sharply: two scenarios

The interest rate depends on a lot of different factors, which makes it difficult to predict the interest rate trend. Interest rates are currently at historically low levels but they can always rise sharply. In the 1970s and 1980s, interest rates of 10% were commonplace. At that time, the interest rate sometimes rose 2 percentage points^[3] within a single year. The OECD predicts an increase of 1 percentage point over the next six quarters. The money market rate is more volatile than the capital market rate and can therefore rise more quickly. An increase in the capital market rate of 2 percentage points from a level of 3.8% would mean that the interest rate has risen by 50%. A rise in the money market rate of 2 percentage points from a level rate of 2.2% would mean that this interest rate has nearly doubled.

Interest is payment for the use of credit. The short-term or money market rate is the interest rate for short-term credit. The long-term or capital market rate is the rate for long-term credit (i.e. a term of greater than one year). When inflation is expected to increase, long-term rates will rise because the lenders expect that the money they receive when the loan is repaid will have a reduced purchasing power. This is why they ask for compensation in the form of somewhat higher interest. On top of that there is an additional compensation to cover the risk that the borrower will be unable to repay the loan.

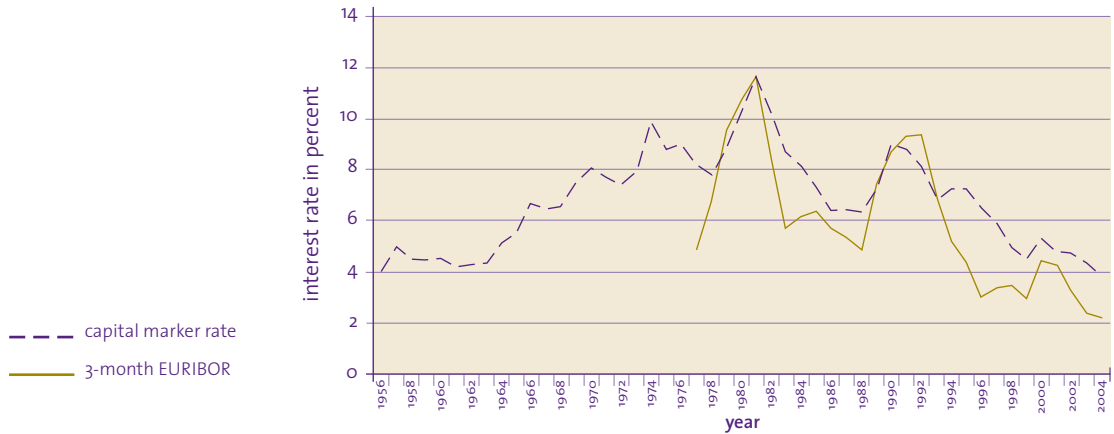
In general, the money market rate is an important instrument that central banks use as part of their monetary policy. This is because banks borrow a lot of money at this interest rate from the central bank, which they then lend to their customers. This means that in general the central banks can raise or lower the interest rate to influence the amount of money that banks have at their disposal. This gives them an instrument to influence the level of inflation and economic development. The central banks may use the money market rate very actively to stimulate or slow down a particular trend. As a result, the money market rate may fluctuate significantly. The capital market rate, on the other hand, is influenced to a greater extent by the borrowing patterns of governments and industry for investment purposes. These are generally longer-term factors, so the capital market rate is generally slightly more stable (see Figure 2.1).

Interest rate trends show major fluctuations

From the early 1960s to the early 1980s, the capital market rate showed an upward trend. Since 1981 this trend has been downward. Within these periods, there have been severe fluctuations. In the early 1970s, the interest rate shot upwards as a result of the world's first oil crisis.

[3] An increase of 1 percentage point means, for example, that the interest rate rises from 5% to 6%. A 50% rise means that the interest rate rises from 5% to 7.5%.

Figure 2.1 Capital market rate and money market rate trends show major fluctuations



Source: CBS (Statistics Netherlands), DNB (Dutch central bank). Edited by the AFM. The capital market rate here is the yield on the most recent ten-year Dutch State loan (from 1986 onwards) and the yield on the Dutch government medium-term loans (5-8 years' duration) for the years prior to 1986.

At that time, prices and inflation rose rapidly, partly as the result of the skyrocketing of oil prices. Another rapid and major increase in the capital market rate occurred between 1978 and the end of 1981 at the time of the second oil crisis and at a time when the Netherlands was also having to deal with persistent inflation, rising government deficits and an overheated housing market. During the 1980s, the interest rate roughly halved. During this time, the government was able to get its budget deficits back under control, which allowed actual inflation and inflation forecasts to be kept in check and the risk premium embodied in the interest on capital market borrowing to reduce. At the end of the 1980s, the capital market rate rose again significantly. This was mainly because the capital markets were called upon to help with rebuilding of the former Warsaw Pact countries after the fall of the Berlin Wall in 1989. A renewed period of falling interest rates commenced after the convergence criteria for the European Monetary Union came into force in the run-up to the introduction of the euro. As a result, the level of risk decreased, as did the level of forecast inflation, which allowed the capital market rate to fall again.

The money market rate too saw some very great fluctuations during the 26-year period that was analysed. From 1977 to 1981, the money market rate rose sharply and almost tripled. After a very considerable fall in the early 1980s, it skyrocketed again

at the end of the 1980s. This was mainly due to the agreement between the monetary authorities in Europe to link individual currencies to one another within certain bandwidths around set exchange rates within a European Monetary System (EMS). Economic trends on the European mainland and those in the United Kingdom and Ireland started deviating from each other, which led to worries that the British pound would be forced to leave the system. The United Kingdom therefore raised its interest rates rapidly to keep the British pound within the EMS, with the rest of Europe then being forced to follow suit. It was only after the British pound was eventually driven out of the EMS by speculators that the fluctuations in the money market rate started to ease off somewhat. When the European Monetary Union began to take shape and the member states, including the Netherlands, appeared to be complying with the convergence criteria, the money market rate quickly fell back to three-quarters of its peak value.

Interest rate fluctuations are often very large, which makes them difficult to predict. There are many factors that can influence interest rate levels. No specific forecasts will be made here; instead we will use scenarios. The first scenario uses the interest rate forecasts made by the well-respected Organisation for Economic Cooperation and Development, the OECD^[4]. The second scenario takes as its starting-point the historic (quarter-on-quarter) fluctuations of the last 22 years. In this scenario, the maximum successive quarterly increase for the previous 22 years is added to the current interest rate level. This increase was 2 percentage points over a period of 5 quarters. Figure 2.2 shows the scenarios for the capital market rate, on which most mortgage interest rates are based^[5].

Capital market rate scenarios

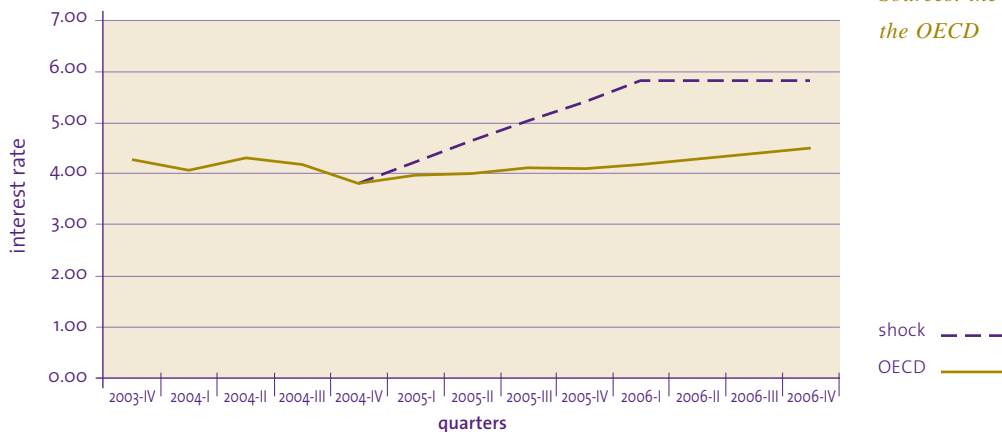


Figure 2.2
Sources: the AFM, the OECD

[4] OECD, Economic Outlook No. 76, November 2004.
[5] Most of the total outstanding amount of mortgage loans has a fixed-rate period of more than one year and is based on the capital market rate. This is why in this report the money market rate and the variable mortgage rate have not been taken into account.

In the OECD scenario, the capital market rate fluctuates only moderately. From the final quarter of 2004 onwards, it shows a slowly increasing trend, with the rate of increase quickening a little over time. In this scenario, the capital market rate rises from the current level of about 3.8% to 4.5% in the fourth quarter of 2006. In the second scenario, the capital market rate rises more rapidly, to a level of 5.8% in the first quarter of 2006. In other words, in the shock scenario the interest rate jumps more than 50% in a little over a year.

Consequences of rapid increase in interest rates delayed by long fixed-rate periods

In the first instance, an interest rate rise is a nuisance for people with debt. If the interest rate rises, then in principle the interest payments rise or, in the case of a continuous credit where the amount repaid each month is fixed, it takes longer before the debt is paid off. However, an interest rate rise does not immediately affect all debt. This is because for many loans, the interest rate may be fixed for a year or longer. It is estimated that 6% of all outstanding mortgages have an original fixed-rate period of less than five years^[6]. However, it does appear that the use of variable interest rates has become more common for new mortgages. In 2003, 23% of the new mortgage contracts had an original fixed-rate period of no more than 1 year (including fully variable rate loans), whereas in the first half of 2004 this proportion had risen to nearly one third^[7]. In the first instance, an interest rate rise only affects households that have a variable-rate mortgage or a fixed-rate period that is coming to an end and must now be reset. The variable-rate mortgages will be faced with this situation every time there is an interest rate rise. When the new fixed-rate is set for the next fixed-rate period, the question is whether this will benefit the household or not. For a number of households, the interest rate for the new fixed-rate period will be lower than the interest rate that they were used to paying. This is because current interest rates are at historically low levels.

Consumer credit is often at a variable rate of interest

Most consumer credit is based on variable interest rates. In general, the interest rates that have to be paid on this type of loan are high. Over the past year, households paid interest at a rate that on average was 50% higher than the variable mortgage rate^[8]. Note that the consumer credit payment method is often to repay a fixed sum each month, so if variable rates rise, the interest rate portion of the fixed monthly sum will increase and the repayment portion (the 'principal component') will reduce in size. As a result, consumers experience an interest rate rise in the form of a longer loan lifetime. In fact, their loan is actually an annuity with an indefinite lifetime. This means that people with a lot of consumer credit will be significantly affected financially by a potential interest rate rise^[9].

[6] Stichting Waarborgfonds Eigen Woningen, Jaarverslag 2003, p. 13 (Home Ownership Guarantee Fund Foundation Annual Report). This only relates to those mortgages covered by the National Mortgage Guarantee Scheme.

[7] DNB, Statistical Bulletin, September 2004, Table 3.8.2. Note that outside the Netherlands, variable-rate loans are much more common.

[8] DNB, Statistical Bulletin, September 2004, Table 3.8.2.

[9] This is gone into in more detail in the consumer credit report, see www.afm.nl in the calculations.

3 Risks of interest rate shocks for households

At current interest rate levels, it is estimated that a group of about 180,000 households has payment problems as the result of mortgage debts^[10]. In some cases, they are paying twice as much in mortgage charges at the current low interest rate levels than is advisable given their other necessary expenses. This means that they have payment problems and have to cut back on other spending or else use up any savings or other assets that they may have. These households would face even greater problems in the event of an interest rate rise. If the interest rate rises by 2 percentage points, it is forecaste that more than 80,000 additional households would have payment problems.

Not all households are equally vulnerable to an interest rate shock. Large groups of households have enough income and a certain capital that allows them to cope with any rising monthly payments without any problem. However, other households do get into difficulties as a result of rising interest rates and the consequent increase in monthly payments. This section analyses the effect of an interest rate rise on the financial position of different groups of households according to certain financial characteristics.

3.1 Analysing vulnerable households

The following analysis defines a household as ‘vulnerable’ if it has to spend more than a certain percentage of its disposable income on debt. This is the percentage that remains after deducting all essential household expenditure, such as food, clothing, healthcare, transport, telecommunications and the like. The disposable income is the income that remains after deduction of taxes and social security contributions. The essential expenditure is determined using the NIBUD reference budgets^[11]. In general, with higher incomes a higher percentage is left over for the payment of debts than is the case with lower incomes. This is because households with higher incomes do not spend proportionately more on the basic needs such as food. In economic theory, this effect is known as Engel’s Law. The percentage of disposable income that remains can be used to make the debt payments. Should a household exceed this percentage then it will have to use up any savings or other assets that it has or it will have to cut back on its essential expenditure. This may mean that there is no money left over for new clothes or to pay the phone bill. In the worst case scenario, the households have no leeway to reduce their spending on essential items and so are forced to sell their home and apply for debt restructuring.

[10] Each individual case is different. This relates to category averages. In other words, there will be households that are better off but also those that are worse off in each quartile or standard-of-living category. The following should be noted in respect of the analysis:

- Due to lack of data on the dates when the mortgages in the Netherlands were entered into, the interest rate when setting the first fixed-rate period in relation to the interest rate when entering a new fixed-rate period has not been taken into account. In other words, if people set their fixed rates when the rates were high, they may actually benefit when the fixed-rate period ends. This report does not consider this point further.
- Only a small proportion of Dutch mortgage loans have been taken out at variable rates of interest, which is why this report looks solely at the capital market rate and ignores the money market rate.

In the analysis, Dutch households are divided into 4 groups (quartiles), each consisting of 1.75 million households, based on their disposable income.^[12] In fact, this means that the total of about 7 million households are placed in order of ascending disposable income and 'cut up' into four equal groups of 1.75 million households each. For each of the quartiles, the disposable income of the middle household in the group has been used. This gives the median disposable income in the group.

The research data provides information on the debts and assets of the income quartiles. This is why it was decided in this study to compare this data to the median disposable income. The advantage of this method is that using this median disposable income allows the relevant NIBUD reference budgets to be used. This means statements can be made about the payment options of groups of households.

The necessary classification into four groups and the decision to work with median incomes does have one disadvantage, though, namely that the statements that can be made apply in all cases to the median household in the group on the basis of debt characteristics that reflect the group averages. It must be remembered, therefore, that every statement or conclusion about households relates to the averages for that category, with individual households being better or worse off than the average. In general, the conclusions in this report in terms of numbers and severity are on the conservative side: in reality, the position is more likely to be worse than better. For example, the reference budgets for single-person households are used as a basis, so if more than one person has to live on this one budget, the situation is worse.

So the conclusions regarding the vulnerability of households are on the cautious side, in part because of the limitations of the data used. Different types of debt are considered separately, namely mortgage debt and consumer debt, but the data cannot be aggregated. The piling-up of different types of debt is a real problem in practice, but information on this subject cannot be deduced from this CBS dataset. As a result, the groups of vulnerable households are probably larger in practice and their problems more severe than shown by the analysis.

[11] *Budget Handboek 2004. Gegevens omtrent inkomsten, uitgaven en bestedingspatronen van particuliere huishoudens. NIBUD (National Institute for Information on Consumer Budgets), Utrecht, 2004. This budgetary leeway is the average for households with a certain income and is derived from CBS (Statistics Netherlands) figures. In other words, some households have more money left over for mortgage payments than others because they live more economically. If all normal expenditure is kept to an absolute minimum, then a larger part of the budget is left over. For the lowest incomes, for example, 30% is left over. See Annex 1. This report has assumed an average budgetary leeway associated with a certain income, given that consumers are in an unhealthy financial situation if they have to cut back on their essential everyday spending in order to pay the mortgage.*

[12] *This classification is taken from the CBS approach, as are the data on households' disposable incomes. The calculation of the median income in the income quartiles was submitted to and approved by the CBS.*

Analysis of vulnerable groups at the current interest rate and in the event of an interest rate shock

The first to feel an interest rate shock are those households with variable-rate mortgages and/or variable-rate consumer debt. In the case of mortgages, the variable rate is currently lower than the interest rate that is fixed for a set period of time. However, the variable rate usually rises faster and by more than does the fixed rate. In addition, households whose fixed-rate period ends are faced with a change in interest rate. Depending on the interest rate in the fixed-rate period just ended, the interest rate shock can be positive or negative. Taking the average for all mortgages in the Netherlands, all mortgages will have had their interest rates set again by the end of an approximately 5-year period, which means that all households with a mortgage debt will be faced with a new set interest rate.

In addition, there are a number of events that can make it much more difficult to make the monthly payments, such as losing your job due to the economic slowdown. This means a reduction in income and makes it more difficult to make payments. In addition, changes in an individual's personal life, such as occupational disability and divorce, can reduce the level of available income.

3.2 Vulnerability due to mortgage debt

By far the biggest debt item for Dutch households is their mortgage. In total, about three of the seven million households have taken out a mortgage. The other households have repaid their mortgage or live in rented accommodation. Buying a house can be a valuable investment, but a debt brings commitments too, in the form of interest payments and loan repayments. A mortgage is usually entered into for many years, whereby a certain amount must be paid to the bank each year. A prerequisite for undertaking to make regular repayments is that in principle the person must have regular income (or possibly assets) to make these payments.

Every household has essential fixed expenditure, such as food, clothing, healthcare, phone bills and the like. In principle, the sum left after payment of this fixed expenditure can be used to pay the mortgage. Given a disposable income of € 11,000, the basic assumption is that 22% of it can be used to pay the mortgage payments.^[13] For an income of € 18,000, this figure is 25% and for an income of € 27,000 it is 30%.

[13] See Annex 1.

In the following table, households with a mortgage are classified into four income groups known as ‘quartiles’. As stated above, this means that all of the approximately 7 million households are placed in order of ascending disposable income and ‘cut up’ into four equal groups of 1.75 million households each. In each of the four quartiles, the disposable income of the middle household of the group has been used. This gives us the median disposable income for the group^[14].

Table 3.1 Relationship between mortgage and households’ income (2000)

	Lowest 25% income group	2nd lowest 25% income group	2nd highest 25% income group	Top 25% income group
Median disposable income	11,000	18,000	27,000	40,000
Number of households with mortgage	139,000	481,000	1,001,000	1,306,000
Mortgage amount	77,000	68,000	82,000	109,000
Value of own residence	147,000	147,000	168,000	228,000
Ratio of mortgage to value of own residence	52%	46%	49%	48%

*Source: CBS,
edited by the AFM*

Table 3.1 shows that in the lowest 25% income group of 1.75 million households, 139,000 households have a mortgage. In this group with the lowest incomes, the median disposable income is € 11,000. On average, the value of the house, € 147,000, exceeds the debt of € 77,000. In the second lowest income group, the median disposable income is € 18,000. In this group, 481,000 households have a mortgage debt. The average € 68,000 mortgage debt borne by the households in this group is also a lower average mortgage debt than that of the households in the lowest income group. Amongst households in the second highest and top income groups, house ownership is more common. In the second highest income group, 57% have a mortgage and in the top category a full three-quarters of the households have a mortgage.

139,000 households from the first quartile are vulnerable at current interest rate levels

First of all, the income quartile with a median disposable income of € 11,000 was analysed. In this quartile, 139,000 households have taken out a loan to buy their own residence, with an average amount outstanding of € 77,000. For an average outstanding debt of € 77,000 and interest rate of 4.8% per year, an annual € 3,696 in gross interest payments must be paid.

[14] The CBS’s most recent data is from the year 2000.

Mortgage payments for households in the first quartile, at current interest rates^[15]

Table 3.2

	Mortgage interest rate 4.8%
Gross interest payments per annum	€ 3,696
Net interest payments per annum	€ 2,476
Repayment portion	€ 500 ^[16]
Total net interest and repayment payments per year	€ 2,976
Ratio of payments to income	27%

Source: the AFM

In the Netherlands, the government encourages owner-occupancy by making the interest charges for a person's own home deductible against income tax. Including this tax relief, the annual net interest payments total an average of € 2,476^[17]. It is assumed that there is another € 500 for repayment payments. All in all, this means that the annual payment is € 2,976. If this burden is set against the average disposable income for the group of € 11,000, this means that 27% of the disposable income is used on interest and repayments. On average, a household with a disposable income of € 11,000 uses 22% of its income to pay mortgage payments, according to the NIBUD's reference budgets. This means that the 139,000 households at 27% are well above average and may have to use assets or make drastic spending cutbacks on other essential expenditure in order to be able to afford their mortgage payments.

The CBS data provides no insights into the composition of the different groups. This group may well contain many households that have had a loss of income in the past, due to, for example, unemployment, occupational disability or divorce, which has left them with a relatively high level of debt. This group may also contain people who have had to cope with a reduced income due to retirement but who have saved enough to be able to make their payments.

At current interest rate levels, households in the second income quartile are not facing any problems

The same analysis can be applied to the second income quartile, where 481,000 people have a mortgage. The median disposable income in this group is € 18,000 and the average outstanding mortgage debt is € 68,000.

[15] The interest rate is based on the capital market rate plus a standard margin of 1 percentage point. This margin may of course be more or less depending on the fixed-rate period, the underlying household income and the mortgage provider.

[16] We are assuming that 1/3 of the mortgage loan principal is repaid. If a household wants to pay off the entire debt, the repayment amount will be somewhat higher. Note that after 30 years the interest is no longer tax-deductible. Data derived from the notional rental value.

[17] Based on the tax relief rate for the first tax bracket.

Table 3.3 Mortgage payments for second quartile households at current interest rates

Source: the AFM

	Mortgage interest rate 4.8%
Gross interest payments per annum	€ 3,264
Net interest payments per annum	€ 2,187
Repayment portion	€ 450
Total net interest and repayment payments per year	€ 2,637
Ratio of payments to income	15%

Given an outstanding debt averaging € 68,000 and an interest rate of 4.8%, a sum of € 3,264 in net mortgage payments will have to be paid annually. If this burden is set off against the average disposable income of € 18,000 for this group, it can be seen that 15% of the disposable income is used to pay interest and repayments. This means that on average the households in this group remain well under the figure of 25% (Source: NIBUD) that is the average spend on housing costs with this level of income. At current interest rates, these 481,000 households will have no problem affording the payments.

An interest rate rise will create serious payment problems for 139,000 households in the first quartile

Households may find it difficult to make the mortgage payments if the interest rate rises. In the following table, the effect on mortgage payments has been calculated for the interest rate scenarios indicated for the group of 139,000 households from the first income quartile that have a mortgage.

Table 3.4 Mortgage payments for households in the first quartile in the event of an interest rate rise

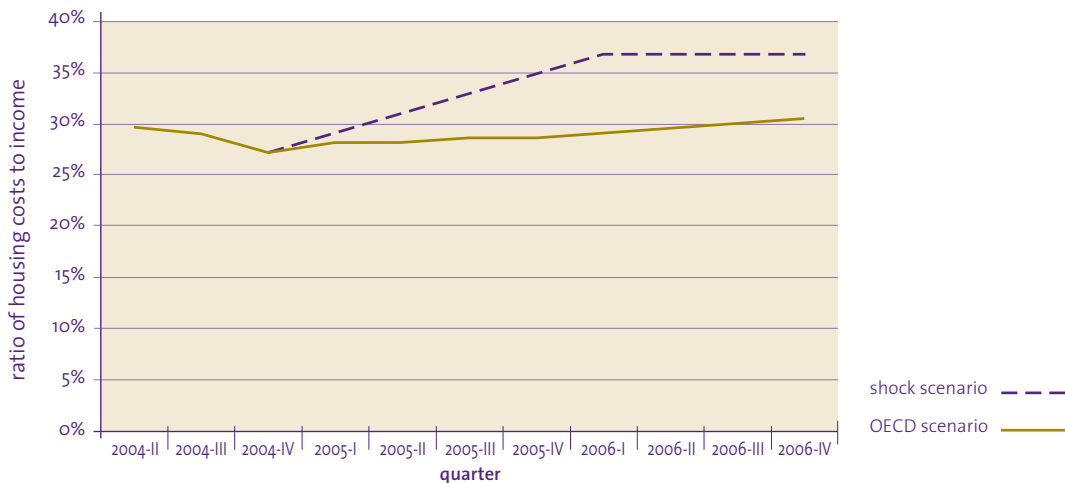
	Current interest rate: 4.8%	Shock scenario: interest rate rises to 6.8%	OECD scenario: interest rate rises to 5.5%
Gross interest payments per annum	€ 3,696	€ 5,236	€ 4,235
Net interest payments per annum	€ 2,476	€ 3,508	€ 2,837
Repayment portion	€ 500 ^[18]	€ 500	€ 500
Total net interest and repayment payments per year	€ 2,976	€ 4,008	€ 3,337
Ratio of payments to income	27%	36%	30%

Source: the AFM

[18] We are assuming that 1/3 of the principal of the mortgage loan is repaid. If a household wishes to repay the entire debt then the repayment portion will be somewhat higher.

An interest rate rise has seriously negative consequences for the group of 139,000 households. With the current low interest rate, these households pay an average of 27% of their income and have to use up their assets or cut back on other essential expenditure. In the conservative interest rate scenario presented by the economic thinktank OECD, mortgage payments will rise to 30% at the end of 2006. This is even higher in the shock scenario, namely 36%. The quarter-on-quarter trend in mortgage payments in the various scenarios is analysed in the following figure.

Trend in mortgage payments of households in the first income quartile with a mortgage in relation to income in successive quarters, in two different scenarios **Figure 3.1**



Source: the AFM

The above figure shows that in the interest rate shock scenario the annual housing costs rise quickly for those who have to renew their fixed-rate period. In the event of a modest interest rate rise, as in the OECD scenario, the percentage of income that is spent on interest and repayment increases slowly to exceed 30% by the end of 2006. In the shock scenario, the rate exceeds 30% as early as the second quarter of 2005. The consequences for this group of households are not pleasant, namely even greater depletion of assets or having to save even more on other expenditure such as food, clothing, care, education, and the like. A number of these households will undoubtedly be forced to sell their homes. This conclusion is also based on the rapidly rising numbers of forced sales and households with payment problems (see figures from the Home Ownership Guarantee Fund Foundation [Stichting Waarborgfonds Eigen Woningen]^[19]). It is also striking for this group of households that the average value of the house is

[19] The numbers of households under the National Mortgage Guarantee Scheme who are in payment arrears was 956 (in 2002), 1,246 (2003) and 835 (1st half of 2004). The number of forced sales at a loss was 80 (2002), 178 (2003) and 152 (1st half of 2004). Half-year figures 2004 from the Home Ownership Guarantee Fund Foundation regarding mortgages taken out under the National Mortgage Guarantee Scheme.

almost twice as high as their debt. This means that if some of the 139,000 households are no longer able to afford their housing costs, selling their houses would not leave them with a residual debt from their mortgage. Even an additional scenario with a possible collapse of house prices would not change that situation.^[20]

An interest rate shock will not cause payment problems for groups on higher incomes

The analysis of the consequences of an interest rate rise for the affordability of mortgage payments can be broadened to include the households from the second quartile, who on average will not be posed any problems by the current interest rate levels. The following table shows the change in ability to pay in the different interest rate scenarios.

Table 3.5 Mortgage payments of second quartile households in the event of an interest rate rise

	Current interest rate: 4.8%	Shock scenario: interest rate rises to 6.8%	OECD scenario: interest rate rises to 5.5%
Gross interest payments per annum	€ 3,264	€ 4,624	€ 3,740
Net interest payments per annum	€ 2,187	€ 3,098	€ 2,506
Repayment portion	€ 450	€ 450	€ 450
Total net interest and repayment payments per year	€ 2,637	€ 3,548	€ 2,956
Ratio of payments to income	15%	20%	16%

Source: the AFM The consequences of an interest rate rise for the group of 481,000 households are not a cause of any great concern. At the current low interest rates, these households are paying an average of 15% of their income. In the conservative scenario put forward by the economic thinktank OECD, the mortgage payments will have risen to 16% by as at the end of next year, whereas in the shock scenario this figure is somewhat higher, at 20%. On average, therefore, this group could deal with a significant interest rate shock, provided that no loss of income occurs and there are no payments for any other debts that make it to pay the mortgage.

[20] No separate scenarios in respect of the future trends in housing prices have been included in the calculations in this report, although some parties are concerned about a possible sharp fall (see IMF, World Economic Outlook, April 2003, and repeated articles in *The Economist*, see for example 'Shaky Foundations', 27 May 2003). Others, such as the NYFER and the Rabobank, take a more conservative view of housing price trends. See for example W. Bijkerk and M. van der Wal, *Risks on the Housing and Mortgage Markets in the Netherlands*, NYFER, Breukelen 2003. In the last quarter of 2004, house prices fell (Source: NVM (Dutch Association of Real Estate Brokers) and Kadaster (land and property registry)).

Situation with current interest rates	Situation in the event of interest rate shock with a variable-rate loan or when the fixed-rate period ends	
<p>139,000 households from the group with the lowest incomes pay an average of 27% of their disposable income in mortgage payments. This makes them financially vulnerable.</p> <p>The 481,000 households with incomes in the second quartile have no payment problems, as they spend 15% of their income on mortgage payments. The remaining 2.3 million households with a mortgage are found in the third and fourth income quartiles and spend even lower percentages of their income on mortgage payments. These groups have no payment problems.</p>	<p>139,000 households see the interest and repayment parts of their mortgage rise to 36% (first quartile, 139,000 households). The level of vulnerability increases.</p> <p>The 481,000 households with incomes in the second quartile have no payment problems, as they spend 20% of their income on mortgage payments. The remaining 2.3 million households with a mortgage are found in the third and fourth income quartiles and spend even lower percentages of their income on mortgage payments. These groups have no payment problems.</p>	<p>Vulnerable households: ‘low income, mortgage debt’</p>

3.3 Vulnerability due to mortgage debt and negative wealth

The vulnerability to an interest rate rise can also stem from the combination of mortgage debt and negative wealth. If there are no assets, then an increase in payments or a loss of income means that there is no buffer to fall back on. The following table provides information on the debts entered into to buy owner-occupied property by various groups of households classified by standard-of-living category. This is based on category averages, so for each standard-of-living category there will be households that are better off or worse off than the average.

Relationship between mortgage and households’ assets (2000)

Table 3.6

Assets	< 0	0 5,000	5,000 10,000	10,000 20,000	20,000 50,000	50,000 100,000	100,000 500,000	500,000 1,000,000
Number of households with mortgage	253,000	35,000	39,000	87,000	324,000	634,000	1,443,000	77,000
Mortgage amount	169,000	108,000	112,000	109,000	99,000	87,000	73,000	117,000
Value of residence	128,000	111,000	118,000	121,000	130,000	148,000	208,000	327,000
Mortgage/value of residence	132%	97%	95%	90%	76%	59%	35%	36%
Mortgage/assets ^[21]	N.A.	43.2	14.9	7.3	2.8	1.2	0.2	0.2

Source: CBS,
edited by the AFM

[21] The asset figure used is the average for the category, i.e. 2,500 for the category 0-5,000, etc.

253,000 households have a high mortgage and negative wealth ...

The above table shows that 253,000 households will be placed in a difficult position if there is an interest rate shock. They are combining a negative wealth with an average mortgage debt of € 169,000, whereby the average value of the residence is € 128,000. If their income is insufficient, they cannot fall back on a buffer of (liquid) assets. The 74,000 households (35,000 + 39,000) with assets of up to 10,000 euros will have little buffer against payment problems if there is an interest rate shock. If they are forced to sell their house, they are likely to be left with a residual debt. The value of their house is hovering around the level of their debt. A fall in housing prices could add to their problems.

Table 3.7 Mortgage payments of households with negative wealth. The four income quartiles at current interest rates

Source: the AFM

	Current interest rate: 4.8%
Gross interest payments per year	€ 8,112
Net interest payments per year	€ 5,435
Repayment portion	€ 1,000
Total net interest payments and repayments per year	€ 6,435
Ratio of payments to median income first quartile	59%
Ratio of payments to median income second quartile	36%
Ratio of payments to median income third quartile	24%
Ratio of payments to median income fourth quartile	16%

... and an estimated 54,000 households in the above group are having payment problems as a result of a combination of high mortgage amounts, negative wealth and relatively low income

The above table reveals that households with negative wealth and a disposable income that lies within the lowest two income quartiles earn too little to be able to afford their mortgage payments. At the current low interest rates, the housing costs are already 59% of disposable income for a household with the median income from the first quartile, and 36% of disposable income for a household with the median income from the second quartile. The percentages that the NIBUD reserves for mortgage payments are 22% and 25% of the disposable income respectively. This critical financial situation is facing 12,000 households from the first quartile and 42,000 households from the second

[22] The 2,927,000 households with a mortgage debt break down as follows:

1. First income quartile: 139,000 or 4.7%
3. Second income quartile: 481,000 or 16.4%
4. Third income quartile: 1,001,000 or 34.2%, and
5. Fourth income quartile: 1,306,000 or 44.6%.

This breakdown has been projected on the group of households with a negative wealth and a mortgage loan. Source: CBS, edited by the AFM.

quartile^[22]. The 86,000 households from the third quartile spend 24% of their disposable income of € 27,000 on their mortgage debt. This means that on average they are still below the 30% budgetary leeway figure that is the average for this level of income.

Mortgage debt of households with negative wealth. The four income quartiles in the event of an interest rate rise Table 3.8

	Current interest rate: 4.8%	Shock scenario: interest rate rises to 6.8%	OECD scenario: interest rate rises to 5.5%
Gross interest payments per year	€ 8,112	€ 11,543	€ 9,295
Net interest payments per year	€ 5,435	€ 7,734	€ 6,228
Repayment portion	€ 1,000	€ 1,000	€ 1,000
Total net interest payments and repayments per year	€ 6,435	€ 8,734	€ 7,228
Ratio of payments to median income first quartile	59%	79%	66%
Ratio of payments to median income second quartile	36%	49%	40%
Ratio of payments to median income third quartile	24%	32%	27%
Ratio of payments to median income fourth quartile	16%	22%	18%

An interest rate shock aggravates payment problems for an estimated 54,000 households and causes payment problems for another 86,000 households Source: the AFM

An interest rate shock would make it much more difficult for that group of households with a high mortgage debt and a negative wealth to afford their mortgage payments (see Table 3.8). Even with the modest interest rate rise in the OECD scenario, the basic housing costs rise to 66% (first quartile), 40% (second quartile), and 27% (third quartile) of the disposable income^[23]. In the shock scenario, whereby the mortgage rate rises to 6.8%, the basic housing costs increase to 79%, 49% and 32% respectively. This creates serious financial problems for a total of 140,000 households as regards paying their mortgage. They will have to restructure their debts and at a certain point sell their house. Their situation is also made worse by the fact that the value of their house (€ 128,000) is less than their mortgage debt (€ 169,000) (see Table 3.6). This means that they will be left with residual debt even after they sell their house.

[23] NIBUD Budget Handboek 2004. This manual is used by the CBS as a basis for its Continuous Budget Investigation 2000 [Doortlopend Budgetonderzoek 2000].

[24] Each individual case is different. These are averages for the category. This means that in each quartile or standard-of-living category there will not only be households that are better off but also households that are worse off.

	Situation at current interest rate levels	Situation in the event of an interest rate shock with a variable-rate loan or when the fixed-rate period ends^[24]
Vulnerable households: ‘negative wealth, mortgage debt’	<p>54,000 households with negative wealth have (too) high interest and repayment payments arising from their mortgage debt. They spend:</p> <ul style="list-style-type: none"> • 59% (first quartile, 12,000 households) • 36% (second quartile, 42,000 households) of their disposable income on mortgage payments. <p>199,000 households with negative wealth and an income from the third quartile (86,000 households) or from the fourth quartile (113,000 households) pay 24% and 16% respectively of their disposable income in mortgage payments, so on average they have no payment problems.</p>	<p>140,000 households (= 12,000 + 42,000 + 86,000) see their mortgage interest and repayment payments rise to at least:</p> <ul style="list-style-type: none"> • 79% (first quartile, 12,000 households) • 49% (second quartile, 42,000 households) • 32% (third quartile, 86,000 households) of their disposable income. <p>113,000 households from the fourth quartile spend 22% of their disposable income on mortgage payments, so they have no payment problems.</p>

3.4 Vulnerability due to high levels of other debt in relation to assets and income

The vulnerability of the households to an interest rate rise does not end with mortgage debts, as interest has to be paid on other debts too. Table 3.9 provides further information on the position of Dutch households regarding other debt.^[25]

Table 3.9 Ratio of other debt to income (2000). Lowest income group

	Lowest 25% income group	2nd lowest 25% income group	2nd highest 25% income group	Top 25% income group
Median disposable income	11,000	18,000	27,000	40,000
Number of households with other dept	471,000	491,000	608,000	696,000
Amount of other dept	13,000	12,000	15,000	28,000
Ratio of other dept to gross income	1.2	0.7	0.6	0.7

Source: CBS, edited by the AFM

[25] The amount of consumer credit, study debt, tax debt, instalment credit, negative bank balances (being ‘in the red’), interest-free loans etc.

The figures show that a remarkably large number of Dutch households (over 2.3 million) have debts. The level of income is hardly relevant: households in all four groups have debts. It is also the case that the higher the income, the higher the debt. The first group, with the lowest income level, is the most vulnerable, given the debt-income ratio: € 13,000 debt is set against just € 11,000 of income.

The 471,000 households from the first quartile with a debt 1.2 times as high as their annual income are in an alarming financial position. Unless they improve their income, they will have to use a considerable portion of their income for interest payments and to repay this debt. It is difficult to ascertain the level of this expenditure. Much of this debt is in the form of short-term credit with a variable interest rate, such as credit card debt, being ‘in the red’ on current accounts, and buying goods on hire purchase. In general, the interest rates that have to be paid on this type of loan are high. This means relatively onerous interest and repayment payments. Remember that consumer credit is often paid back with a fixed monthly amount, so if the variable rate rises, the interest portion of the fixed monthly amount will increase and the repayment portion will get smaller. This means that when interest rates rise, the fixed monthly amount will have to be paid for a longer period of time. In fact, this loan corresponds to an annuity with an indefinite lifetime.

The vulnerability can also be analysed by comparing assets with the level of debt. This has been done in the following table (Table 3.10) for the groups with the least assets.

Debt in relation to assets (2000)

Table 3.10

Assets	< 0	0 - 5.000	5.000 - 10.000	10.000 - 20.000
Number of households with other dept	786,000	198,000	79,000	100,000
Amount of other dept	12,000	4,000	7,000	8,000
Ratio of other dept to gross income	N.A.	1.6	0.9	0.5

What catches the eye in the above table is the large number of households (786,000) that have both debt and negative wealth. If the distribution of the total group with debt^[26] is projected onto the group with negative wealth, then more than 160,000 households have negative wealth, debt and a low disposable income (€ 11,000). These households have to try to live on € 11,000 annually and at the same time pay off a € 12,000 debt.

*Source: CBS,
edited by the AFM*

[26] The 2,265,000 households with other debt are distributed as follows: first income quartile: 471,000 or 20.8% of the total, second income quartile: 491,000 or 21.7%, third income quartile: 608,000 or 26.8%, fourth income quartile: 696,000 or 30.7%. Source: CBS Statline

This is no easy task, especially if the interest rate rises^[27].

Some of the households with the above combination may also have a mortgage. Unfortunately, the data available did not allow us to investigate this piling-up of debt further.

	Position at current interest rate levels	Position in the event of an interest rate shock with a variable-rate loan or when the fixed-rate period ends
Vulnerable households: 'negative wealth, other debt, low income'	<p>160,000 households have negative wealth and non-mortgage debt greater than their annual income. The interest rates for this type of loan are generally higher than for a mortgage, sometimes as much as 50% higher. In general, the debt burden as a percentage of the disposable income does not yet represent a critical payment problem. Nevertheless, the annual disposable income of € 11,000 is so small that a considerable proportion of this group will have problems making ends meet.</p>	<p>In the event of an interest rate shock, 160,000 households would have to make increasing payments. The question is whether they have enough income to make these higher payments, given that their negative wealth means that they do not have a buffer.</p>

3.5 Vulnerability of new borrowers

In addition to the households that are in difficulties at the current interest rate level and the households that would get into difficulties in the event of an interest rate shock, there is another group of households, namely those that intend to take out a loan. This group of households form a risk group if they take out a loan without taking the interest rate risk into account. The market for new consumer credit exceeds € 10 billion a year; for new mortgage financing it is about € 82 billion (2002) a year^[28]. Financial institutions are more flexible when it comes to granting a mortgage than they were about 10 years ago for the same borrower income^[29]: the maximum mortgage granted at that time was three times the borrower's gross income; these days, it has become commonplace to lend up to five times the borrower's gross income. At the same time, it is now also possible to take any second household income into account when calculating the financing.

[27] The actual distribution could be even more unfavourable, as we may assume that relatively more low income households have negative wealth.

[28] CBS press release, 10 February 2003 and www.cbs.nl/statline

[29] It is conceivable that the securitisation of the mortgage portfolio means that lenders now have to monitor their own position less closely.

As a result, households now finance their homes 'more acutely', which has made them more vulnerable to an interest rate rise. There has also been a significant increase in the number of borrowers choosing variable-rate financing.

3.6 Vulnerability due to other factors: unemployment, occupational disability and divorce

Households' financial position can come under additional pressure if there is a drop in income. This can happen as a result of unemployment or occupational disability. In general, the loss of income in the first year is about 30%; if the person remains unemployed for a longer period then his or her income could even drop to national social assistance level. If households have a high debt to income ratio, then they can come under severe pressure if their income drops for the long term. Only if these households have amassed sufficient assets will they be able to absorb such a sudden increase in payment pressure. For the year 2004, the Netherlands Bureau for Economic Policy Analysis (Centraal Plan Bureau (CPB)) forecasts that there will be 124,000 additional people unemployed with a further 45,000 in 2005.^[30] In addition, in 2003, 66,000 people were declared occupationally disabled^[31]. Given the slowdown in the number of new occupationally disabled as a result of the Gatekeeper Improvement Act (Verbetering Wet-Poortwachter) and the introduction of the new rules on occupational disability, it is estimated that the number of new occupationally disabled will be about 50,000 in 2004 with about the same number in 2005. Taken together with the unemployment figures, this means that 174,000 households in 2004 and 95,000 in 2005 will be faced with a loss of income. Finally, loss of income can also occur, along with debt payment problems, as a result of divorce. Over 90,000 couples get divorced each year.^[32] The number of additional households that get into payment problems as a result cannot be derived from the available data.

3.7 Conclusion

The series of figures about the financial vulnerability of the various groups of households as presented in the preceding sections paints a picture of a group of at least 180,000 households that are currently in financial difficulties as a result of their mortgage debts. It appears that a large proportion of this group would not be able to cope with an interest rate shock by liquidating assets or by virtue of their income. Some of the households in the group are in a critical financial situation and will be forced to sell their house. Those households that have a relatively high level of income, but also a high level

[30] www.cpb.nl/prognoses

[31] www.uwv.nl

[32] www.cbs.nl/statline

of debt, are also vulnerable to an interest rate shock. There are 86,000 households with a disposable income of € 27,000 that would certainly encounter payment problems if the interest rate were to rise by 2 percentage points, as can be seen from section 3.3. In total, therefore, over 260,000 households would encounter payment problems to a greater or lesser extent if there were to be an interest rate shock.

The conclusions drawn regarding the vulnerability of the households are on the cautious side. The above analysis looked at different types of debt, namely mortgage debt and consumer credit. These types of debt were analysed separately in respect of the risk that they pose to the different groups of households. It unfortunately proved impossible to derive information from the CBS data on those households who have piled up different types of debt. As a result, the actual sizes of the vulnerable groups of households will probably be larger and their problems more serious than is shown by this analysis.

4 The market consultation process

The AFM submitted a brief summary of this report to various interested parties, namely major financial institutions, smaller financial institutions, intermediaries and consumer interest groups. There now follows a brief report on this consultation process for each group of interested parties that was approached:

The major financial institutions

They explain that in general they have the problem of piling-up of loans and being financed too acutely sufficiently under control, thanks to their internal procedures. They claim that accordingly they are complying with their duty of care by working out a model scenario for each mortgage, under which the interest rate charged is 6%. This so-called ‘test interest rate’ stems from the Code of Conduct drawn up by the Dutch Mortgage Financiers’ Contact Body (Contactorgaan Hypothecair Financiers) and has to be deployed for mortgages with a lifetime of 5 years^[33]. The standard internal calculation of such an interest rate shock reduces the risk of default for the financial institution’s mortgage portfolio. Other, usually smaller providers do not use this internal calculation as standard. As a result, the mortgage portfolios of the providers that use these standard calculations have a lower risk of default than do the portfolios of the providers that do not use these standard calculations.

However, it is not standard practice for the providers who calculate a shock scenario and its consequences to show the results to their customer. As a result, the customer is not provided with an insight into the interest rate risk. The internal calculation does not mean that exceeding internal maximum limits for the ratio between monthly payments and income in this scenario will actually be used as grounds for rejecting the loan application. In many cases, loans are granted on the basis of subjective criteria, such as on the basis of assumptions regarding the customer’s career prospects and on the basis of the remuneration and/or profit that the provider will make on the loan.

The smaller financial institutions

A number of other interested parties state that the smaller financial institutions are less strict when it comes to the risky financing of mortgages. Some of these institutions:

- no longer set any income requirement at all when offering a mortgage (this only applies for loans for houses that are being financed for less than a certain percentage of the foreclosure value, which means that the provider only has a small risk), and
- offer mortgages with a lifetime of 6 or 7 years, which means that they circumvent the requirement to calculate the 6% scenario for any mortgage with a lifetime of 5 years or less, and only have to state the current mortgage rate.

[33] Article 6. The providers should also use this scenario when they provide a mortgage under the National Mortgage Guarantee Scheme.

In the case of smaller financial institutions too, subjective criteria play a role in the decision whether to grant a mortgage loan, as do assumptions about the customer's career prospects or the remuneration and/or profit that the provider will earn on the loan.

The intermediaries

The umbrella organisations recognise the risk of an interest rate rise. However, they also state that they have largely overcome this problem as their high-quality advisors draw the customer's attention to the risk inherent in an interest rate rise, and because the financial institutions generally calculate the scenario with a 6% interest rate. They also note that when negotiating a mortgage the customer exerts some pressure on the advisor, i.e. the consumer feels that the purchase of a house is somewhat more important than its financing. They also state that the risks in the market as a whole have increased, as more people finance 'more acutely' by taking out a loan that is a larger percentage of their income, and also because it is now more common for loans to be granted on the basis of two incomes.

Intermediaries (i.e. brokers) point out that they rely on the institution that is granting the mortgage to carry out this interest rate risk test. It is also clear that it is not standard practice amongst the intermediaries to point out the risk of an interest rate shock to the customer. The intermediary's primary concern is to sell the loan, as most of his income consists of brokerage fees. There is a risk, therefore, that he will 'pass the buck' to the institution offering the financing^[34].

The special interest groups

In general, the special interest groups inform consumers that there is indeed an interest rate risk and that they must be aware of all repayment risks, including the problems that can occur as a result of occupational disability, unemployment and divorce. They also inform the customer about the various types of loans and their individual features and risks. One organisation also recommends spreading the risk by taking out several part mortgages with different features. The organisation also notes that it recommends avoiding variable-rate loans, as most consumers take out the maximum permissible loan.

[34] See also: Ecorys-NEI: 'Markwerking op de markt voor hypothecaire dienstverlening: Analyse van de markt voor hypotheekverstrekking en de markt voor advies door tussenpersonen ('The market for mortgage services: Analysis of the market for mortgage provision and the market for the provision of advice by intermediaries'), Rotterdam 2004 and Letter to the Lower House of Parliament FM 2004-1593 from the Board of Financial Markets of the Ministry of Finance regarding matching advice, in which the concern was also expressed that 'fee-driven suboptimal selling of financial products' was taking place.

Conclusions: it is not standard practice to inform the customer about interest rate risk; increasing tendency for providers to try to avoid carrying out the affordability test an interest rate shock scenario

In general, the interested parties consulted recognised the increased level of risk arising from a potential interest rate shock. Many households have record levels of debt and have been financing themselves 'more acutely'. The interested parties put their faith in the performance of an interest rate shock scenario calculation, although in by no means all cases is this calculation actually shown to the consumer. It seems that the major institutions use this scenario more often than do the smaller providers and probably have a mortgage portfolio with a lower than average risk of default. This does not alter the fact that it is not standard practice to show the interest rate shock scenario to the customer when the deal is entered into. This means that the customer receives no overview of the consequences of an interest rate shock. In addition, there are an increasing number of providers that deliberately avoid the requirement to carry out the affordability test for the interest rate shock scenario by offering alternative loan lifetimes that the Code of Conduct for Mortgage Financing has not provided for, or by no longer even carrying out an income test.

5 How can households anticipate an interest rate shock?

This section provides a number of pointers that households can use to anticipate an interest rate shock. This section is less important for the 180,000 households that are already experiencing payment problems; instead, they would do better to obtain information about their problems from specialist organisations such as the NIBUD and the Dutch consumers' association (Consumentenbond). This section is primarily intended for the households that would have problems in the event of an interest rate shock, as well as new borrowers:

- Households with problems after an interest rate shock: 80,000 households that in the event of an interest rate shock would find it difficult to meet the interest payments, and
- New borrowers: households that intend to take out a loan and do so without being aware of the interest rate risk.

Recent research^[35] has shown that households often do not know enough about the financial products that they have purchased, which is why households must inform themselves about and be aware of the risks associated with borrowing in general and the interest rate risk in particular. When they have done so, they will be able to make a well-considered decision about buying a financial product.

The following sections discuss a number of tips for reducing the interest rate risk. The first section considers households with an existing loan. This is followed by households that intend to take out a loan. The final section presents two examples.

5.1 Information for consumers with an existing loan

The information in this section is important for households that have taken out a loan and that could face problems in the event of an interest rate shock. Solutions are not always available for those households that have already taken out a loan. Often, the only option available for them is to cut back on fixed expenses and put money aside.

What type of loan has been taken out?

The following information may help to reduce the interest rate risk, but this will depend on the type of loan and the loan conditions. This is why you need to be informed about the type of loan and the conditions if you want to properly weigh up your financial options.

Work out the budgetary leeway

Draw up a financial plan to work out your budgetary leeway and thus assess your current financial position. The starting point is to set out details of:

[35] NIPO: Multiclient research among lenders, 2004

- your own position
- your needs, goals and wishes, and
- the risks involved.

This will provide you with an understanding of your current and desired future financial situation. This can then be used to assess whether it is necessary to cover the interest rate risk. It may be advisable to consult a specialist, such as the NIBUD or the Dutch consumers' association (Consumentenbond). In addition, a financial advisor can be a useful source of advice^[36].

Extending the fixed-rate period

You can reduce your interest rate risk by extending the fixed-rate period, as the interest rate will then be fixed for a longer period of time. As already described earlier in this report, current interest rate levels are low. This means that it may make financial sense in certain circumstances to renew an existing mortgage under different conditions or to take out a loan with a longer fixed-rate period. When renewing an existing mortgage under different conditions, however, households will have to take into account the penalty interest and other costs that may be charged. The following example illustrates the imposition of penalty interest.

***Example:** After 6 years, a loan with a 10-year fixed-rate period and a 7.5% interest rate is repaid and renewed under different conditions. The new loan has a 10-year lifetime and a 5% interest rate. The bank calculates the following penalty interest: the residual lifetime is 4 years, the interest for the four-year fixed-rate period would now be 4.2%, for example. This percentage is deducted from the 7.5% interest rate. This makes the penalty interest rate for the four years 3.3%. As a result, instead of the previous 7.5% interest rate, a rate of $5\% + 3.3\% = 8.3\%$ interest will be charged for the next four years. In other words, the possible interest rate benefit depends very greatly on the residual lifetime and the difference between the current interest rate level and the previous fixed interest rate.*

Financial institutions often offer the option of financing the cost of renewing under different conditions, i.e. the penalty interest, at the same interest rate as for the loan. However, this interest rate will in all cases be higher than the interest rate paid on savings, and the penalty interest financed in this way cannot be offset against income tax. In other words, if you still have any savings deposits, it makes sense to use them in order to finance the costs of renewing under different conditions from your own funds.

[36] You can obtain more information on budgeting from such sources as the NIBUD (www.nibud.nl: 'Financiële planning' ('financial planning')) and Consumentenbond publication no. 33 (entitled 'Plan uw pensioen' ('plan your pension')).

Setting the variable-interest rate

No penalty interest needs to be paid if a variable-interest rate loan is renewed and changed into a fixed-rate loan. The current low interest rate level may mean that it makes good sense to choose a fixed-rate loan. However, households must realise that taking a loan to another lender will always entail additional costs. On the whole, renewing a savings-based mortgage under different conditions is not advisable because with this type of mortgage construction, the interest rate charged on the loan is linked to the interest rate credited on the savings capital. This means that if the loan is renewed at a lower interest rate, the interest rate that you receive on the capital that you have built up will be reduced too.

Putting money aside

Savings are a good way of building up a buffer against unforeseen financial risks. This applies to the interest rate risk too. Another benefit is that the interest on the savings balance has a levelling-out effect: the savings interest rate will rise as the loan interest rate rises, but these increases will not be parallel. The advantage of saving compared to borrowing is that the savings built up can be used both to absorb an interest rate shock and to cover other financial risks. The mortgage interest relief may be another reason to refrain from paying off the loan and instead to build up savings alongside the mortgage debt.

Paying off the existing loan

The paying-off process is determined by the conditions that the bank set when granting the mortgage. These days, many mortgages are redemption-free^[37], which means that the mortgage debt is only paid off at the end of the lifetime (usually 30 years). This means that the interest has to be paid on the entire sum for the entire lifetime. Paying off reduces the interest charges - and accordingly the interest rate risk - during the loan lifetime. The total debt remaining is smaller, as is the amount on which the interest rate risk is run. It is easier to set aside a sum for the redemption of the loan during a time of low interest rates (as is currently the case) than during a time of high interest rates.

5.2 Information for consumers who want to take out a loan

The information in this section applies to households who are considering taking out a loan. Taking out a loan cannot always be avoided. You may decide to take out a loan and make repayments and interest payments to finance major expenditure, such as a car that you need to replace and that you cannot do without. When deciding on a loan, you must also carefully consider whether to limit your interest rate risk or not.

[37] Recent research (TOF, GfK market research agency 2004) revealed that 43% of the total number of outstanding mortgages were redemption-free.

Your first step should always be to determine your budgetary leeway

Draw up a financial plan to determine your budgetary leeway. The first step here is to set out:

- your own (financial) situation,
- your needs, goals and wishes, and
- the risks that you are running.

In this way, you can get a good overview of your current and desired future financial situation and can weigh up whether you need to cover your interest rate risk. It may be advisable to consult specialists in the field, such as the NIBUD and the Dutch consumers' association (Consumentenbond), who can provide you with useful information. Alternatively, you can go to a financial advisor.^[38]

Compare the interest rate and the other terms and conditions

Before households decide whether to take out a loan or mortgage, they should first study the loan's terms and conditions carefully. If the loan is linked to an insurance policy, it is advisable to familiarise yourself with the terms of that policy. When comparing different loans, you should also compare the interest rates. Banks and other lenders are required to state the 'effective interest rate', which is the actual cost of the loan expressed as an annual percentage rate. The effective interest rate is the only way to accurately compare different loan offers.

Spreading the risk

Splitting the loan into different tranches allows you to select different fixed-interest periods. The advantage of this method is that when a fixed-rate period ends you do not have to finance the whole remaining debt at the interest rate then applicable, which may be much higher than the initial rate. Having different fixed-interest periods means that in each case only part of the debt is released, which spreads and thus limits the interest rate risk.

Choose the lifetime that's right for you

The sum that a household borrows has to be repaid within a certain period of time. A short loan lifetime will result in a higher redemption amount but it also means a lower total interest amount that has to be paid. You can select the loan lifetime based on your financial position. A very important factor here is the useful life of the product that you are buying. For example, if you are buying a car, the loan lifetime should not exceed the useful life of the car, otherwise you will be left with a residual debt.

[38] Additional information on financial budgeting may be obtained from such sources as the NIBUD (www.nibud.nl, 'Financiële planning' ('financial planning')) and Consumentenbond publication no. 33 entitled 'Plan uw pensioen' ('plan your pension').

Choose your fixed-rate periods carefully

When choosing a fixed-rate period(s), households must consider how much risk they can and are willing to take. Should they opt for low payments now or future certainty? Checking whether the loan will still be affordable if the interest rate rises by 3 percentage points or more, for example, provides useful information on the affordability of the loan. If you can only afford the loan payments if the interest rate stays low, then you are running a very grave interest rate risk. In such cases, it is advisable for a household to consider once again the amount of the loan that they wish to take out. Variable-rate loans are often advertised with a low interest rate, but remember that in many cases this rate is only temporary and the loan provider may increase it later. In other words, before taking out such a loan it is essential to look closely at the terms and conditions that apply to the (low) interest rate.

5.3 Examples of the consequences of an interest rate rise with a mortgage loan

This section looks briefly at the effect of an interest rate rise, using two examples. Both examples relate to households that have taken out mortgage loans whose fixed-rate period will end shortly and who will then have to deal with an interest rate rise.

First example: Fred and Diana

Fred (38) and Diana (36) have two children, Thomas and Lotte aged 2 and 4 years old. Their joint disposable income is € 3,000 per month. Four years ago they bought a single-family house for € 145,000. In order to finance this house and some major renovation work, Fred and Diana took out a € 170,000 mortgage. The interest rate on the mortgage loan was 5.3% and they chose a 5-year fixed-rate period.

The mortgage loan's fixed-rate period ends next year. Should there be an interest rate rise between now and a year's time, Fred and Diana will have to take out their loan at a higher interest rate. Should the interest rate rise to 5.5%, their net monthly mortgage payment would rise from € 443 to € 457. As a result, the total monthly payments would rise to € 2,933.

Expenditure for a mortgage rate of	5.3%	5.5%	6.8%
Net monthly mortgage payments (interest + repayment ^[39])	€ 443	€ 457	€ 554
Monthly spending pattern ^[40] (excl. mortgage payments)	€ 2,476	€ 2,476	€ 2,476
Total monthly expenditure	€ 2,919	€ 2,933	€ 3,030

Fred and Diana can still afford their monthly expenditure. However, in the event an interest rate shock to 6.8%, they will have a problem. If this happens, they will not be earning enough to finance their monthly expenditure. Another problem for Fred and Diana is that when they can no longer afford their monthly expenditure and have to sell their house, the proceeds from the sale will be insufficient to pay off the remaining mortgage debt. This is because their house is worth considerably less than the amount of the mortgage that they took out.

[39] Based on a repayment sum of € 1,000 per annum.

[40] Source: NIBUD reference budgets: insurance policies, water, electricity, clothing, household expenditure

How can Fred and Diana limit their interest rate risk?

- Fred and Diana can draw up a financial plan and use this as a basis for saving up funds to create a buffer. In the event of an interest rate shock they will then be able to make the additional payments from their savings. If there is no interest rate shock, the savings can be used to cover any other financial setbacks.
- By extending the fixed-rate period. By extending the fixed-rate period, Fred and Diana will be able to limit their interest rate risk. The short remaining lifetime of a single year means that the penalty interest charged for refinancing the mortgage will be low.
- By making additional repayment payments. Consider making additional repayments if the financial plan provides leeway to do so.

Building up a financial buffer

Let us assume that Fred and Diana decide to create a financial buffer by saving € 100 a month on their expenditure. They then put this amount into their savings account each month, on which they receive 3% interest. The table below shows that their financial buffer grows every year. The compound interest effect (i.e. interest on interest) means that each year the buffer grows a little more quickly than in the previous year. After 5 years, they have already built up a buffer of € 6,474, which means that they can absorb the consequences of any interest rate shock for many more years to come.

Year	Size of buffer
1	€ 1,219
2	€ 2,475
3	€ 3,769
4	€ 5,102
5	€ 6,474

Second example: Boris

Boris (33) lives alone and has no children. His disposable income is € 900 per month. He divorced four years ago and has taken over the apartment in which he used to live with his wife. In order to finance the apartment and the installation of a new kitchen, Boris took out a € 77,000 mortgage. Boris chose a mortgage loan with a variable interest rate, on which he is currently paying 3.2% interest.

The current interest rate for a ten-year period is 5.3%. If Boris now decides to opt for this fixed interest rate, he will significantly reduce his interest rate risk. However, his monthly mortgage payments would rise from € 176 to € 269 and his total expenditure would therefore exceed his monthly disposable income. Boris's monthly expenditure for the different fixed-rate periods is set out in the following table:

Expenditure for a mortgage rate of	3.2%*	5.3%	5.5%	6.8%
Net monthly mortgage payments (interest + repayment ^[41])	€ 176	€ 269	€ 276	€ 331
Monthly spending pattern ^[42] (excl. mortgage payments)	€ 713	€ 713	€ 713	€ 713
Total monthly expenditure	€ 889	€ 982	€ 989	€ 1,044

**Based on a variable mortgage rate (year-end 2004)*

With a variable rate, Boris can still afford the monthly payments. If he now wants to limit his interest rate risk by changing over to a ten-year fixed-rate period, the question is whether he will still be able to afford his mortgage payments. If he decides to stick to a mortgage with a variable-interest rate, he will continue to run a significant interest rate risk, as he has no control over his monthly expenditure in the case of a variable interest rate. Luckily, he has considerable surplus equity at his disposal, as his house is worth twice as much as his mortgage. If he can no longer afford his mortgage payments, he can sell his house and pay off the entire mortgage debt. Boris can decide to stick with the variable-interest rate, but then he will be running a significant interest rate risk.

How can Boris limit his interest rate risk?

- Boris can draw up a financial plan and use it as a basis for saving up funds to create a buffer. In the event of an interest rate shock he will then be able to make the additional payments from his savings. If there is no interest rate shock, he can use the savings to cover any other financial setbacks.
- By changing the variable rate to a fixed-rate mortgage. However, he can only convert the variable-rate loan to a fixed-rate loan if he has the leeway to do so under the financial plan. It would be advisable to convert the variable rate to a fixed rate in order to limit the interest rate risk, but this may not be affordable. Another option is to fix the rate for five years, whereby the interest rate would be lower than for a ten-year period.

[41] Based on a repayment sum of € 500 per annum.

[42] Source: NIBUD reference budgets: insurance, water, electricity, clothing, household expenditure

Annex 1

Reference budgets and specimen budget

	Reference budgets*			Specimen budgets**
	Average for first quartile	Average for second quartile	Average for third quartile	First quartile
Disposable income per annum	11,000	18,000	27,000	11,000
Dito, per month	917	1,500	2,250	917
Expenditure:				
Rent / mortgage	Residual item	Residual item	Residual item	Residual item
Gas	38	38	40	50
Electricity	22	25	27	19
Water	7,5	8	9	8
Levies	22.5	30	34	32
Phone	34	40	54	21
Insurance	39.5	57	101	50
Study costs	16	24	24	0
Membership fees/subscriptions	28	49	69	33
Transport	73	201	282	11
Total fixed expenditure	280.5	472	640	224
Clothing and footwear	53	74	127	40
Fittings	48.5	87	142	54
Maintenance of house/garden	15	32	40	80
Additional medical expanses	12	12	24	10
Hobbies/going out/holidays	94.5	196	311	37
Total reserve expenditure	223	401	644	221
Food and snacks/refreshments	152	178	195	160
Other household expenditure	62,5	69	99	34
Total household budget	214.5	247	294	194
Total expenditure	718	1,120	1,578	639
Total expenditure per year	8,616	13,440	18,936	7,668
Percentage of disposable income remaining to pay for mortgage payments	22%	25%	30%	30%

Source: NIBUD (2004)

* The reference budgets are the average expenditure for a single-person household for the income in question. The AFM has made the amount spent on the mortgage or rent into a residual item in order to calculate the budget left over to pay for this item. Naturally, households consisting of more than one person will usually spend more than these reference budgets, which will reduce the leeway to make mortgage payments. This has been taken into account in this report by means of abstraction.

** The specimen budget is the standard budget that the NIBUD draws up when advising customers. The amounts included in it are seen as the absolute minimum amounts for an item for a single-person household. The AFM has made the amount spent on mortgage or rent into a residual item in order to calculate the budget left over to pay for this item. Naturally, households consisting of more than one person will usually spend more than these reference budgets, which will reduce the leeway to make mortgage payments. This has been taken into account in this report by means of abstraction.



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