



REPORT

The Swedish Mortgage Market

13 MARCH 2012





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Summary

Households' loan-to-value ratio for new loans decreased during 2011 for the first time since 2002 - the first year comparable data was available. This trend was confirmed by the banks in the qualitative portion of survey; all banks state that the demand for high loan-to-value ratios decreased following the introduction of the mortgage cap.

Just under nine per cent of the new mortgages granted to the households in the sample have a loan-to-value ratio that exceeds 85 per cent. This represents a 50 per cent decrease compared to the random sample taken in 2009. Fourteen per cent of the households were granted a new mortgage with a loan-to-value ratio of exactly 85 per cent, which gives a clear indication that the mortgage cap has had a normative effect. In general, the banks are restrictive about granting loans for more than 85 per cent of the value of the home and often require such loans to undergo a special decision-making process before they are granted. Of the households which were granted a new mortgage and have a loan-to-value ratio that exceeds 85 per cent, 98 per cent amortise their loan.

Some banks offer their customers unsecured loans in conjunction with mortgages. Unsecured lending increased slightly over the past year, however the share of unsecured loans that are related to loans for housing purposes is very small.

Stress tests of the data from the random sample show that most households which were granted a new mortgage have a strong repayment capacity and can handle increases in the interest rate. Only a limited portion of the households are affected even when simultaneously applying assumptions of sharp drops in house prices and sharp rises in unemployment, which indicates that Swedish mortgages are currently not a threat to financial stability.

FI'S MORTGAGE SURVEY

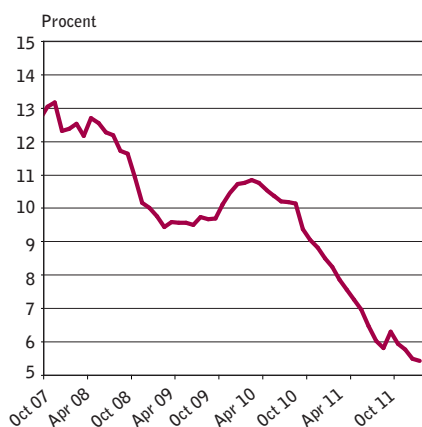
Finansinspektionen (FI) conducted a survey to follow up the effects of the mortgage cap one year after the cap was introduced. The survey of the banks consisted of three parts: a random sample of new mortgages, the compilation of data at an aggregate level and questions that were qualitative in nature. Based on the responses from the banks, FI analysed the effects of the mortgage cap and tested the sensitivity of the households to increases in the interest rate, a loss of income and falling house prices.

Background

Lending to Swedish households continues to rise, but at a slower rate than before. Almost two-thirds of Sweden's population lives in a privately owned house or owns shares in a tenant-owner association, and mortgages comprise the largest share of household debt. Mortgage lending is therefore an important part of Finansinspektionen's (FI's) analysis of risks to financial stability and consumer protection in the financial markets.

Mortgages comprise roughly 90 per cent of Swedish household debt. Since the mid-1990s, household indebtedness rose sharply in parallel with house prices. During almost the entire 2000s, households' loan-to-value ratios, i.e. the size of the mortgage in relation to the market value of the home, also rose. Given this backdrop, FI decided to issue general guidelines limiting the size of loans collateralised by homes. The mortgage cap, as the general guidelines are referred to, entered into force on 1 October 2010 and states that a loan collateralised by a home may not exceed 85 per cent of the market value of the home.¹ The ultimate goal of the regulation is to prevent unsound lending practices on the mortgage market and rising loan-to-value ratios. In 2011, lending growth fell to 7 per cent on average, compared to almost 10 per cent on average during 2009 and 2010 (Diagram 1).

Diagram 1. MORTGAGE LENDING GROWTH (annual rate)



Source: SCB, Financial Market Statistics, 2012-02-27

DESCRIPTION OF THE SURVEY

One of the primary objectives of the mortgage survey is to follow up on the effects of the mortgage cap and assess the presence of any risks associated with the indebtedness of households which were granted new mortgages. The survey also tests the sensitivity of these households to a rise in interest rates, loss of income and fall in house prices. Households with very high loan-to-value ratios are of particular interest from a consumer protection perspective.

The banks (including their housing credit institutions) that participated in the survey were Handelsbanken, Swedbank, SEB, Nordea, SBAB Bank, Länsförsäkringar Bank, Skandiabanken and Danske Bank. The survey consisted of three parts:

- Information at an aggregate level using variables pre-defined by FI was compiled from the banks. Using a form provided by FI, the banks gathered the underlying information themselves and reported the total aggregate sum. This data is referred to as the aggregate data and contains information about *new loans and the mortgage stock*. It includes information about, for example, lending volumes, amortisation and loan-to-value ratios for *the mortgage stock and new loans*. FI has been compiling aggregate data from the banks regarding their lending for housing purposes since 2006.
- A sample of new loans paid out at the household level (micro-level), hereafter referred to as the *random sample*, was gathered from the banks. The random sample includes all new mortgage agreements

¹ The general guidelines apply to the provision of new loans, but also to increases of existing loans collateralised by homes, and apply only to homes located in Sweden. For more information, see the decision memorandum for Finansinspektionen's general guidelines regarding limitations to the size of loans collateralised by homes.

entered into during the period 26 September-6 October 2011, in total more than 12,000 loans.² A random sample of new mortgages has only been taken once before, in conjunction with the mortgage survey FI conducted in 2009.

- *Qualitative information* was compiled through a list of in-depth questions that addressed topics such as the banks' valuation of homes, borrower assessments and views on loan-to-value ratios and amortisation.

This report is based on information from all three parts of the survey. The report primarily focuses exclusively on new loans, either from the random sample or the aggregate data. The stress tests were conducted entirely on new loans from the random sample. Unless stated otherwise in the report, references are to new loans from the random sample. The report includes an appendix of diagrams. Tables 1 and 2 provide a general overview of the loans in the random sample.

TABLE 1. Geographic distribution of the loans (random sample)

	Greater Stockholm	Greater Gothenburg	Greater Malmö	Other areas of Sweden	Total
Share of borrowers (%)	28	11	8	54	
Share of volume of granted loans (%)	40	12	8	40	
Average loan size (SEK)	1 500 400	1 167 900	1 047 300	775 800	1 041 200
Average market value of the home (SEK)	3 162 700	2 606 800	2 257 500	1 506 500	2 145 000
Average disposable income (SEK)	38 500	36 900	33 500	30 500	33 700

TABLE 2. Age distribution of the loans (random sample)

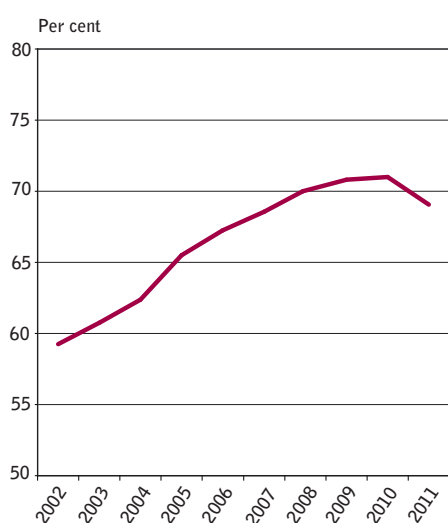
	16-25	26-35	36-50	51-65	> 65
Share of borrowers (%)	8	24	35	24	10
Share of volume of granted loans (%)	5	29	40	20	6
Average loan size (SEK)	748 800	1 276 900	1 173 000	884 200	603 900
Average market value of the home (SEK)	1 012 800	1 990 000	2 500 700	2 195 700	1 993 500
Average disposable income (SEK)	22 200	31 700	38 800	35 700	24 000

² The definition of new mortgage agreements in the random sample includes strictly new borrowers and existing borrowers who raised new loans on existing collateral of such scope that the loan-to-value ratio increased by more than 50 per cent. Statistical analyses of the random sample were conducted on a population of 12,685 households.

Borrower analysis

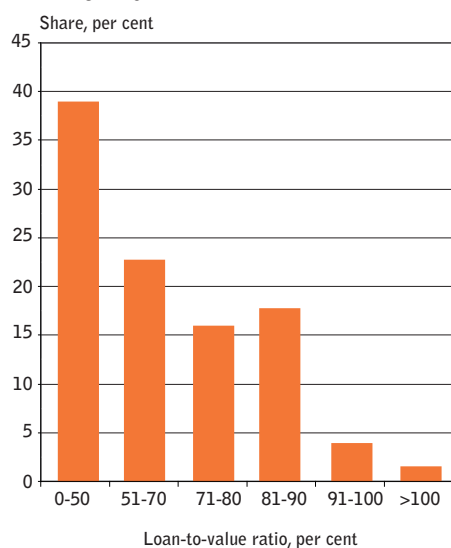
The loan-to-value ratio for new loans decreased for the first time since comparable data has been available. The banks report that demand for high loan-to-value ratios has decreased since the mortgage cap was introduced. Fourteen per cent of the households in the random sample of new mortgages have a loan-to-value ratio of exactly 85 per cent, which gives a clear indication that the mortgage cap has had a normative effect. Only nine per cent of the households in the random sample have a loan-to-value ratio that exceeds 85 per cent.

Diagram 2. LOAN-TO-VALUE RATIO OF NEW LOANS



Source: Aggregate data

Diagram 3. LOAN-TO-VALUE RATIOS FOLLOWING THE MOST RECENT VALUATION



Source: Aggregate data

LOAN-TO-VALUE RATIOS

During 2011, the loan-to-value ratio³ for *new loans* at the aggregate level fell for the first time since 2002, the first year comparable data was gathered (Diagram 2).⁴ Prior to 2010, the year the mortgage cap was implemented, loan-to-value ratios had increased steadily.

The fall in the loan-to-value ratio for new loans is confirmed by the banks in the qualitative portion of the survey. They report that the volume of mortgages with a loan-to-value greater than 85 per cent has decreased since the mortgage cap was introduced. All of the banks that were included in the survey state that their credit instructions have been adapted to be in line with the mortgage cap. The banks state that demand for high loan-to-value ratios has decreased.

Young borrowers (age 16–25) represent eight per cent of the random sample of new mortgages from 2011, compared to two per cent in 2009. This indicates that the mortgage cap has not prevented the youngest borrowers from entering the mortgage market.

According to half of the banks, it has become more common for customers, primarily first-time buyers, to be denied a mortgage. Several of the banks say that the number of rejections has not increased, but rather that customers themselves have become more knowledgeable about the regulation and therefore have chosen not to purchase a home and thus do not need to apply for a mortgage.

Even the loan-to-value ratio for the *mortgage stock* as a whole has decreased since the 2009 survey. Following the most recent valuation⁵, this ratio was roughly 60 per cent compared to 63 per cent in 2009. The share of the banks' outstanding mortgage stock with the highest loan-to-value ratios – over 90 per cent – has also decreased and, at the time of the banks' most recent valuation, was just over 5 per cent (Diagram 3).

The average loan-to-value ratio for *new loans* in the random sample is 70 per cent, which is in line with the loan-to-value ratio for new loans at the aggregate level (Diagram 2).⁶ The loan-to-value ratio does not vary

3 The calculation of loan-to-value ratios differs slightly between the random sample and the aggregate data. Descriptions of the calculation methods are presented in the glossary.

4 All average data in the report is volume-weighted. The first three quarters of 2011 were used to calculate a full-year estimate for 2011 in the aggregate data.

5 Most of the banks in the survey revalued their stock in 2011.

6 One factor of uncertainty in both the random sample and the aggregate data is unsecured loans. Several of the banks have found it difficult to separate their unsecured loans for housing purposes from other unsecured loans. However, the

Diagram 4. LOAN-TO-VALUE RATIO

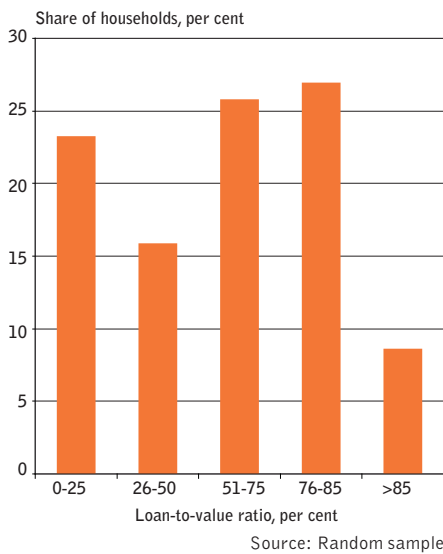


Diagram 5. LOAN-TO-VALUE RATIO PER AGE GROUP

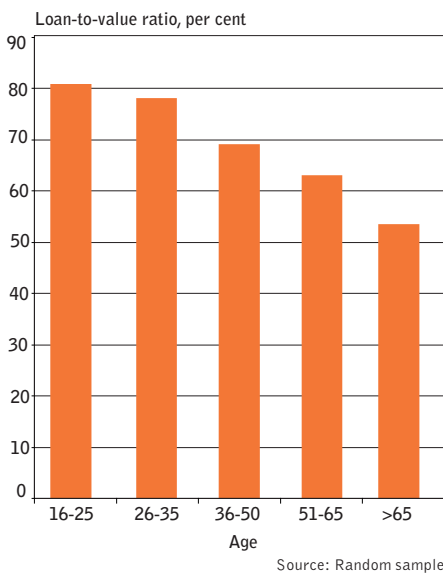
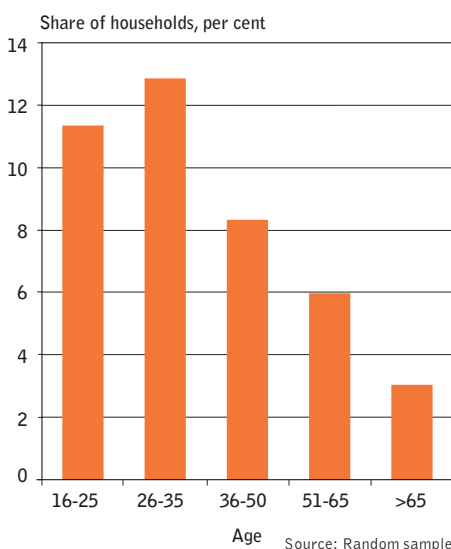


Diagram 6. LOAN-TO-VALUE RATIO EXCEEDING 85 PER CENT PER AGE GROUP



much between the major cities and the rest of the country, although the share of households with a loan-to-value ratio exceeding 85 per cent is higher in the rest of the country than in the major cities. Fourteen per cent of the households in the random sample of new mortgages have a loan-to-value ratio of exactly 85 per cent, which gives a clear indication that the mortgage cap has had a normative effect.

The majority of the banks still divide their mortgages into "top loans" and "bottom loans". They allow the bottom loan to be fully collateralised by the home for up to between 75 and 85 per cent of the market value. In cases where the bottom loan covers 75-80 per cent, the banks often offer top loans for the remaining portion up to 85 per cent.

Most, but not all, of the banks offer unsecured loans for the portion of the loan-to-value ratio that exceeds 85 per cent. A normal method for funding loans above 85 per cent is to collateralise an object belonging to the borrower's parents or another close relation. The banks report that borrowers must meet very high requirements if they are to be granted a loan exceeding 85 per cent of the loan-to-value ratio and that the maximum granted loan-to-value has gone down.

The majority of the banks that offer unsecured financing for housing purposes state that it is somewhat more common to grant an unsecured loan today than it was before the mortgage cap. This is confirmed by the aggregate data, which shows that the share of unsecured loans that can be linked to lending for housing purposes has increased slightly in relation to new mortgages since the introduction of the mortgage cap. The overall volume of unsecured loans, however, is still small. This is supported by public statistics.⁷

Around nine per cent of the households in the random sample of new mortgages have a loan-to-value ratio above the mortgage cap's limit of 85 per cent (Diagram 4).⁸ The corresponding data from the 2009 mortgage survey was 20 per cent.

Around three-fourths of the households which were granted a new mortgage and have a loan-to-value ratio exceeding 85 per cent are in the age groups 26-35 or 36-50. These households have a slightly stronger repayment capacity than the average in each respective group. Households in the age groups 26-35 and 36-50 are also over-represented among borrowers receiving a new mortgage with a loan-to-value ratio of exactly 85 per cent.

Eleven per cent of the random sample's youngest age group (16-25) which were granted a new mortgage has a loan-to-value ratio that exceeds 85 per cent. Thirty-five per cent of this age group have a loan-to-value ratio of exactly 85 per cent, which provides additional evidence that the mortgage cap has had a normative effect. In contrast, the random sample of new mortgages from 2009 showed that 51 per cent of the households in the youngest category had a loan-to-value ratio over 85 per cent.

The banks report that the interest rate for unsecured loans is between

reported information is judged to provide a reasonable approximation.

⁷ SCB, Financial Market Statistics, 2012-02-27.

⁸ Loan-to-value ratios of greater than 85 per cent can also occur if a customer who was granted the loan before the mortgage cap was introduced switches banks.

Diagram 7. MORTGAGE IN RELATION TO DISPOSABLE INCOME

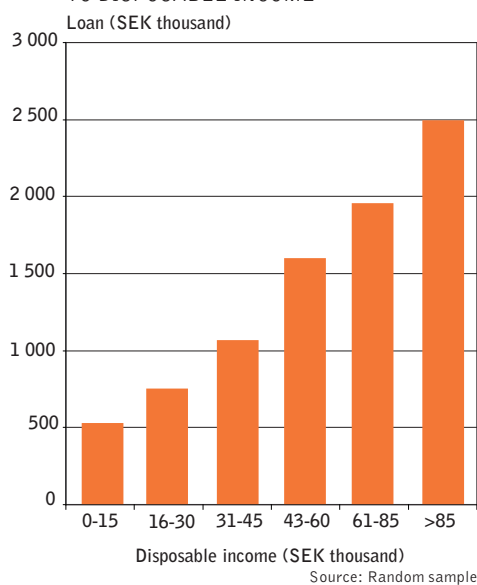


Diagram 8. HOUSEHOLD DEBT RATIOS

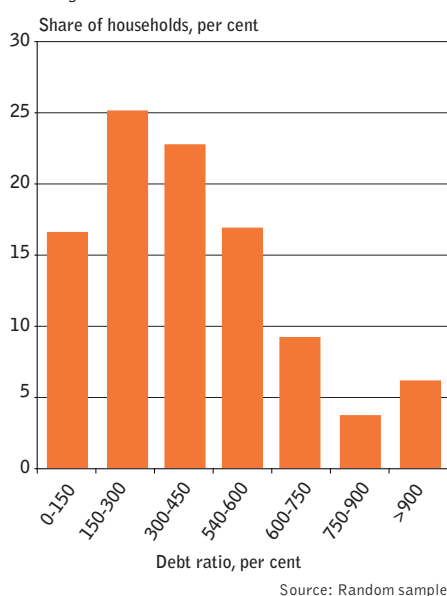
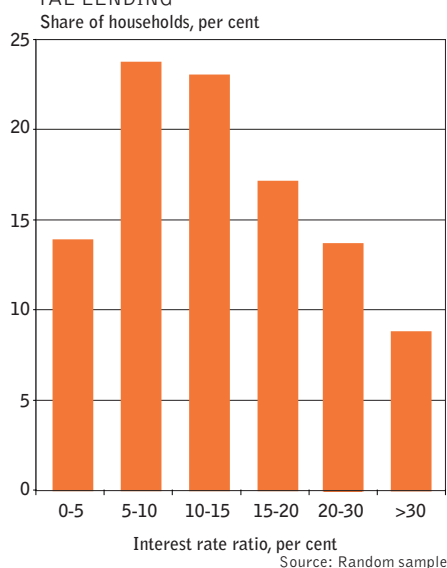


Diagram 9. INTEREST RATE RATIO GIVEN THE ACTUAL INTEREST RATE AND TOTAL LENDING



2.0 and 2.6 percentage points higher than the interest rate for a bottom loan. In the random sample, the average difference between the interest rate on a bottom loan and an unsecured loan is somewhat lower, 1.8 percentage points (Table 3).

TABLE 3. Average interest rate levels (random sample) ⁹

	Volume-weighted average, %
Average interest rate, bottom loan	3,6
Average interest rate, top loan	4,6
Average interest rate, unsecured loan	5,4

Diagram 7 shows the average size of the mortgage per income group in the random sample of new mortgages. The largest loans are held by households with high disposable income and, subsequently, good repayment capacity.¹⁰

DEBT RATIO AND INTEREST RATE RATIO

The debt ratio for households which were granted a new mortgage has decreased since the introduction of the mortgage cap. The debt ratio is calculated from the random sample of new mortgages and is defined as the household's total lending in relation to annual income. Around 30 per cent of the households in the random sample have loans that are more than five times the size of their disposable income (Diagram 8). The corresponding data from the random sample of new mortgages from 2009 was 50 per cent, which means that the share of households that were granted a new mortgage and have a high debt ratio has decreased.

The youngest borrowers in the random sample of new mortgages have the highest loan-to-value ratios (Diagram 5) as well as the largest debt in relation to their disposable income. Borrowers in the age group 26-35 have the highest debt ratios.

The interest rate ratio measures the portion of household disposable income that goes to interest rate expenses (Diagram 9).¹¹ The random sample of new mortgages from 2009 showed that more than 80 per cent of the households which were granted a new mortgage used less than one-tenth of their disposable income for interest rate expenses. In the 2011 survey, only 40 per cent of the households fall into this category. The fact that the interest rate ratios increased over the past two years is not surprising, since the interest rate levels on mortgages in 2009 were at historically low levels.

ACTUAL REPAYMENT PERIODS AND UNAMORTISED LOANS

At the aggregate level, the share of new mortgages¹² that are unamortised has increased by six percentage points since 2009. The average

⁹ Applies to loans paid out during the period 26 September–6 October 2011.

¹⁰ The number of borrowers per household in the random sample varies.

¹¹ The interest rate expenses are calculated using the household's total loans (mortgages, unsecured loans, educational loans and other loans) and the average actual interest rate determined on the day the loan was granted. This interest rate should be a reasonable approximation, even if the interest rates on educational loans are most likely lower than mortgage rates and the interest rates on unsecured loans are higher.

¹² This includes both new loans and refinanced loans as well as bottom loans, top loans and unsecured loans.

Diagram 10. LOAN-TO-VALUE RATIO FOR VARIOUS REPAYMENT PERIODS

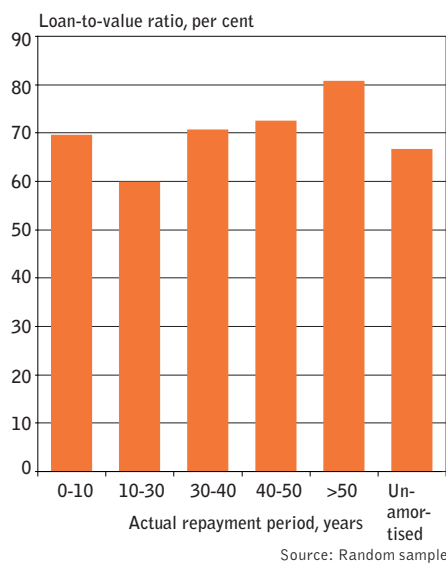


Diagram 11. ACTUAL REPAYMENT PERIODS

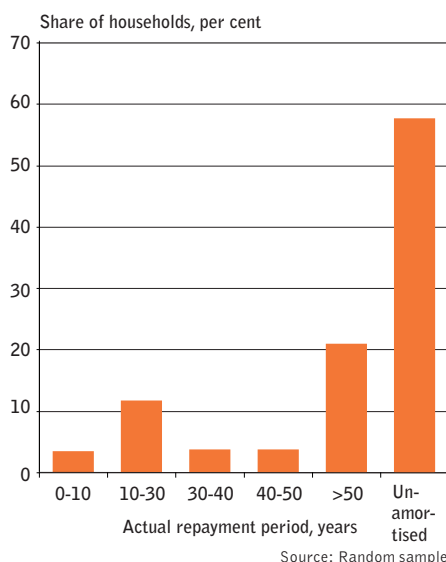
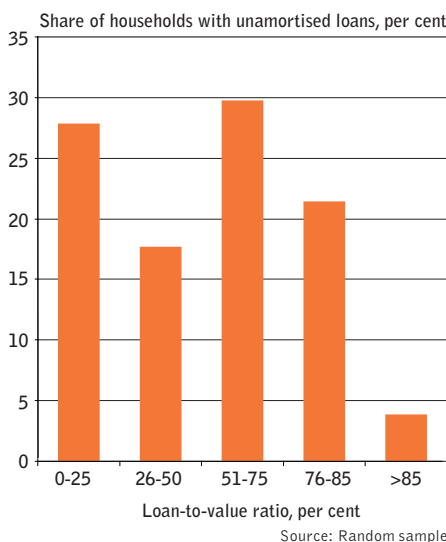


Diagram 12. LOAN-TO-VALUE RATIO FOR HOUSEHOLDS WITH UNAMORTISED LOANS



actual repayment period for new mortgages during the same period increased by around four years to almost 70 years (Table 4). One explanation for this could be the change in the level of the interest rate. During periods of low interest rates it is possible for households to amortise more, and in 2009 mortgage rates were at a record low. In contrast to what is demonstrated by the reported data, half of the banks state in the qualitative portion of the survey that they are witnessing a greater willingness to amortise. Half of the banks also state that they have now taken a more restrictive approach to long repayment periods than they did one year ago.

TABLE 4. Actual repayment periods and unamortised loans, new loans (aggregate data)

	Actual repayment period (years)			Unamortised loans (percent)		
	Single-family houses	Shares in tenant-owner associations	Total	Single-family houses	Shares in tenant-owner associations	Total
2009	55	80	66	59	65	59
2010	57	83	68	62	70	63
2011	61	83	70	65	70	65

The banks' credit instructions differ somewhat with regard to their amortisation requirements. The amortisation requirement on bottom loans ranges between 40 and 60 years, depending on the bank. Some banks require that the portion of the bottom loan that exceeds a 75 per cent loan-to-value ratio must be repaid over a 10-year period. The majority of the banks that offer top loans require that these loans be repaid over a 10-year period. However, two banks allow their top loans to be repaid over a period of 30 years. Most banks require that unsecured loans be repaid over a 10-year period. One bank requires that unsecured loans be repaid over a 5-year period, while another allows 15 years for these loans. All of the banks allow their bottom loans to be unamortised, but none of the banks allow the top or unsecured loans to be unamortised. The average actual repayment period for households in the random sample of new mortgages that amortise their top and unsecured loans is 11 and 12 years, respectively.¹³

Of the households in the random sample which were granted a new mortgage with a loan-to-value ratio that exceeds 85 per cent, 98 per cent amortise their mortgage. This means that only 2 per cent of the households have both a really high loan-to-value ratio and unamortised loans (bottom, top or unsecured loans). This indicates that the mortgage cap has resulted in stricter requirements on amortisation of really high loan-to-value ratios.

All of the banks in the survey say that they apply the Swedish Bankers' Association's recommendation that borrowers with a loan-to-value ratio above 75 per cent should amortise their loans. However, support for this statement cannot be found in the data from the random sample. One-fourth of the households which have a loan-to-value ratio of greater than 75 per cent do not amortise any of their housing-related loans (Diagram 12).

¹³ Households with unamortised loans or down payment loans, i.e. loans that are amortised on a single occasion (normally on the day the loan is granted), are excluded.

Banks' borrower assessments

To assess the repayment capacity of borrowers, banks primarily use information from the loan application. To determine if a household has a sufficient margin, all banks calculate a household's discretionary income, which is a measure of the household's surplus after paying for accommodation and basic necessities.

The lending process begins with the customer submitting a loan application that includes information about, for example, income. This information provides the basis for the banks' assessment of a customer's repayment capacity. This information is reconciled with a credit report from a credit information company.

CALCULATION OF DISCRETIONARY INCOME

To determine if a household can fulfil the commitment of the mortgage that it applied for, all of the banks in the survey calculate the household's discretionary income. This is a measure of how much of a household's disposable income is left after paying for accommodation and basic necessities. Costs for basic necessities and operation/maintenance of the home are determined on a standardised basis (Table 5). Loans in addition to the mortgage are also taken into account.

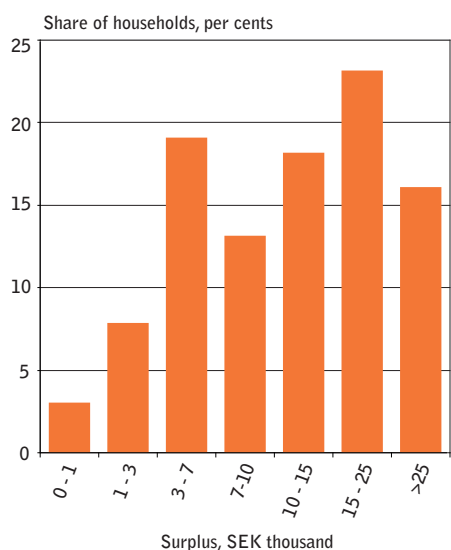
The banks calculate interest rate expenses using a discretionary income interest rate and a specific amortisation schedule. This interest rate significantly exceeds the current interest rate level. The banks' average interest rate for this purpose in this year's random sample was 7.7 per cent¹⁴, ranging per bank from 6.6 to 8.7 per cent. Interest rate expenses were calculated for a bottom loan using an amortisation schedule ranging from 40–75 years and a top loan using an amortisation schedule ranging from 10–30 years.

IF THE BORROWER EXPERIENCES REPAYMENT PROBLEMS

The majority of the banks allow customers with temporary payment problems to defer payments or make smaller amortisation payments for a certain period of time. Several banks offer similar solutions for interest rate payments. In a worst-case scenario, if the borrower is extremely late with payments, the bank can terminate the loan. The basis for the termination can also be that the value of the property pledged as collateral for the mortgage has deteriorated significantly.¹⁵ As a final option, the bank can decide to sell the property at an execution sale. However, it is very rare for a bank to terminate a mortgage.

Half of the banks in the survey offer their customers credit insurance in conjunction with their mortgage. This insurance entails that the bank, in the event of death, will settle, either in full or in part, the deceased's portion of the mortgage. Two banks also offer help with amortisation and interest rate payments for a limited period of time and up to a certain amount if the customer becomes unemployed or is on long-term sick leave. Only 1.5 per cent are covered by this type of credit insurance, but more than 21 per cent of the total mortgage stock is covered by some form of credit insurance.

Diagram 13. HOUSEHOLD SURPLUS
IN CALCULATIONS OF DISCRETIONARY
INCOME



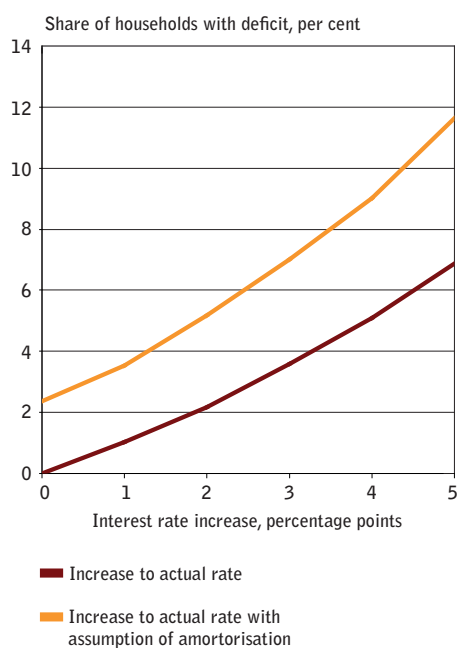
14 The banks' average discretionary income interest rate was used to calculate the households' surplus in Diagram 13.

15 Section 33, point 4 of the Consumer Credit Act (2010:1846).

Stress tests

The stress tests conducted on the survey's random sample of new loans show that Swedish households in general have a strong repayment capacity and can withstand increases in the interest rate and unemployment and falls in house prices. However, some households will still be negatively affected.

Diagram 14. HOUSEHOLDS WITH A DEFICIT AT VARIOUS INTEREST RATE INCREASES



Source: Random sample

INTEREST RATE SENSITIVITY

The interest rate sensitivity of households which were granted new mortgages was tested by calculating the share of households in the random sample that experienced a deficit in their discretionary income following various increases in the actual interest rate stated in the customer's mortgage agreement (Diagram 14).¹⁶ The banks' average standardised costs were used to determine the discretionary income of the households which were granted new mortgages (Table 5). These costs were also compared to and supplemented by the standardised costs used by the Swedish Consumer Agency. The interest rate expenses in the stress test were calculated using households' total lending, not only the new mortgage.¹⁷ An increase of as much as five percentage points to the borrowers' actual interest rates only results in a deficit in seven per cent of the households that were granted a new mortgage. The diagram also shows the share of households that would experience a deficit if an assumption is made that all households which were granted a new mortgage that have a loan-to-value ratio of 60 per cent or more would be forced to amortise in accordance with a 50-year amortisation schedule. Given such an amortisation assumption, an increase in the interest rate by five percentage points results in a deficit in just under twelve per cent of the households.

TABLE 5. Standardised costs when calculating household discretionary income

Home operation and maintenance	
Single-family houses	3 700
Shares in tenant-owner associations	3 500
Holiday homes	1 300
Cost of living	
1 adult	7 100
2 adults	12 800
2 adults and 2 children	18 500
Extra child	2 850

¹⁶ An assumption was made in all of the stress tests that all borrowers have a sufficient repayment capacity to repay the loan at the actual interest rate determined on the day the loan was granted. Households with a deficit at a 0 per cent increase to the interest rate have therefore been excluded. One potential explanation for why such an assumption is needed could be errors in the data.

¹⁷ If the interest rate on a mortgage rises, it is reasonable to assume that the interest rates of other loans will also rise.

Diagram 15. HOUSEHOLDS WITH A DEFICIT WITH AND WITHOUT UNEMPLOYMENT INSURANCE

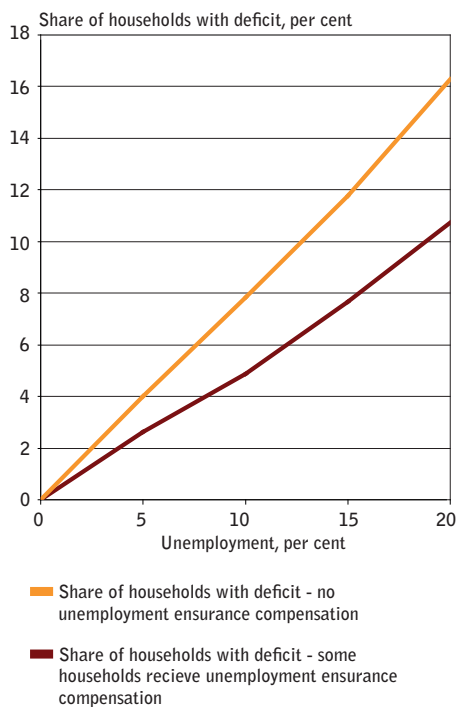
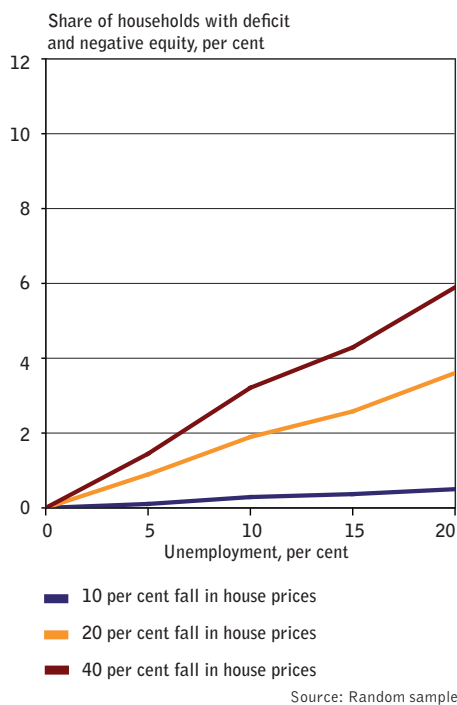


Diagram 16 SIMULATION OF HIGHER UNEMPLOYMENT AND LOWER HOUSE PRICES



HOUSE PRICES AND UNEMPLOYMENT

A stress test of house prices shows that a 15 per cent fall in house prices results in one-tenth of the households in the random sample of new mortgages experiencing negative equity. If house prices were to fall 20 per cent, one-third of the households in the random sample would find that their loan-to-value ratio exceeds 100 per cent. This is a relatively large share of the households, but just because a household is experiencing negative equity does not mean that the loss needs to be realised.

The sensitivity of households which were granted new mortgages to the loss of income was tested by simulating increased unemployment in the random sample (Diagram 15). The test simulates increased unemployment among the households in the random sample of new mortgages, regardless of unemployment levels in society in general. The stress test assumed that all new mortgage holders under the age of 67 can become unemployed.¹⁸ As in the interest rate stress test, the results are presented as the share of households that experience a deficit in their discretionary income. When unemployment is ten per cent, and given the assumption that an unemployed individual carries unemployment insurance and receives compensation, five per cent of the households in the random sample of new mortgages experience a deficit. Given an assumption that none of the unemployed individuals carry unemployment insurance, eight per cent of the households in the random sample of new mortgages experience a deficit at the same level of unemployment.

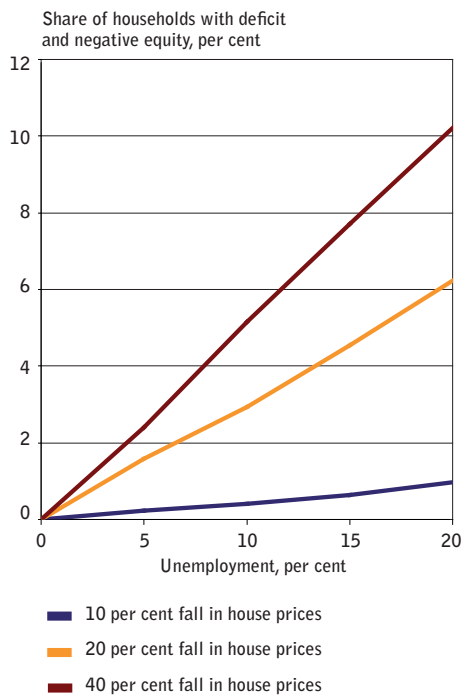
The stress test of unemployment has been taken one step further by combining it with falling house prices (Diagram 16). The results show the share of households that experience negative equity at the same time as their discretionary income falls below zero.

If house prices fall ten per cent and unemployment reaches 20 per cent, only one-half per cent of the households which were granted new mortgages experience negative equity and discretionary income of less than zero at the same time. If house prices fall 40 per cent and unemployment reaches 20 per cent, this share increases, but the share of households which were granted a new mortgage that simultaneously experience negative equity and discretionary income of less than zero is still less than six per cent.

When the assumption that none of the unemployed individuals carry unemployment insurance is added to the stress test with a fall in house prices and increased unemployment, the share of households with both negative equity and negative discretionary income increases (Diagram 17). However, even under this conservative scenario, only a relatively small share of the households in the random sample of new mortgages experiences problems. One reason for why the share of households with

¹⁸ Of the individuals that may become unemployed, 84 per cent are assumed to carry unemployment insurance (source: Röstert om facket och jobbet, LO). The rest are assumed to have an income of 0 if unemployed. An individual who carries unemployment insurance and has been unemployed for less than 201 days receives 80 per cent of his/her income and then 70 per cent for up to 300 days. Given that an individual is unemployed, we assume that there is a probability of 0.32 that this person has been unemployed for more than 200 days. There is a probability of 0.005 that the individual has been unemployed for more than 300 days, and thus receives no income. If an individual's gross income exceeds SEK 23,015, the maximum compensation per day is SEK 680 for no more than 22 days per month. Income tax is set at 30 per cent. We assume a household's income to be evenly distributed among all borrowers in the household.

Diagram 17. SIMULATION OF HIGHER UNEMPLOYMENT AND LOWER HOUSE PRICES WITH THE ASSUMPTION THAT NO ONE RECEIVES UNEMPLOYMENT INSURANCE COMPENSATION



Source: Random sample

negative discretionary income is so small, even in the presence of very high unemployment, is that most households in Sweden have two incomes.

The stress tests show that the households which were granted a new mortgage can currently withstand increases in the interest rate and have a satisfactory repayment capacity. Even when the interest rate is raised significantly, the households in the random sample of new mortgages in general demonstrate a strong repayment capacity. Only a small portion of the households will experience considerable losses if unemployment forces them to sell their homes. The stress tests also show that the households which were granted new mortgages can withstand a fall in house prices. Not even excessively extreme negative changes – to the interest rate, unemployment or house prices – would have an impact on a large share of the households. As a result, Swedish mortgages do not currently constitute a threat to financial stability. However, there will still be individual households that are affected.

Glossary

Actual repayment period The timeframe within which the customer must have repaid a loan. The actual repayment period for a bottom loan is often longer than for a top loan or unsecured loan. A borrower often has the option of not amortising a bottom loan. In the survey, the actual repayment period at the aggregate level shows how many years it will take to pay of the entire borrowed volume (bottom, top and, where applicable, unsecured loans) with the contracted amortisation amount. This means that unamortised loans do not contribute to the amortisation amount, but the size of the loan is included in the loan volume. This can be described with the following formula: Actual repayment period = Loan volume/annual amortisation amount

Bottom loan The portion of a mortgage that is collateralised by the best part of the home, normally 75-85 per cent of the market value of the home. This means that the probability is high that the bank will recover the loan amount even if the home must be sold at a value lower than the original market value. The risk of not recovering the money from a top loan, for example, is higher.

Credit instructions A document for internal use at a bank that establishes guidelines for the bank's lending practices regarding amounts, maturities, amortisation and collateral.

Debt ratio A measurement of indebtedness. It is defined as the household's total debt divided by the household's annual income.

Discretionary income interest rate A percentage used in a calculation of discretionary income to determine a household's interest rate expenses. This interest rate is higher than the current interest rate to test a household's ability to withstand increases in the interest rate.

Disposable income A household's income after tax but before paying for all lending expenses, accommodation expenses and expenses for basic necessities. The banks' definitions of household income differ slightly since several of the banks only include income from employment or business and tax-free income (such as child benefits) while others also include capital income.

Discretionary income calculation The calculation and analysis that is usually conducted by the bank when a borrower applies for a loan. It is a measurement of how much of a household's disposable income is left after paying for accommodation and basic necessities.

Interest rate ratio A measurement of how much of a household's income is spent on interest rate expenses. It is defined as the household's interest rate expenses divided by the household's disposable income.

Loan-to-value ratio A percentage that describes the portion of the market value of a home that is leveraged. If the market value of the home decreases, the loan-to-value ratio increases, assuming the loan is held constant. In the survey, the calculation of the loan-to-value ratio differs slightly between the random sample and the aggregate data. The loan-to-value ratio of the aggregate data is calculated as the loans *collateralised by homes* (bottom loan and top loan). The random sample also includes any *unsecured loans that are related to financing a home*. However, the difference between the calculations is marginal since unsecured loans represent such a small portion of new mortgages.

Mortgage stock The total volume of outstanding mortgages.

Refinanced loan A mortgage with a fixed interest rate (longer than three months) for which the interest rate terms, and potentially other terms, were

renegotiated at the end of the fixed interest period.

Standardised costs Estimated average amounts for various living expenses that the bank uses in its discretionary income calculation.

Top loan The portion of the mortgage that exceeds the limit for the bottom loan and therefore is collateralised by a weaker portion of the home. This means that the risk that the bank will not recover the top loan from a sale of the home after a fall in prices is higher than for the bottom loan. Banks therefore charge a higher interest rate for the top loan.

Total lending Mortgage, unsecured loans for housing purposes, other unsecured loans, educational loans and other loans.

Unsecured loans A loan that is granted without any collateral or security. The banks often charge a higher interest rate for unsecured loans than collateralised loans such as top and bottom loans. In this survey, unsecured loans only include those loans issued at the same time as a loan that is collateralised by a home or in any other way can be related to the financing of a home.



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