Group Assignment

Mortgage Markets

MORTGAGE MARKETS

Mortgages are securities used to fund real estate acquisitions; these are originated by various finance institutions, such as cost savings institutions and home loan companies. A second mortgage market accommodates originators of home loans that desire to market their home loans prior to maturity.

The mortgage market segments provide individuals or businesses that require long-term funds to get real estate. In addition they serve finance institutions that desire to serve as collectors by financing long-term cash for real estate purchases.

A mortgage is a kind of debt intended to funding investment in real property. Your debt is anchored by the house, so if the house owner will not meet the repayment commitments, the creditor can seize the house. Finance institutions such as cost savings institutions and mortgage loan companies provide as intermediaries by originating home loans. They consider home loan applications and examine the creditworthiness of the candidates.

Example of Mortgage Market

For a home loan of $200,000 with a fixed yearly interest rate of 6.5% for 30 years, the principal is P= 200000, the monthly interest rate is r= (6.5/12)/100, the number of monthly payments is N= 30*12= 360, the fixed monthly payment equals $1,264.14. This formula is provided using the financial function PMT in a spreadsheet such as Excel.

In the example, the monthly payment is obtained by entering either of these formulas:

= -PMT (6.5 / 100 / 12, 30 * 12, 200000)

= ((6.5 / 100 / 12) * 200000) / (1 - ((1 + (6.5 / 100 / 12)) ^ (-30 * 12)))

= 1264.14

Topic 1

Criteria Used to Measure Creditworthiness

When finance institutions consider mortgage applications, they review information that displays the possible borrower's ability to settle the loan. Listed below are three important conditions that are being used to evaluate a borrower's repayment potential:

LEVEL OF EQUITY INVESTED BY THE BORROWER

The deposit represents the collateral spent by the customer. The lower the amount of equity invested, the bigger the likelihood that the customer will default. One proxy because of this factor is the loan to value proportion, which reveals the percentage of the property's value that is financed with credit debt. When credit seekers make relatively small down repayments, the loan-to-value percentage is higher and credit seekers have less to reduce when they stop making their mortgage repayments.

Example of Level of Equity Invested by the Borrower

The $3,000,000 loan is reduced for quick sale to $1,800,000. Self-Directed Ira Corp's Investors purchase the loan and now act as the new Lender. The face amount of the note stays the same at $3,000,000 but investors enjoy a higher return, 10% in this example. Assuming the loan is paid in full, after the property is stabilized in about three years, then the return will be much greater and likely to be more than 18% in this example. Later the borrower pays the full face of the note upon refinancing. The return to investors is about 13% annualized since the payoff is for the full $700,000, $200,000 more than Self Directed IRA Corp paid for the note.

BORROWER'S INCOME LEVEL

Borrowers who've a lower degree of income in accordance with the regular loan payments will default on the mortgages. Income decides the quantity of funds that credit seekers have available monthly to make mortgage repayments. Income levels change as time passes, however, so that it is problematic for mortgage brokers to assume whether potential debtors will continue steadily to earn their every month income over the life span of the home loan, especially given the high rate of recurrence of layoffs.

Example of Borrower's Income Level

if John has the same recurring monthly debt of $2,000 but his gross monthly income increases to $8,000, his DTI would be $2,000 ÷ $8,000 = 0.25, or 25%. Similarly, if John's income stays the same ($6,000) but he is able to pay off his car loan and reduce his monthly recurring debt payments to $1,500, his DTI would be $1,500 ÷ $6,000 = 0.25, or 25%. If John is able to both reduce his monthly debt payments to $1,500 and increase his gross monthly income to $8,000, his DTI would be $1,500 ÷ $8,000 = 0.1875, or 18.75%.

BORROWER'S CREDIT HISTORY

Other conditions being similar, consumers with a brief history of credit problems will default on the lending options than those without credit problems.

Example of Borrower's Credit History

A borrower with a low credit score that is under 600 is not eligible to receive a prime mortgage loan and receives a referral to a subprime lender for a subprime mortgage, which offers a higher interest rate; however, a borrower with a high score of 700 or above is creditworthy and is eligible to receive a lower interest rate, which results in paying less money in interest over the life of the loan.

Topic 2

Classifications of Mortgages

Mortgages can be classified in various ways, but two important classifications are prime versus subprime mortgages and insured versus conventional mortgages.

PRIME VERSUS SUBPRIME MORTGAGES

Mortgage loans can be labeled according to if the borrower meets the original lending standards. Consumers who obtain "perfect" mortgages gratify the traditional financing standards. "Subprime" home loans can be found to debtors who do not be eligible for prime lending options because they have got relatively low income or high existing arrears, or can make only a tiny down payment. Furthermore, they could demand higher fees and higher interest levels on the home loans to pay for the chance of default. Subprime home loan rates were commonly 1.5 to 2.5 ratio things above the rates of perfect mortgage loans. Although subprime mortgage loans enabled some individuals to get homes who in any other case cannot have, these mortgage loans were very venerable to default.

Example of Prime versus Subprime Mortgages

The strict lending criteria of prime loans weed out high-risk borrowers. Subprime loans generally have higher delinquency risk, which covers the risk of the borrower failing to make any payment for 30 days or longer. In 2007 when the overall national mortgage delinquency rate was 2.23 percent, for example, the subprime mortgage sector's delinquency rate was 20.52 percent. Even as the market goes up and down, the subprime mortgage delinquency rate remains significantly higher than the overall national rate, which tracks both prime and subprime loans. The national mortgage delinquency rate was 6.93 percent in 2010 and has dropped to 4.09 percent in 2013. In contrast, the subprime mortgage delinquency rate was 42.96 percent in 2010 and 36.56 percent in 2013.

INSURED VERSUS CONVENTIONAL MORTGAGES

Mortgage loans are also often categorized as federally covered with insurance or standard. Federally insured home loans promise loan repayment to the financing financial institution, in that way protecting it resistant to the opportunity of default by the debtor. An insurance cost of

0.5 percent of the loan amount is put on cover the price tag on insuring the mortgage loan. The guarantor can be either the Federal Housing Administration (FHA) or the Veterans Administration (VA). To be eligible for FHA and VA mortgage from a lender, credit seekers must meet various requirements given by those authorities' agencies. Furthermore, the maximum home loan amount is bound for legal reasons. The quantity of FHA lending options has constantly exceeded that of VA lending options since 1960. Both types of home loans have become ever more popular within the last 30 years.

Financial institutions provide conventional mortgages. While not federally insured, they could be privately insured so the lending finance institutions can still avoid contact with credit risk. The insurance high grade paid for such private insurance is going to be offered to the credit seekers. Lenders can pick to incur the credit risk themselves and steer clear of the insurance charge. Some members in the supplementary mortgage loan market purchase only those regular home loans that are privately covered by insurance.

Example of Insured versus Conventional Mortgages

In the 48 contiguous states, Washington D.C. and Puerto Rico, this is a mortgage with a loan amount of $417,000 or less. In Alaska, Guam, Hawaii and the U.S. Virgin Islands this is a mortgage with a loan amount of $6250,000 or less. Conforming mortgages typically require an LTV ratio of 97% or less and a borrower credit score of at least 680, although certain conventional and government-backed low / no down payment mortgage programs allow lower credit scores and LTV ratios of 100%. Interest rates on insured mortgages have typically been .125% to .375% higher than interest rates on conforming mortgages but rates for conforming and jumbo loans have also been the same for certain periods of time over the course of 2014 and 2015.

Topic 3

Types of Residential Mortgages

Various types of residential mortgages are available to homeowners, including the following:

- Fixed-rate mortgages
- Adjustable-rate mortgages
- Graduated-payment mortgages
- Growing-equity mortgages
- Second mortgages
- Shared-appreciation mortgages
- Balloon-payment mortgages

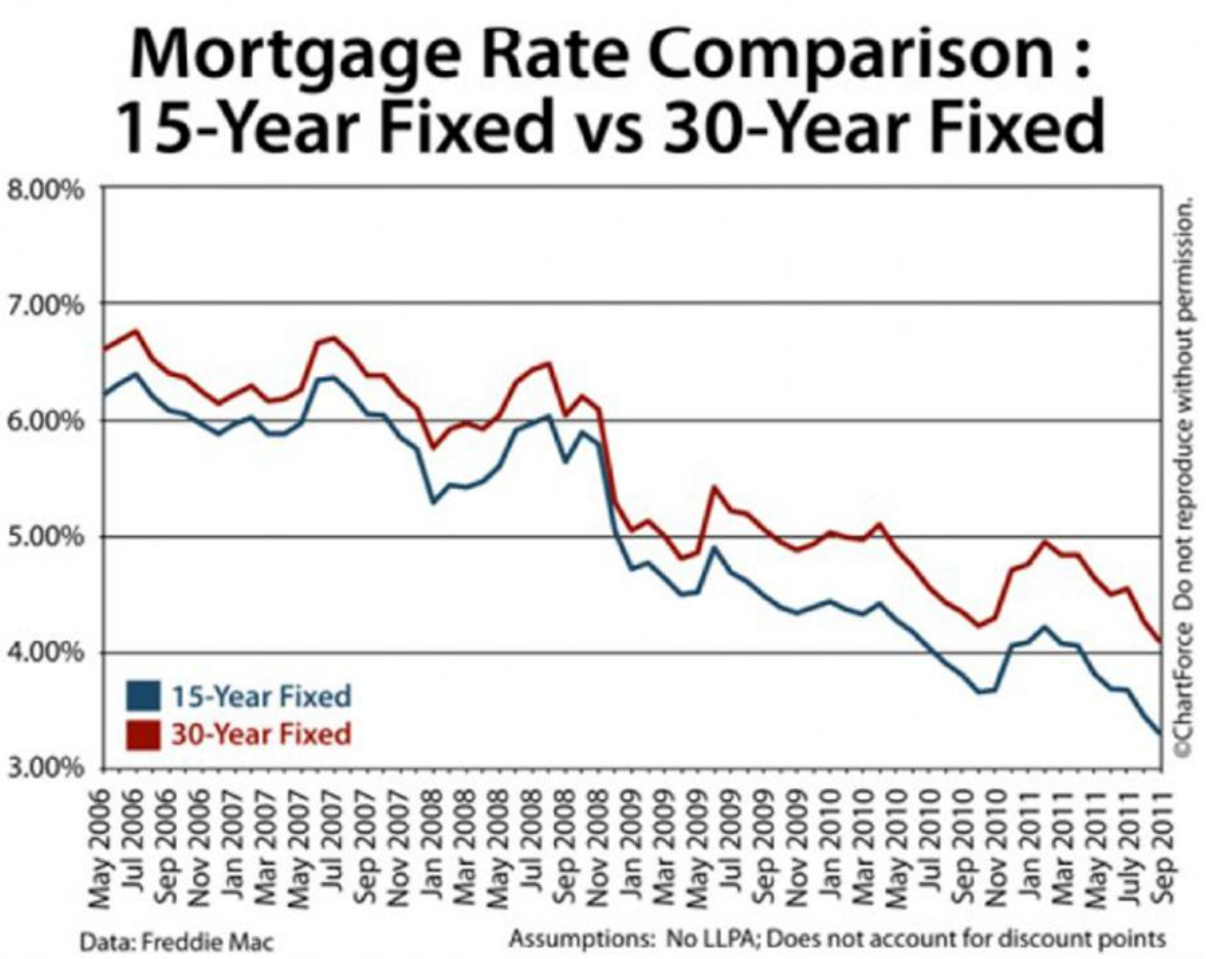
FIXED-RATE MORTGAGES

A fixed-rate mortgage hair in the borrower's interest over the life span of the mortgage. Thus the regular interest repayment received by the financing lender is constant, it doesn't matter how market interest levels change as time passes.

A lender that supports fixed-rate mortgage in its property portfolio is subjected to interest risk since it commonly uses money extracted from short-term customer debris to make long-term home loans. If interest levels increase as time passes, the financial institution's cost of obtaining money increase. The go back on its fixed-rate home loans will be unaffected, however, creating its profit percentage to decrease.

Credit seekers with fixed-rate home loans do not have problems with the consequences of rising interest levels; nevertheless they also neglect to reap the benefits of declining rates. Although they can try to refinance at the low prevailing market interest, they'll incur business deal costs such as shutting costs and an origination charge.

Amortizing Fixed-Rate Mortgage loans given the maturity and interest over a fixed-rate mortgage loan, an amortization timetable can be developed showing the monthly premiums divided into main and interest. Through the early on years of a home loan, almost all of the payment displays interest. As time passes, as a few of the main is paid, the interest percentage decreases.



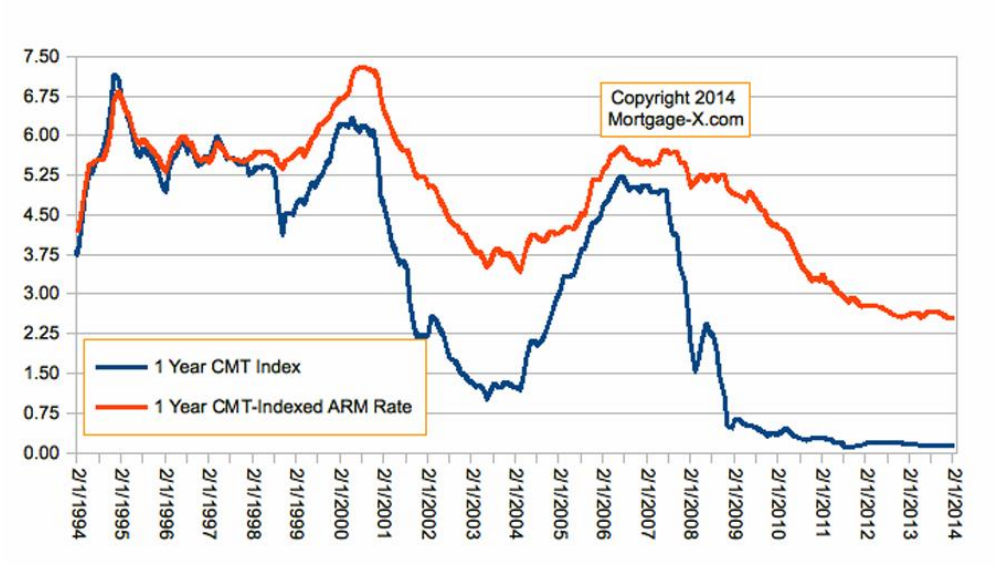
Example of Fixed-Rate Mortgages

If the loan was for $300,000 at 6% and the term was 300 months, then the payment in month 1 would be $1,000 of principal plus $1500 of interest for a total $2500. Each month the total payment would decline because interest would be calculated on a lower balance. This was the standard type of mortgage in New Zealand for many years, despite the obvious disadvantage of high payments in the early years.

ADJUSTABLE-RATE MORTGAGES

An adjustable-rate mortgage (ARM) allows the home loan interest rate to improve to advertise conditions. Its deal will specify an accurate formula because of this adjustment. The method and the rate of recurrence of adjustment may differ among mortgage deals. A standard ARM runs on the one-year modification with the interest tied to the common Treasury monthly bill rate over the prior season.

Some ARMs now contain a choice clause which allows mortgage holders to change to a set rate within the particular period; such as you to five years following the mortgage are originated. Observe that the set rate is normally greater than the adaptable rate at any moment when a mortgage loan is originated. Home potential buyers attempt to assess future interest movements at that time a home loan is originated. If indeed they expect that interest levels will remain relatively stable or decrease through the period they'll own the house, they'll choose an ARM. Conversely, if indeed they expect that interest levels will increase considerably over time, they'll choose a fixed-rate mortgage loan.



Example of Adjustable-Rate Mortgages

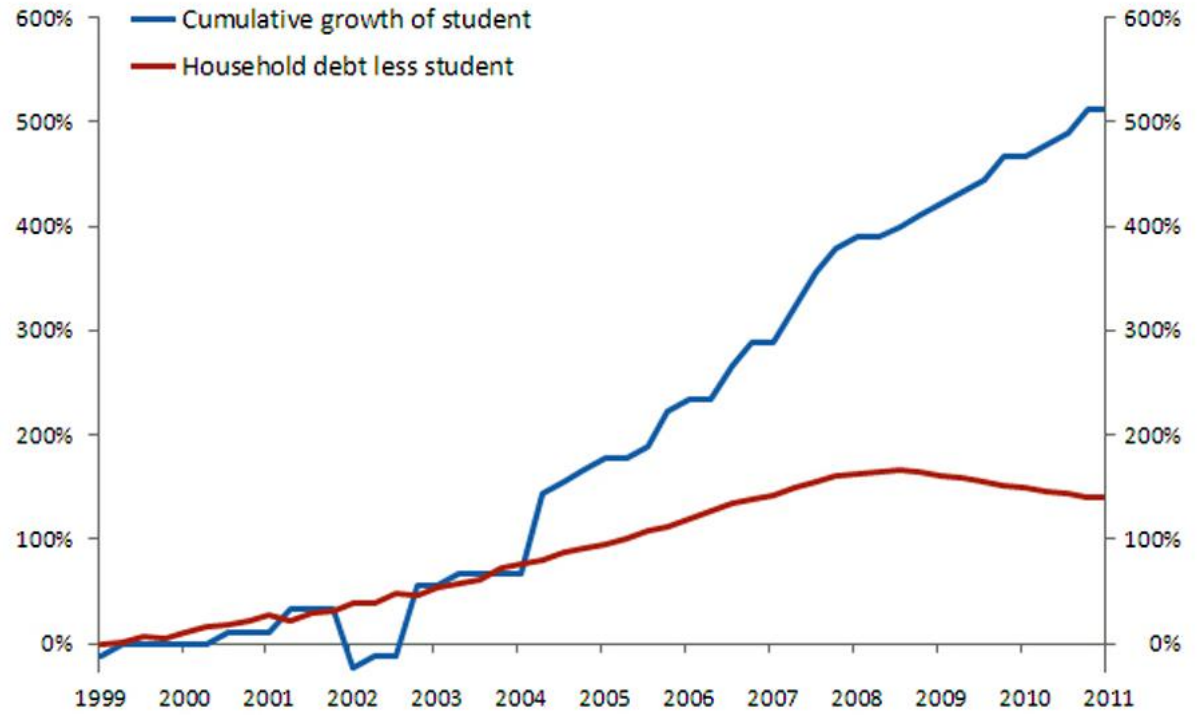
To understand how adjustable interest rates affect a borrower's payment, let's assume that a bank offers a $100,000 ARM to a potential borrower. The interest rate is the prime rate plus 5% with a maximum of 10%. If the prime rate is 3%, then the borrower's interest rate is 8% (5% + 3%), and the monthly payment would be $733.77. But if the prime rate increases to, say, 4%, then the loan's interest rate resets to 9% (5% + 4%), and the payment is now $804.63.

ARMs from the Financial Institution's Perspective

Because the interest rate of an ARM moves with prevailing interest rates, financial institutions can stabilize their profit margin. If their cost of funds rises, so does their return on mortgage loans. For this reason, ARMs have become very popular over time. Most ARMs specify a maximum allowable fluctuation in the mortgage rate per year and over the mortgage life, regardless of what happens to market interest rates. These caps are commonly 2 percent per year and 5 percent for the mortgage's lifetime. To the extent that market interest rates move outside these boundaries, the financial institution's profit margin on ARMs could be affected by interest rate fluctuations. Nevertheless, this interest rate risk is significantly less than that of fixed-rate mortgages.

GRADUATED-PAYMENT MORTGAGES

A graduated-payment mortgage (GPM) allows the borrower to make small payments initially on the mortgage; the payments increase on a graduated basis over the first 5 to 10 years and then level off. This type of mortgage is tailored for families who anticipate higher income as time passes. In a sense, they are delaying part of their mortgage payment.

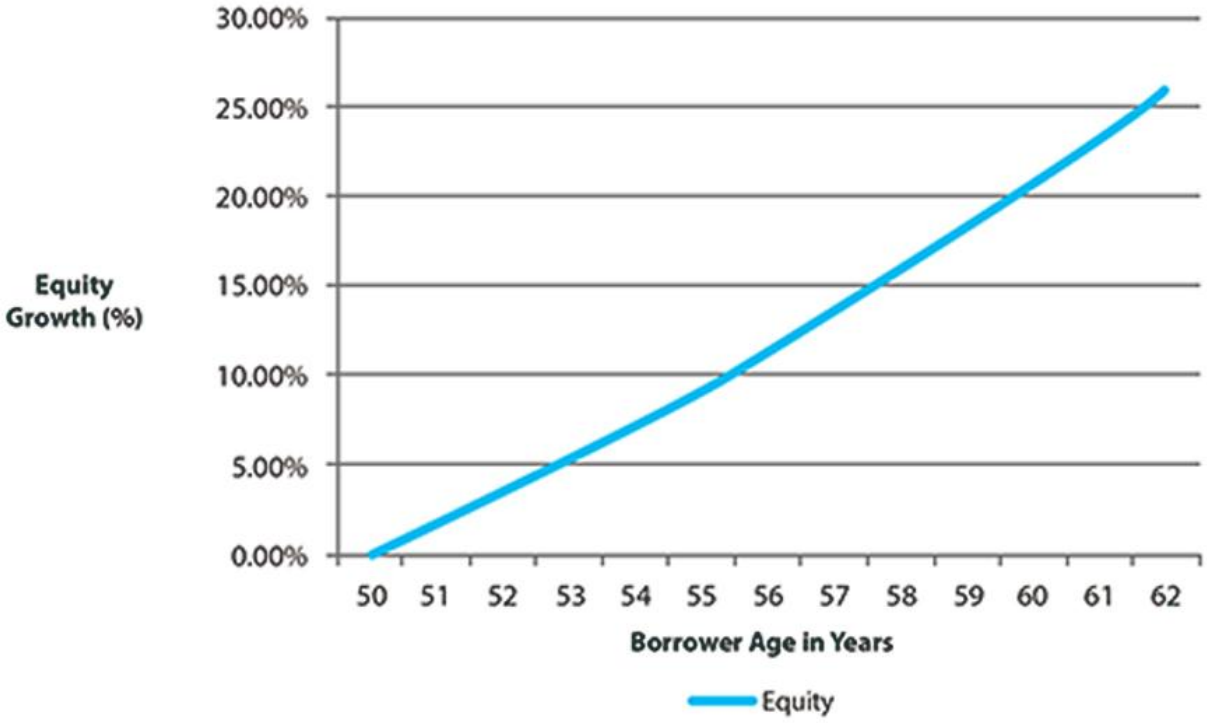


Example of Graduated-Payment Mortgages

The mortgage payment on a $200,000 FRM for 30 years at 6% is $1199. Stretched over 40 years, the payment would be $1100. But the initial payment on a 30-year GPM at 6.50%, on which the payment rises by 7.5% a year for 5 years, is only $941. The interest rate on the GPM is fixed, just as it is on a standard FRM.

GROWING-EQUITY MORTGAGES

A growing-equity mortgage is similar to a GPM in that the monthly payments are initially low and increase over time. Unlike the GPM, however, the payments never level off but continue to increase (typically by about 4 percent per year) throughout the life of the loan. With such an accelerated payment schedule, the entire mortgage may be paid off in 15 years or less.

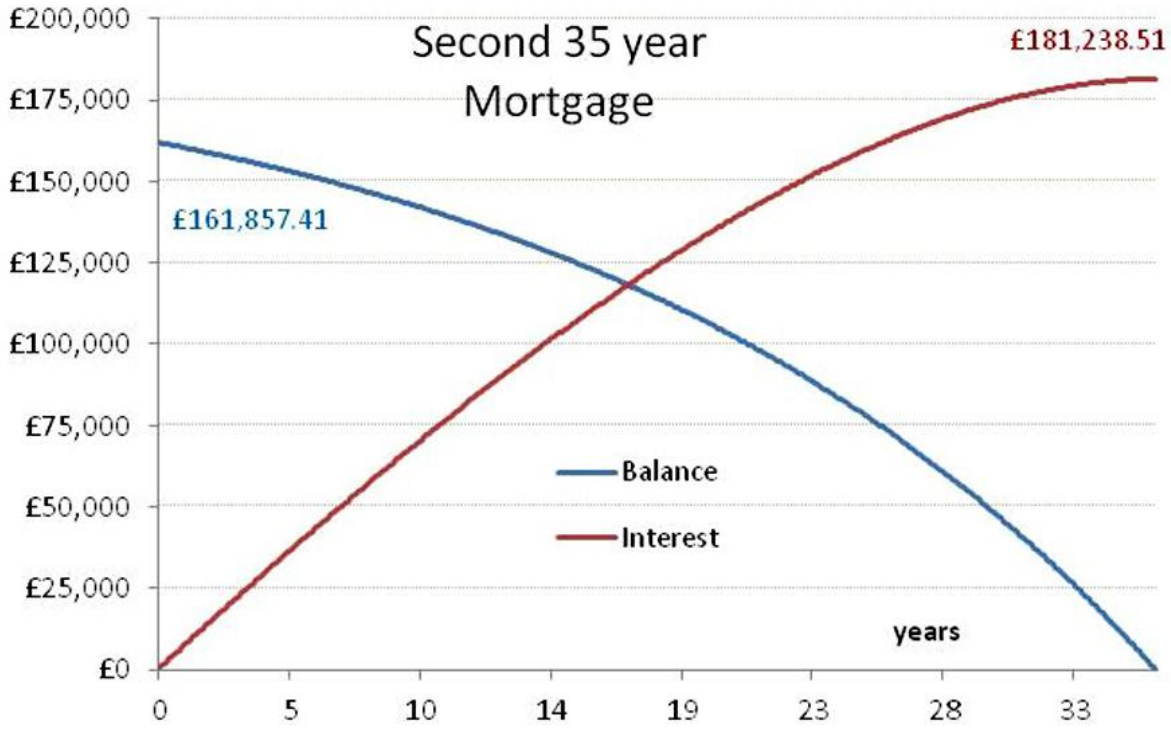


Example of Growing-Equity Mortgages

Long purchased her home with a growing-equity mortgage. Long's monthly payments will increase by 5% each year, with the increased amount applied to principal. Long will retire the loan in about half the time required to retire a comparable loan with fixed payments.

SECOND MORTGAGES

A second mortgage can be used in conjunction with the primary or first mortgage. Some financial institutions may limit the amount of the first mortgage based on the borrower's income. Other financial institutions may then offer a second mortgage with a maturity shorter than that of the first mortgage. In addition, the interest rate on the second mortgage is higher because its priority claim against the property (in the event of default) is behind that of the first mortgage. The higher interest rate reflects greater compensation as a result of the higher risk incurred by the provider of the second mortgage. Sellers of homes sometimes offer buyers a second mortgage. This practice is especially common when the old mortgage is assumable and the selling price of the home is much higher than the remaining balance on the first mortgage. By offering a second mortgage, the seller can make the house more affordable and therefore more marketable. The seller and the buyer negotiate specific interest rate and maturity terms.

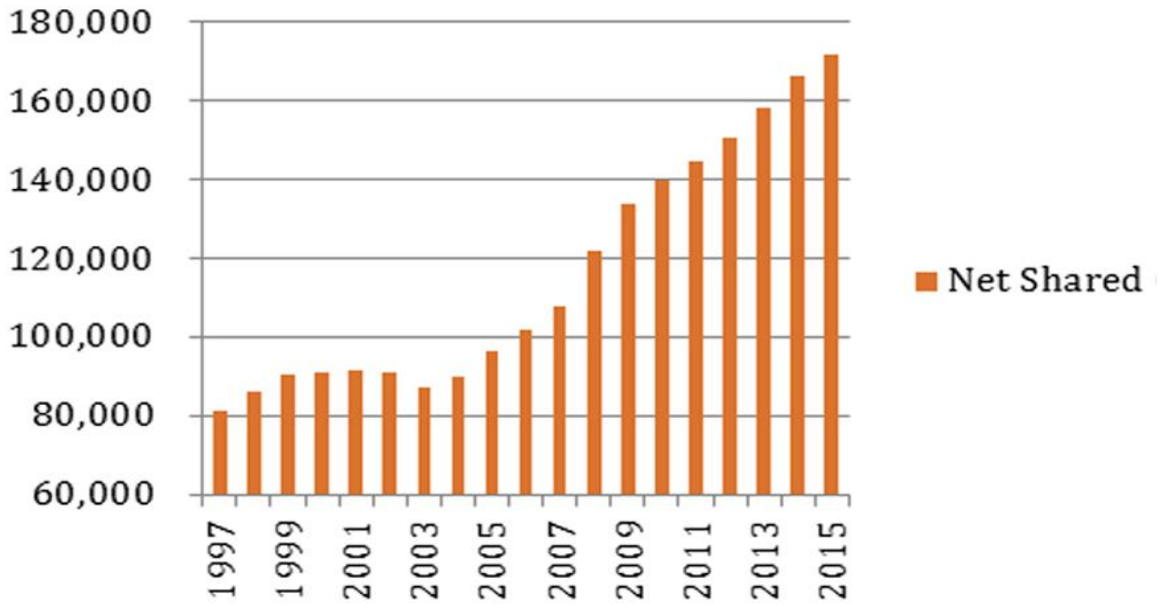


Example of Second Mortgages

One illustrates a second mortgage for net proceeds of $15,000. The monthly payment would be $139 for a two-year term. The annual interest rate during the term of the mortgage in this example is fixed at 6.95 percent-compounded monthly. The gross amount of the mortgage is $17,900 and includes all set up costs for the mortgage.

SHARED-APPRECIATION MORTGAGES

A shared-appreciation mortgage allows a home purchaser to obtain a mortgage at a below-market interest rate. In return, the lender providing the attractive loan rate will share in the price appreciation of the home. The precise percentage of appreciation allocated to the lender is negotiated at the origination of the mortgage.



Example of Shared-Appreciation Mortgages

A property valued at £100,000 in 1997 is now worth £400,000 (2007). The client took out a SAM of £25,000 (or 25% of the 1997 value). The contract stated that, upon sale or death, the banks could claim 75% of the difference in value plus the original loan (75% x £300,000 + £25,000 = £250,000). Therefore the bank will receive, upon sale, £250,000 (62.5% of the current value) and the client £150,000. The problem arises when the customer wants to sell up and move home. With only £150,000 to play with, even downgrading to a smaller property half the size of their current house would cost £200,000 and as such would be unaffordable.

BALLOON-PAYMENT MORTGAGES

A balloon-payment mortgage requires only interest payments for a three-to five-year period. At the end of this period, the borrower must pay the full amount of the principal (the balloon payment). Because no principal payments are made until maturity, the monthly payments are lower. Realistically, though, most borrowers have not saved enough funds to pay off the mortgage in three to five years, so the balloon payment in effect forces them to request a new mortgage. Therefore, they are subject to the risk that mortgage rates will be higher at the time they refinance the mortgage.

BALLOON LOAN CALCULATOR

Loan Amount	50,000.00	
Interest Rate (per Year)	12	%
Amortization Period (Month)	80	months
Payment Period (Month)	15	months
Payment Date	1-Jan-15	

Monthly Payment	910.94
Total Payment	57,483.09
Total Interest	7,483.09

AMORTIZATION SCHEDULE

Month	Payment Date	Balance	Principal	Interest	Payment
		50,000.00			
1	1-Jan-15	49,589.06	410.94	500.00	910.94
2	1-Feb-15	49,174.01	415.05	495.89	910.94
3	1-Mar-15	48,754.80	419.20	491.74	910.94
4	1-Apr-15	48,331.41	423.39	487.55	910.94
5	1-May-15	47,903.78	427.63	483.31	910.94
6	1-Jun-15	47,471.88	431.90	479.04	910.94
7	1-Jul-15	47,035.65	436.22	474.72	910.94
8	1-Aug-15	46,595.07	440.59	470.36	910.94
9	1-Sep-15	46,150.07	444.99	465.95	910.94
10	1-Oct-15	45,700.63	449.44	461.50	910.94
11	1-Nov-15	45,246.70	453.94	457.01	910.94
12	1-Dec-15	44,788.22	458.48	452.47	910.94
13	1-Jan-16	44,325.16	463.06	447.88	910.94
14	1-Feb-16	43,857.47	467.69	443.25	910.94
15	1-Mar-16	43,385.10	472.37	438.57	910.94
16	**1-Apr-16**	**-**	**43,385.10**	**433.85**	**43,818.95**

Example of Balloon-Payment Mortgages

If a buyer obtains a seven-year balloon mortgage to purchase a home, he has seven years of equal monthly payments at a fixed interest rate. This rate is often lower than what the buyer would otherwise be able to secure under a traditional mortgage loan. At the end of the seven years, the balloon payment of the remainder of the balance of the loan is due, and the borrower must either pay it in full, refinance with the same or a different lender, or sell the home.

Topic 4

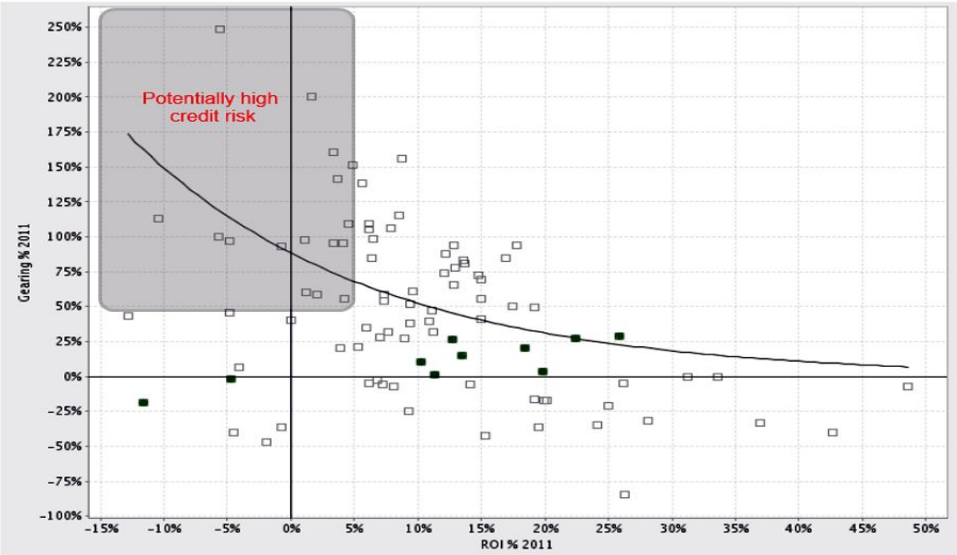
Risk from Investing in Mortgages

Given the uncertainty of the factors that influence mortgage prices, future mortgage prices are uncertain. The uncertainty that financial institutions face when investing in mortgages is due to credit risk, interest rate risk, and prepayment risk, as explained next.

CREDIT RISK

Credit (default) risk represents the size and likelihood of a loss that investors will experience if borrowers make late payments or even default. Whether investors sell their mortgages prior to maturity or hold them until maturity, they are subject to credit risk.

Consequently, investors must weigh the higher potential return from investing in mortgages against the exposure to risk. The probability that a borrower will default is influenced both by economic conditions and by the borrower characteristics that lenders consider when assessing a borrower's creditworthiness.



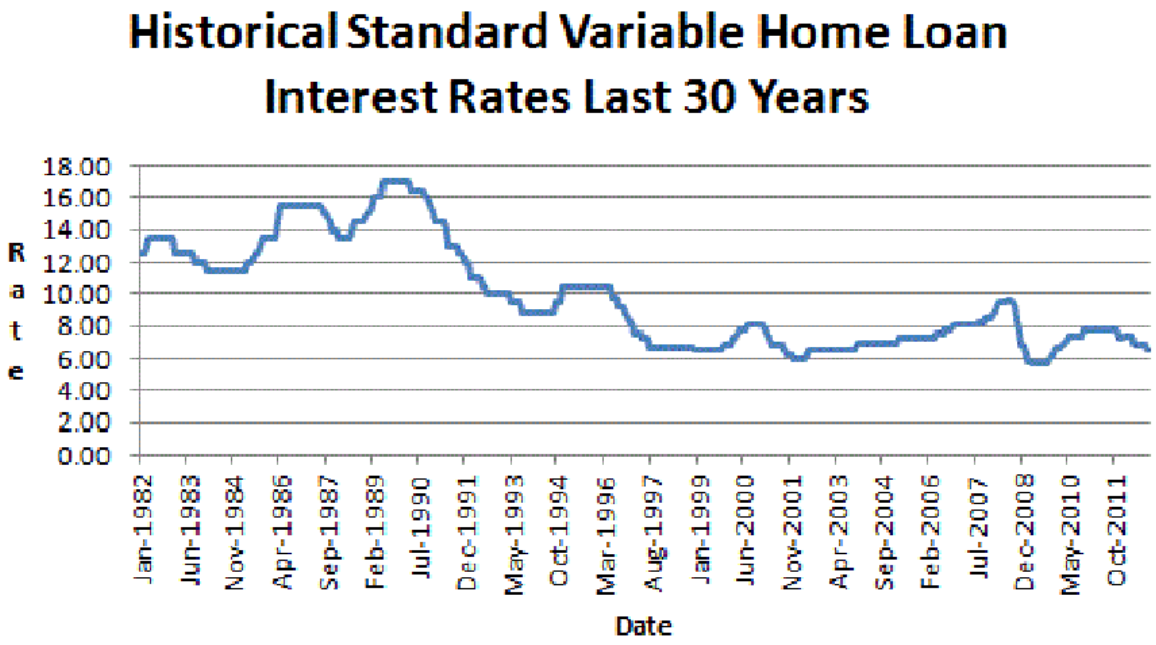
Example of Credit Risk

If there is a higher level of perceived credit risk, investors and lenders demand a higher rate of interest for their capital. If a mortgage applicant has a stellar credit rating and a steady income flow from a stable job, he is likely to be perceived as a low credit risk and will receive a low interest rate on his mortgage. In contrast, if an applicant has a lackluster credit history, he may

have to work with a subprime lender, a mortgage lender that offers loans with relatively high interest rates to high-risk borrowers.

INTEREST RATE

Risk Financial institutions that hold mortgages are subject to interest rate risk because the values of mortgages tend to decline in response to an increase in interest rates. Mortgages are long term but are commonly financed by some financial institutions with short-term deposits, so the investment in mortgages may create high exposure to interest rate risk. Such mortgages can also generate high returns when interest rates fall, but the potential gains are limited because borrowers tend to refinance when interest rates decline. When investors hold fixed-rate mortgages until maturity, they do not experience a loss due to a change in interest rates. However, holding fixed-rate mortgages to maturity can create a so-called opportunity cost of what the investors might have earned if they had invested in other securities.

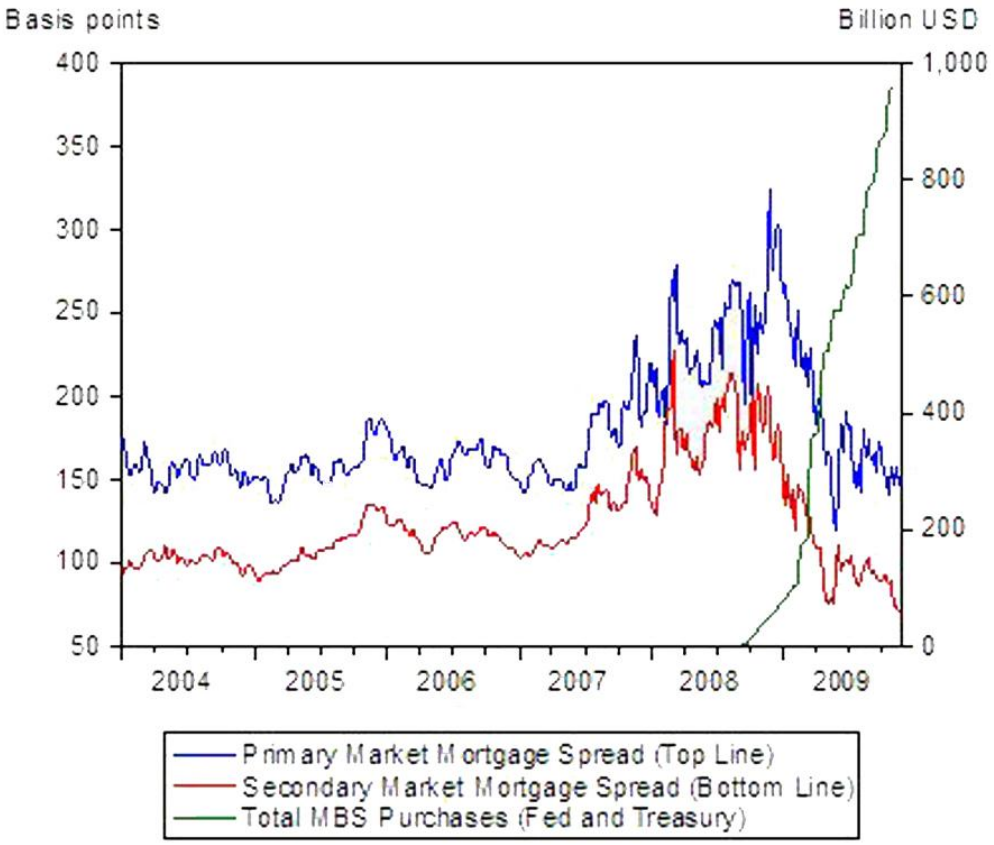


Example of Interest Rate

If interest rates rise consistently from the time fixed-rate mortgages are purchased until they mature investors who hold the mortgages to maturity gave up the potential higher return that they would have earned if they had simply invested in money market securities over the same period.

PREPAYMENT RISK

Prepayment risk is the risk that a borrower may prepay the mortgage in response to a decline in interest rates. This type of risk is distinguished from interest rate risk to emphasize that even if investors in mortgages do not need to liquidate the mortgages, they are still susceptible to the risk that the mortgages they hold will be paid off. In this case, the investor receives a payment to retire the mortgage and must then reinvest at the prevailing (lower) interest rates. Thus the interest rate on the new investment will be lower than the rate that would have been received on the retired mortgages. Because of prepayments, financial institutions that invest in fixed-rate mortgages may experience only limited benefits in periods when interest rates decline.



Example of Prepayment Risk

A homeowner who takes out a mortgage at 7% has a much stronger incentive to refinance when rates drop to 4 or 5% versus when rates stay at 7% or go higher. When and if the homeowner refinances, those who invested in his original mortgage on the secondary market do not receive the full term of interest payments for which they were hoping.

Math Question

A borrower obtain a fully amortized mortgage loan for TK.200000 TK. at 10 percent interest rate compounded annually for 5 years .what will be amount of installment? Prepare a loan repayment schedule for the loan term.

Annual Amortization Math Solutions

Given,

Loan amount = $ 200,000

Time, n = 5 years

Interest, i = 10%

Annual Payment =?

We know,

$$PV = A\left\{\frac{1-\frac{1}{(1+i)^n}}{i}\right\}$$

$$\Rightarrow 200000 = A\left\{\frac{1-\frac{1}{(1+0.10)^5}}{0.10}\right\}$$

$$\Rightarrow A = \frac{200000}{3.7907}$$

$$\Rightarrow A = 52760.703$$

$$\Rightarrow A = 52761$$

Month	Beginning Balance	Annual Interest	Annual Payment	Annual Amortization	Ending Balance
1	200000	20000	52761	32761	167239
2	167239	16723.9	52761	36037.1	131201.9
3	131201.90	13120.19	52761	36940.81	91561.09
4	91561.09	9156.109	52761	43604.891	47956.199
5	47956.199	4795.6199	52761	47965.3801	0.00

Installment is TK. 52,761.00

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