



What Are Mortgages?

- A long-term loan secured by real estate
- An amortized loan whereby a fixed payment pays both principal and interest each month



What Are Mortgages?

Mortgage Loan Borrowers

TABLE 12.1 Mortgage Loan Borrowing, 2006

Type of Property	Mortgage Loans Issued (\$ millions)	Proportion of Total (%)
One- to four-family dwelling	10,199	76.6
Multifamily dwelling	731	5.49
Commercial building	2,221	16.68
Farm	163	1.22

Source: *Federal Reserve Bulletin*, 2006, Table 1.54.



Characteristics of the Residential Mortgage

- Mortgages can be roughly classified along the following three dimensions:
 - Mortgage Interest Rates
 - Loan Terms
 - Mortgage Loan Amortization



Characteristics of the Residential Mortgage: Mortgage Interest Rates

- The stated rate on a mortgage loan is determined by three rates:
 - Market Rates: general rates on Treasury bonds
 - Term: longer-term mortgages have higher rates
 - Discount Points: a lower rates negotiated for cash upfront



Characteristics of the Residential Mortgage: Mortgage Interest Rates

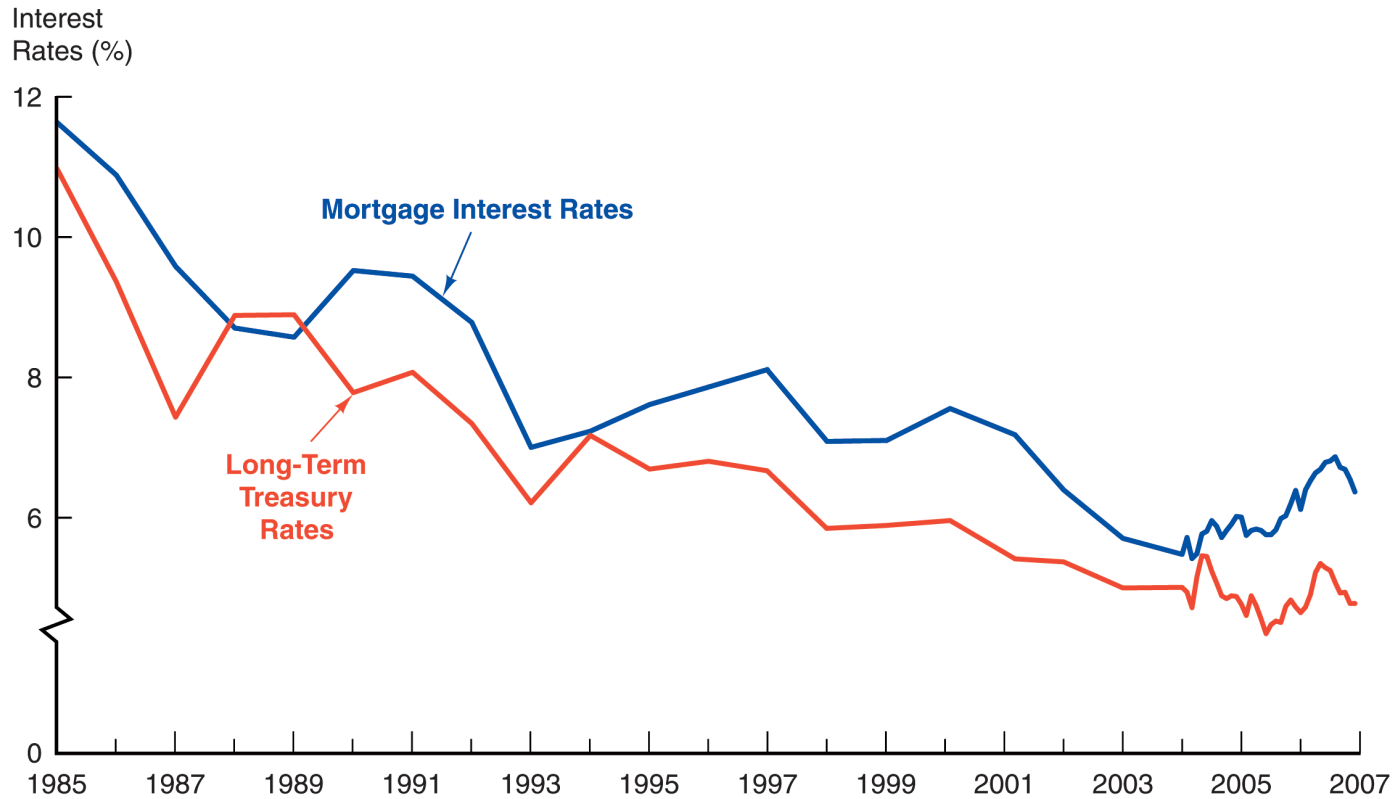


Figure 12.1 Mortgage Rates and Long-Term Treasury Interest Rates, 1985–2007

Source: *Federal Reserve Bulletin*, various issues, Table 1.53 Line 7 and Table 1.35 Line 23.



Characteristics of the Residential Mortgage: Loan Terms

Mortgage loan contracts contain many legal terms that need to be understood. Most protect the lender from financial loss.

- Collateral: usually the real estate being financed
- Down payment: a portion of the purchase price paid by the borrower



Characteristics of the Residential Mortgage: Loan Terms

Mortgage loan contracts contain many legal terms that need to be understood. Most protect the lender from financial loss.

- PMI: insurance against default by the borrower
- Qualifications: includes credit history, employment history, etc., to determine the borrowers ability to repay the mortgage as specified in the contact



Characteristics of the Residential Mortgage: Loan Terms

Lenders will also order a credit report from one of the credit reporting agencies.

- The score reported is called the FICO.
- The range is 300 to 850, with 660 to 720 being average.
- Payment history, debt, and even credit card applications can affect your credit score.



Characteristics of the Residential Mortgage: Loan Amortization

Mortgage loans are amortized loans. This means that a fixed, level payment will pay interest due plus a portion of the principal each month. It is designed so that the balance on the mortgage will be zero when the last payment is made.

The next table shows a typical amortization table for a 30-year mortgage at 8.5%.



Characteristics of the Residential Mortgage: Loan Amortization Schedule

TABLE 12.3 Amortization of a 30-Year, \$130,000 Loan at 8.5%

Payment Number	Beginning Balance of Loan	Monthly Payment	Amount Applied to Interest	Amount Applied to Principal	Ending Balance of Loan
1	130,000.00	999.59	920.83	78.75	129,921.24
24	128,040.25	999.59	906.95	92.66	127,947.62
60	124,256.74	999.59	880.15	119.43	124,137.31
120	115,365.63	999.59	817.17	182.41	115,183.22
180	101,786.23	999.59	720.99	278.60	101,507.63
240	81,046.41	999.59	574.08	425.51	80,620.90
360	991.77	999.59	7.82	991.77	0



Types of Mortgage Loans

- Insured vs. Conventional Mortgages: if the down payment is less than 20%, insurance is usually required
- Fixed-Rate Mortgages: the interest rate is fixed for the life of the mortgage
- Adjustable-Rate Mortgages: the interest rate can fluctuate within certain parameters



Types of Mortgage Loans

- Other Types
 - Graduated-Payment Mortgages (GPMs)
 - Growing Equity Mortgages (GEMs)
 - Shared-Appreciation Mortgages (SAMs)
 - Equity Participation Mortgages
 - Second Mortgages
 - Reverse Annuity Mortgages (RAMs)
- The following table lists additional characteristics on all the loans.



Types of Mortgage Loans

TABLE 12.5 Summary of Mortgage Types

Conventional mortgage	Loan is not guaranteed; usually requires private mortgage insurance; 5% to 20% down payment
Insured mortgage	Loan is guaranteed by FHA or VA; low or zero down payment
Adjustable-rate mortgage (ARM)	Interest rate is tied to some other security and is adjusted periodically; size of adjustment is subject to annual limits
Graduated-payment mortgage (GPM)	Initial low payment increases each year; loan amortizes in 30 years
Growing-equity mortgage (GEM)	Initial payment increases each year; loan amortizes in less than 30 years
Shared-appreciation mortgage (SAM)	In exchange for providing a low interest rate, the lender shares in any appreciation of the real estate
Equity participation mortgage	In exchange for paying a portion of the down payment or for supplementing the monthly payments, an outside investor shares in any appreciation of the real estate
Second mortgage	Loan is secured by a second lien against the real estate; often used for lines of credit or home improvement loans
Reverse annuity mortgage	Lender disburses a monthly payment to the borrower on an increasing-balance loan; loan comes due when the real estate is sold



Mortgage-Lending Institutions

- Originally, thrift institutions were the primary originator of mortgages in the U.S. and, therefore, the primary holder of mortgage loans.
- As the next figure illustrates, this is not the case anymore.



Mortgage-Lending Institutions

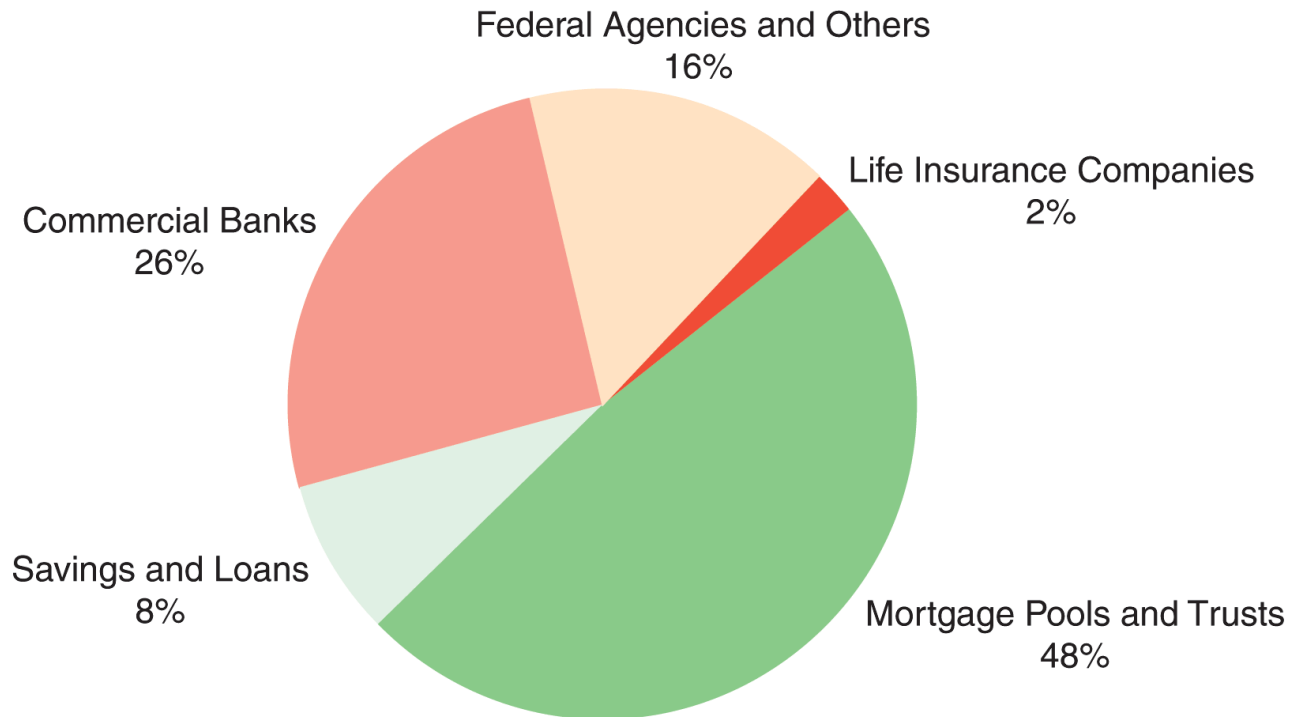


Figure 12.2 Share of the Mortgage Market Held by Major Mortgage-Lending Institutions

Source: *Federal Reserve Bulletin*, April 2007, Table 1.54.



Loan Servicing

- Most mortgages are immediately sold to another investor by the originator. This frees cash to originate another loan and generate additional fee income.
- Still, someone has to collect the monthly payments and keep records. This is known as loan servicing, and servicers usually keep a portion of the payments received to cover their costs.



Loan Servicing

In all, there are three distinct elements in mortgage loans:

- The originator packages the loan for an investor
- The investor holds the loan
- The servicing agent handles the paperwork



Secondary Mortgage Market

- The secondary mortgage market was originally established by the federal government after WWII when it created Fannie Mae to buy mortgages from thrifts.
- The market experienced tremendous growth in the early to mid-1980, and has continued to remain a strong market in the U.S. UNTIL 2007!!!



Securitization of Mortgages

The securitization of mortgages developed because of problems dealing with single mortgages: risk of either default or prepayment and servicing. Pools of mortgages eliminated part of this problem through diversification.



Securitization of Mortgages

The *mortgage-backed security* (MBS) was created. Pools including hundreds of mortgages were gathered, and the rights to the cash flows generated by the mortgages were sold as separate securities.

At first, simple pass-through securities were designed.



Securitization of Mortgages: The Mortgage Pass-Through

- *Definition:* A security that has the borrower's mortgage payments pass through the trustee before being disbursed to the investors
- This design did eliminate some risk, but investors still faced *prepayment risk*.



Securitization of Mortgages: CMOs

- *Definition:* A CMO is a structured MBS where investor pools have different rights to different sets of cash flows.
- This design structured the *prepayment risk*. Some classes had little, while other had a lot.



The Impact of Securitization on the Mortgage Market

- As the next figure shows, the value of mortgages held in pools is reaching \$6.4 trillion near the end of 2006.
- The securities compete for funds along with all other bond market participants.

Mortgage Pools

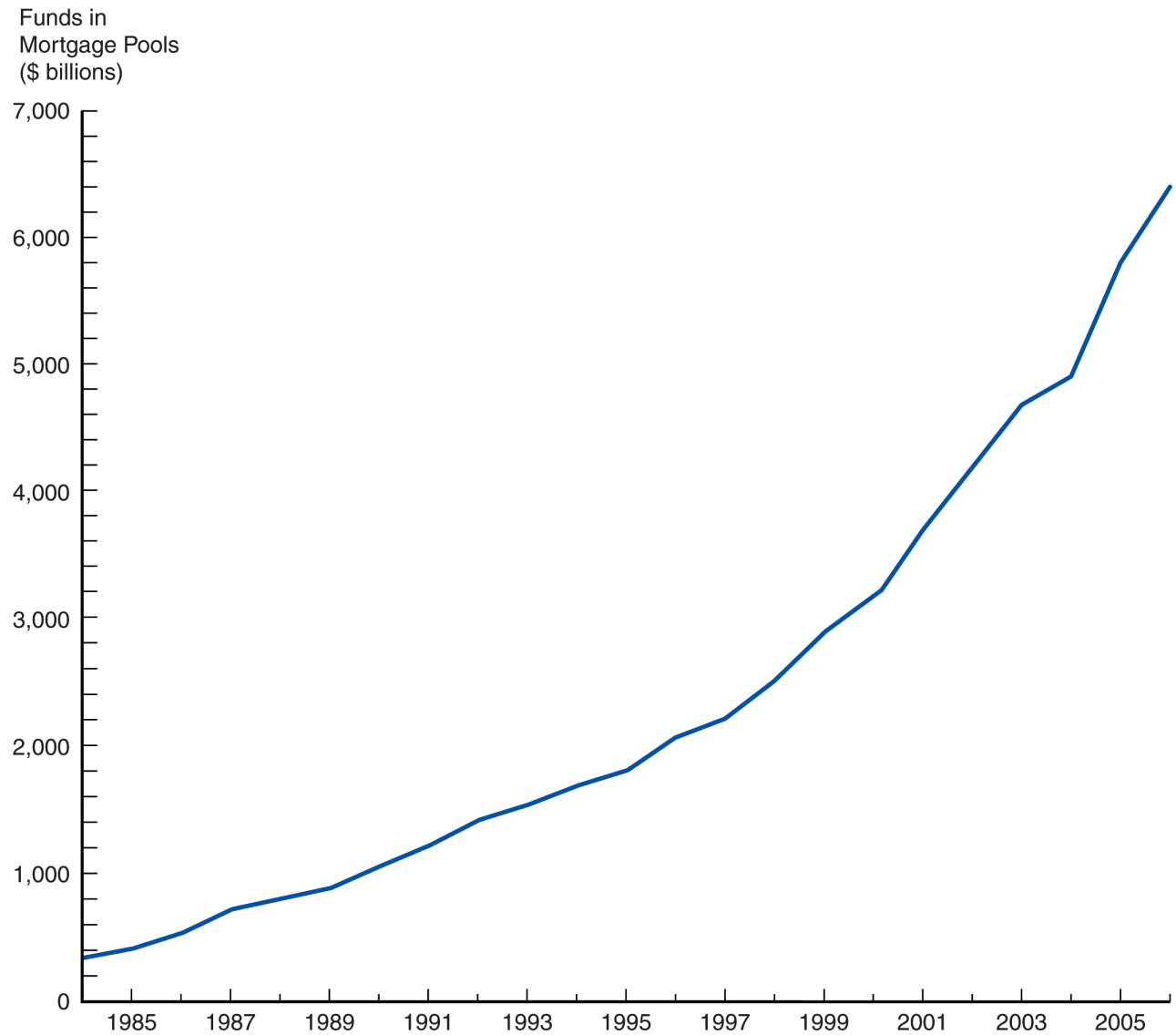


Figure 12.3 Value of Mortgage Principal Held in Mortgage Pools, 1984–2006

Source: *Federal Reserve Bulletin*, various issues, Table 1.54, Line 55.



The Impact of Securitization on the Mortgage Market

- **Benefits**

1. Reduces the problems caused by regional lending institution's sensitivity to local economic fluctuations
2. Borrowers have access to a national capital market
3. Investors have low-risk and long-term investments in mortgages without having to service the loan



The Impact of Securitization on the Mortgage Market

However, this is not without its costs. Because of securitization, mortgage rates have become more national in nature, and this has led to increased volatility in mortgage rates.



The Subprime Mortgage Market

- In 2000, only 2% of mortgages were subprime. This climbed to 17% by 2006.
- The average FICO score was 624 for subprime borrowers. Prime mortgage borrowers were 742.
- Mortgage products became more complicated, and income requirements for these mortgages became very lax.



The Subprime Mortgage Market

- Subprime mortgages have become quite controversial. Although predatory advertising and “bait and switch” tactics were all-too-common, home ownership did increase because of subprime lending.