



You Are Here

This chapter focuses on the market for housing and the financing of home purchases.

CHAPTER FORTY - FOUR

The Housing Bubble

Chapter Objectives

After reading this chapter you should be able to

- Understand the fundamental determinants of housing prices.
- Understand the components of a traditional mortgage, an interest-only mortgage, and a negative amortization mortgage.
- Understand how a bubble can be created in a market based on unrealistic expectations.
- Understand the consequences of a burst housing bubble on the U.S. economy.

Chapter Outline

How Much Is a House Really Worth?
Mortgages
How to Make a Bubble
Pop Goes the Bubble!
The Effect on the Overall Economy
Summary

In this chapter you will learn about the U.S. housing market, mortgages, and lending practices. Specifically, you will learn how, fundamentally, housing prices are determined, and how housing prices are determined in a hot, bubble market. Finally, you will learn how the bursting of that bubble, in 2006 and 2007, affected other aspects of the U.S. economy.

How Much is a House Really Worth?

Between 1995 and 2005 housing prices in many major urban areas rose much faster than overall inflation and much faster than housing prices in other areas. In 2006 and 2007, housing prices began fall farther and faster than they had in decades. To understand why this happened, we need to remember some fundamentals from the definition of opportunity cost, from supply and demand, and from interest rates and present value.

The key ingredients in what a house is fundamentally worth pertain to the opportunity cost of the land upon which the home sits, the cost of labor and materials in the community, the characteristics of the home itself, and the income of the likely potential buyers. Consider my

home: if real estate is about “location, location, location,” my home is in a good neighborhood, with good schools, and low crime. On the other hand, my home also backs up against a four-lane state highway that can be noisy. I also live in a community in which land is not particularly scarce and material and labor costs for new construction are relatively low. The house itself is 3,000 square feet with four bedrooms, an ample kitchen, and an in-ground pool. In San Francisco, this house would go for \$1 million or more. In Terre Haute, it cost less than a quarter of that. Much of that difference is the cost of the land. If you can find a half-acre lot in a good residential area in San Francisco, it would cost more than \$700,000 because prime building locations are significantly more scarce. Though building costs are higher in San Francisco than in Terre Haute, land costs explain the vast majority of the difference in the fundamental price of a home.

The next biggest factors in explaining home prices are demand side factors such as the characteristics of the home and the income of the buyers. That a home with all modern amenities will sell for more than an older one in need of repair is obvious. Similarly obvious is that the income of a community’s potential buyers matters as well. The median family income in San Francisco is

Table 44.1

approximately \$70,000, whereas in Terre Haute it is less than \$40,000. Half-million dollar homes don't sell in my town because people can't afford them. Table 44.1 ranks cities on housing affordability using the ratio of median housing prices to median income. Clearly, the cities are not randomly distributed geographically. California has 18 of the top 20 least affordable cities and the Midwest is home to 17 of the top 20 most affordable.

Population growth also figures into the equation. Terre Haute has seen its population decline steadily for more than 40 years. This means that for every new home that is built, more than one home will go vacant. In growing areas, new neighborhoods spring up constantly. The Atlanta metropolitan area has seen an increase in home prices based almost entirely on its increase in population.

Mortgages

As we learned in Chapter 7's review of present value and interest rates, the mathematics of amortization are relatively straightforward. In determining a car payment or a mortgage payment, you find the monthly payment that will pay off the debt, at a particular interest rate, over a particular period of time. A mortgage, besides being a

formal piece of paper, is a payment scheme designed to bring the original debt to zero over a period of time. In the good-old days, when your grandparents bought a home, mortgages were all structured the same. The home buyer would be required to pay 20 percent of the value of the home and the bank would loan the remaining 80 percent.

Beginning in the late 1980s mortgages began to spring up where the buyer would have to put down only 5 percent or 10 percent. Though they would have to pay for an insurance policy (that would pay the bank in case of default), this opened up home buying as an option for millions of Americans. In the early part of this decade, zero-down mortgages became common. Only paperwork costs would be charged when the house was sold.

Beginning in 2002, interest-only mortgages and even negative-amortization mortgages began to spring up. An interest-only mortgage, like the name suggests has the buyer paying only interest for the first few (typically 5 or 10) years of a mortgage and then paying off the balance over the remainder of the mortgage. A negative-amortization mortgage does much the same thing, except that the buyer pays about half the interest accrued each month on the mortgage so the outstanding balance on the mortgage rises over time. After a few years, the

TABLE 44.1 Most affordable and least affordable places to live.

Sources: National Association of Home Builders; www.nabh.com.

Least Affordable	Most Affordable
1 Los Angeles–Long Beach–Glendale, CA	1 Springfield, OH
2 Salinas, CA	2 Davenport–Moline–Rock Island, IA–IL
3 Santa Ana–Anaheim–Irvine, CA	3 Bay City, MI
4 Napa, CA	4 Mansfield, OH
5 Merced, CA	5 Canton–Massillon, OH
6 San Diego–Carlsbad–San Marcos, CA	6 Indianapolis, IN
7 New York–White Plains–Wayne, NY–NJ	7 Lima, OH
8 Santa Cruz–Watsonville, CA	8 Lansing–East Lansing, MI
9 Santa Barbara–Santa Maria, CA	9 Youngstown–Warren–Boardman, OH–PA
10 Modesto, CA	10 Detroit–Livonia–Dearborn, MI
11 El Centro, CA	11 Battle Creek, MI
12 Riverside–San Bernardino–Ontario, CA	12 Flint, MI
13 Stockton, CA	13 Saginaw–Saginaw Township North, MI
14 San Luis Obispo–Paso Robles, CA	14 Cumberland, MD–WV
15 Madera, CA	15 Monroe, MI
16 San Francisco–San Mateo–Redwood City, CA	16 Toledo, OH
17 Fresno, CA	17 Buffalo–Niagara Falls, NY
18 Sacramento–Arden–Arcade–Roseville, CA	18 Rockford, IL
19 Oakland–Fremont–Hayward, CA	19 Binghamton, NY
20 Nassau–Suffolk, NY	20 Dayton, OH

mortgage converts to a standard type and the balance is paid off over the remaining years.

Table 44.2

To understand how this works, look at Table 44.2. In a traditional mortgage the payment lasts for the full 30 years. On a \$250,000, 30-year, 5 percent mortgage, the payment is \$1,342 the first month, \$1,342 the last month, and \$1,342 every month in-between. An interest-only mortgage saves the buyer \$300 per month for however long the interest-only period lasts, but the payment increases substantially once the mortgage converts to a traditional version. The payment on a negative-amortization mortgage is typically half the interest on the outstanding balance so the balance and the interest owed each month rise very slowly until the point where it converts to a traditional mortgage and then the payment nearly triples.

These interest-only and negative-amortization, a.k.a., “exotic” mortgages are popular because they allow someone of modest means to get into a home they might otherwise not be able to afford. Making the payment later becomes the challenge. These mortgages are also popular when home prices are rising at rapid rates.

How to Make a Bubble

As NASDAQ investors of the late 1990s discovered, bubbles are created by the expectation of higher prices causing people to buy assets based on that expectation rather than fundamentals. When you are told to “buy now before the price goes up” and you do, you only add to the volume of the bubble. People buy on the expectation that prices will rise faster than their ability to afford those same assets later so they become convinced to buy now. What really gets a bubble going is borrowed money. If you had to put 20 percent down on a home, the increased price would affect your ability to react to that expectation. With the ability to put nothing down, and pay only half the interest, the buyer’s ability to continue fueling the bubble is sustained, not diminished.

As NASDAQ bubble-riders remember, bubbles are fun when they go up. Why? Suppose you buy a \$250,000 home with no down payment in a hot housing market using a negative-amortization scheme and that after five years the home appreciates in value to \$500,000. Yes, you owe \$283,250, but you now have \$216,750 in equity in that home. Even better, in the current climate, another bank may be willing to loan you money based on that \$216,750 in perceived equity so even though your payment has risen, you can borrow against your equity to

make that higher monthly payment for a while, or perhaps you can go on a nice vacation, and, while you are at it, buy an expensive SUV.

Pop Goes the Bubble!

What the previous story relies upon heavily is the fiction that home prices only go up. Home prices can fall. Imagine this story somewhat differently. Suppose the price of the home falls from \$250,000 to \$200,000 because the home was only 1,500 square feet to begin with, had few amenities, and was in a relatively unattractive neighborhood. That is, suppose the fundamentals start to take over and the speculative demand to buy a house at any price goes away, meaning that the only reason its price exceeded what was rational for its location was a bubble mentality (like NASDAQ 1999 and 2000). Now the poor homeowner, who paid \$250,000 for a home that is worth only \$200,000, must pay \$1,656 per month because he or she owes \$283,250.

What are the options? Not many. First, if they sell the home they are in, they will owe \$83,250 plus real estate fees of approximately \$12,000 more and they will have no home. If they do not have that in savings, they will have to negotiate some other noncollateralized loan to pay off that amount before they can buy another home. Their only option to get out from under the massive debt is bankruptcy. This is a very bad option because they not only lose the home in which they live but they become unable to buy another home for years to come. Of course, they also eliminate their ability to buy cars, furniture, or anything else on time as well. Their ability to go on vacation is quashed by their inability to qualify for credit cards and their ability to pay off their existing credit card debt is eliminated because they no longer have equity in their home.

People who used this form of negative-amortization loan to purchase a home did so either because they believed their income in a few years would be sufficient to cover the increased mortgage payment, or they believed that housing prices would continue to rise, or they believed that a combination of the two would cause everything to turn out in the end. Unfortunately, it didn’t “turn out in the end” for many borrowers. By 2006 and into 2007 foreclosures and near foreclosures (homes more than 30 days in arrears) began to skyrocket. In some states, Nevada and Colorado, in particular, the ratio of homes in foreclosure to total homes was three times the national average at around 1 in 300. Some cities like Denver and Indianapolis saw ratios of worse than 1 in 100.

TABLE 44.2 Traditional, zero-interest, and negative amortization mortgages, 30 years 5 percent.

Payment Number	Traditional Mortgage			Interest-Only, 5 Years			Interest-Only, 10 Years			Negative-Amortization, 5 Years		
	Payment	Interest	Balance	Payment	Interest	Balance	Payment	Interest	Balance	Payment	Interest	Balance
0			\$250,000			\$250,000			\$250,000			\$250,000
1	\$1,342	\$1,042	249,700	1,042	\$1,042	250,000	\$1,042	\$1,042	250,000	\$521	\$1,042	250,521
2	1,342	1,040	249,398	1,042	1,042	250,000	1,042	1,042	250,000	522	1,044	251,043
3	1,342	1,039	249,095	1,042	1,042	250,000	1,042	1,042	250,000	523	1,046	251,566
4	1,342	1,038	248,791	1,042	1,042	250,000	1,042	1,042	250,000	524	1,048	252,090
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57	1,342	963	230,719	1,042	1,042	250,000	1,042	1,042	250,000	585	1,170	281,487
58	1,342	961	230,338	1,042	1,042	250,000	1,042	1,042	250,000	586	1,173	282,074
59	1,342	960	229,956	1,042	1,042	250,000	1,042	1,042	250,000	588	1,175	282,661
60	1,342	958	229,572	1,042	1,042	250,000	1,042	1,042	250,000	589	1,178	283,250
61	1,342	957	229,186	1,461	1,042	249,580	1,042	1,042	250,000	1,656	1,180	282,775
62	1,342	955	228,799	1,461	1,040	249,159	1,042	1,042	250,000	1,656	1,178	282,297
63	1,342	953	228,410	1,461	1,038	248,735	1,042	1,042	250,000	1,656	1,176	281,817
64	1,342	952	228,020	1,461	1,036	248,310	1,042	1,042	250,000	1,656	1,174	281,336
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117	1,342	855	204,827	1,461	932	223,053	1,042	1,042	250,000	1,656	1,056	252,720
118	1,342	853	204,338	1,461	929	222,521	1,042	1,042	250,000	1,656	1,053	252,117
119	1,342	851	203,848	1,461	927	221,987	1,042	1,042	250,000	1,656	1,050	251,512
120	1,342	849	203,355	1,461	925	221,450	1,042	1,042	250,000	1,656	1,048	250,904
121	1,342	847	202,860	1,461	923	220,912	1,650	1,042	249,392	1,656	1,045	250,293
122	1,342	845	202,364	1,461	920	220,371	1,650	1,039	248,781	1,656	1,043	249,680
123	1,342	843	201,865	1,461	918	219,827	1,650	1,037	248,168	1,656	1,040	249,065
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358	1,342	17	2,667	1,461	18	2,905	1,650	20	3,279	1,656	21	3,291
359	1,342	11	1,336	1,461	12	1,455	1,650	14	1,643	1,656	14	1,649
360	1,342	6	0	1,461	6	0	1,650	7	0	1,656	7	0

The Effect on the Overall Economy

The bursting housing bubble has had the effect of slowing the rate of growth of the overall economy. Part of the reason the impact has been relatively modest is that the bubble existed only in relatively few locations. In addition, because overall interest rates and mortgage rates remained low through 2006 and 2007, housing affordability remained relatively strong in most parts of the country. That kept housing demand from plummeting. Had the homes in foreclosure been put into a market with severely declining demand, the damage could have been far worse.

The impact that has occurred has mostly come in the consumer sector where billions of dollars in on-paper home equity was lost. Consumers could no longer refinance their homes and use the garnered cash to purchase other goods and services. The subprime lending market, the market for people with relatively poor credit, also began to significantly tighten so that people in these circumstances were left having to live on what they earned.

How is this different than the result of the bursting of the stock market's bubble in 2000? In large measure it is different because in that case investors lost money that they used to buy assets that later diminished in price. Here, people are buying homes while borrowing the money to do so. If you save \$1,000 and buy a stock at an inflated price only to see it fall to a reasonable price of, say \$300 (the approximate percentage loss in the NASDAQ during the 2000 crash in tech stocks), you are poorer, not bankrupt. If you borrow \$250,000 to buy a house and it falls in price to \$200,000 you risk bankruptcy.

Economists are now estimating that the impact of the bursting housing bubble has been to chop about 1 percent off the real annual growth rate for the overall economy in 2006 and 2007. Had we been on the verge of a recession in 2006 and 2007, the bursting housing bubble might have been enough to push us into one. That the economy was reasonably healthy during that period meant that the United States economy grew more slowly than it would have otherwise.

Summary

You now understand the fundamental elements that determine housing prices, how homes are typically financed, and that new types of mortgages are replacing traditional 20 percent-down, constant-payment mort-

gages. You also understand that unrealistic expectations in housing prices can create spiraling price increases and that such bubbles inevitably burst and can have a significant economic impact.

Quiz Yourself

- The type of mortgage that allows you to make the lowest possible payment is called a
 - Zero-down mortgage.
 - A traditional constant-payment, 20 percent-down mortgage.
 - An interest-only mortgage.
 - A negative-amortization mortgage.
- In which type of mortgage do you build equity the fastest?
 - Zero-down mortgage.
 - A traditional constant-payment, 20 percent-down mortgage.
 - An interest-only mortgage.
 - A negative-amortization mortgage.
- In which type of mortgage do you neither build nor lose equity?
 - Zero-down mortgage.
 - A traditional constant-payment, 20 percent-down mortgage.
 - An interest-only mortgage.
 - A negative-amortization mortgage.
- Fundamentally, housing prices are a function of the home's
 - Location and amenities.
 - Amenities only.
 - Location only.
 - Interest rates only.
- A housing bubble occurs when _____ drive(s) prices more than fundamental factors.
 - The price of gasoline.
 - A home's expected future price.
 - Interest rate changes.
 - Property tax increases.

6. A bursting of a housing bubble could create more problems than the NASDAQ crash in 2000 because the housing bubble involves
- Assets and NASDAQ was about debts.
 - Risky forms of debt.
 - More people.
 - Fewer people.

Think about This

Those who do not believe that there is a bubble in housing markets point to the fact that the ratio of housing loans to values is not terribly out of line with past practice. Those who believe that there is a bubble suggest that the “value” is overstated by the bubble itself and that for many people who recently bought a home, the amount

they owe is more than they paid for their home. How would you look at “value” for the purposes of evaluating whether there is a bubble?

Talk about This

Imagine a posthousing bubble world in which millions of families owe substantially more money on their homes than they could sell them for. Now note that recent changes to bankruptcy laws make it more difficult to declare bankruptcy. This will leave many fully employed, hard-working people trapped in their homes with no means of financial escape. Should we treat negative-amortization mortgages and interest-only mortgages like cocaine: banned to prevent you from making a lifetime mistake?