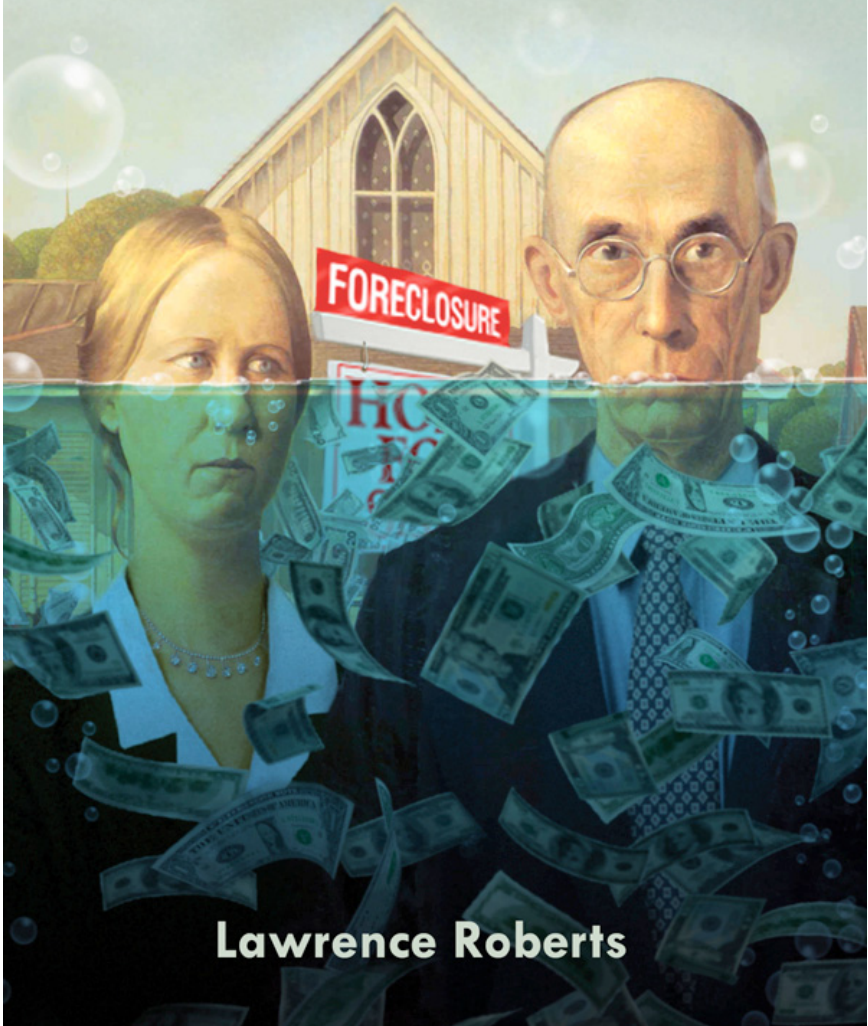


THE GREAT
HOUSING BUBBLE
Why Did House Prices Fall?



Lawrence Roberts

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Published by Monterey Cypress Publishing, a division of Monterey Cypress, LLC

ISBN: 0-615-22693-0
EAN-13: 978-0-615-22693-4

The softcover book, *The Great Housing Bubble*, can be purchased at => [Amazon.com](http://www.amazon.com).

The full text ebook of *The Great Housing Bubble* can be purchased at => <http://www.thegreathousingbubble.com/>

Other free excerpt ebooks of *The Great Housing Bubble* can be found at => <http://www.thegreathousingbubble.com/>

The author's work can also be found at the Irvine Housing Blog where he has been the primary writer since February of 2007.

<http://www.irvinehousingblog.com/>

The Irvine Housing Blog has become noted for its unique delivery of real estate market analysis in Slate Magazine, the Washington Post, and Newsweek Magazine. The blog reaches an average of 3,500 unique visitors a day, and it received over 2,000,000 page views in its first year of operation.

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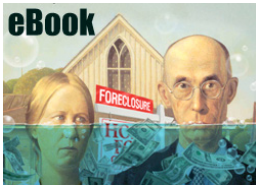
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I would like to thank the following people without whom this book would have never been published:

Profette – Anonymous published author, copy editor and support person. Without her encouragement I would not have believed people would be interested in my writing.

Brian Whitworth – Financial researcher and content editor. With his review, challenges to the basic assumptions, and review of the academic literature supporting the thesis, this book was elevated from a series of unsupported opinions to a well-researched and well-documented literary work.

Zovall – Anonymous owner of the Irvine Housing Blog who asked me to write for him in early 2007. If this had not happened, the framework of this book would never have been written.

Sean O’Daniels – Graphic artist whose creative cover design captured the essence of the housing bubble.

Tom Rollinger – Successful hedge fund manager, close friend and great networker who convinced me to finish the book by showing me how it could be marketed effectively.

Rik Osmer – A tireless supporter, proofreader, and former mortgage broker whose insights into the workings of the mortgage industry greater increased my understanding of the mechanics of the housing bubble.

Sheri Langerman – An early proofreader and editor. Her suggestions and insights helped shape the final text.

Richard May – His blog, colored by his irreverent sense of humor, was my inspiration to write about this subject in the public realm.

The Bubble Bloggers – The community of concerned citizens who have been loudly proclaiming the existence of the housing bubble in the noble cause of saving buyers from financial destruction.

The Irvine Housing Blog Community – The regular readers and astute observers on the Irvine Housing Blog have been an ongoing support group with constant encouragement and a feverish desire to see this book in print. This group, more than any other, has acted a crucible burning away the irrelevancies with their feedback and leaving a product which addresses the core of the housing bubble.

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Preface

I work as a development consultant in the real estate industry in Southern California. My education and experience has acquainted me with a variety of real estate markets, but residential real estate is the one with which I am most familiar. I am not a realtor or a mortgage broker, and my livelihood, though dependent upon the real estate industry, it is not dependent upon facilitating a home-sale transaction. What is presented here is both historical account and unbiased analysis. My observations of the residential real estate market are not tainted by any need or desire to convince anyone they should buy a house. In fact, one of my motivations for writing about the Great Housing Bubble is to convince people *not* to buy a house when prices are inflated and save them from financial ruin. It saddens me to watch homebuyers get caught up in the bubble mythology and enter into a financial transaction that will have a strongly negative impact on their financial lives. People who have already made that decision cannot be helped except at the expense of a naïve buyer. Sellers have the marketing machine of the National Association of Realtors to help them. Buyers have few sources of unbiased information to assist their decision. Part of the purpose of this writing is to educate both buyers and sellers on the realities of the residential real estate market.

One of the difficulties of writing a book on the Great Housing Bubble in 2008 is that the bubble has not played itself out yet. There is a necessary change in tense required when speaking of events prior to 2008 and those projected to occur during and after 2008. Someone reading this in 5 years may look back on it as history, but for those of us living it now, it is a history not yet lived. Much of what is presented here may not come to pass, or it may not happen in the way hypothesized in this book. History will judge whether this is prescient, or if it is “a tale told by an idiot, full of sound and fury, signifying nothing.”¹

Irvine Housing Blog

I discovered Real Estate Bubble Blogs in November of 2006.² Many were in existence much earlier, but I was not a big reader of blogs prior to this time. I

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first discovered the Irvine Housing Blog when my wife found a series of interesting posts on people who were attempting to sell properties for a quick profit (flipping,) and they were getting burned. I was quickly hooked. From the blogroll (links to other blogs) I was able to locate several other bubble blogs, and I quickly became a regular reader and commenter on several blogs in this community.

In February of 2007, I was asked to write for the Irvine Housing Blog. I had a great deal of pent-up energy for writing about the housing bubble. Over the months that followed I wrote a series of analysis posts which became the structure of this book. Daniel Gross, a freelance writer published in Slate Magazine, the Washington Post and Newsweek, characterized the writing as follows (Gross, *The Real Morons of Orange County*, 2007): "IrvineHousingblog, brilliantly drives home the same point with daily dispatches. The blog is a guide to the seventh circle of real estate hell – people who buy houses on spec with no money down. A typical entry chronicles the purchase price, tracks down the amount of debt on the property, and then calculates how much each party – the buyer, the first mortgage holder, the second mortgage holder – stands to lose assuming the seller receives the asking price."

The Reservoir of Schadenfreude

The readers of the Irvine Housing Blog have a voracious appetite for profiles of losing properties. They are not alone. Why do people get so much pleasure from seeing would-be real estate moguls lose a great deal of money? I can think of no other human endeavor that has engendered so much pleasure in the misfortune of others by otherwise caring, compassionate people. In my opinion, the outpouring of schadenfreude we are seeing as the housing bubble deflates is a mixture of Greek tragedy and bad karma. In short, bubble participants should have seen it coming, and they are getting what they deserve.

Schadenfreude is not a spiritually uplifting emotional response. Most religious traditions would counsel us against it. In Buddhist teaching, people are taught to cultivate feelings of compassion for the misfortune of others – feeling empathy and sadness for the slings and arrows of outrageous fortune when they impact another.³ The near enemy of compassion is pity: it masquerades as compassion, but it has an element of separateness which detracts from the sense of Oneness with all things. Joy is good: Sympathetic joy, the joy in the happiness of another, is another pillar of a spiritual existence; however, joy in the misfortune of another – schadenfreude – is not a skillful behavior leading to happiness. Even knowing that, many of us feel this joy anyway. Why is that?

I recognized financing terms were creating artificially high prices early on. By 2004, I was telling people I knew that this was a problem which would cause a market crash. Most people looked at me like I was crazy. "Real estate always goes up," I was told. "The government would never allow prices to crash," I was told. "If you do not buy now you will be priced out forever," I was told. This is the intoxicated language of real estate junkies who have overdosed on the real-estate-appreciation kool aid. If these statements had been offered in a defensive

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manner of someone who is being made to realize they made a serious mistake, I could have felt sympathy for them; I would have been able to disarm their defensiveness and helped them see the light. However, what I generally got was a smug assuredness of someone who truly believed he was right and I was wrong; not just that I was wrong; I was a stupid, cowardly fool who did not have the brains or the bravery to take the free money being given out. This was particularly surprising given my line of work. It was as if a patient after getting a diagnosis of cancer told the doctor that the physician did not understand the tissue growth was a natural, healthy process. The buyers caught up in the Great Housing Bubble did not recognize the financial cancer even when an expert in the field told them how dangerous it was.

During the bubble rally, those of us who chose not to participate were labeled as “bitter renters.” It was suggested we were envious of the good fortune of homeowners as their property values rose, as they took on insane amounts of debt, and as they blithely financed a lifestyle well beyond their means. This was undoubtedly true for some, but in my opinion, this is not the primary reason so many derive so much pleasure from the misfortune of those now suffering from declining property values. These same people who chided us for being envious actually wanted us to be envious: they wanted us to know they were the winners in our competitive society; they wanted us to view them as superior. This act of putting themselves above us created a separation which prevented us from feeling sympathetic joy for their good fortune, and it prevented us from feeling compassion for them when they fell.

In our collective unconscious which manifests in our dreams and our mythology, water is often symbolic of our emotions or our emotional state. Have you noticed people are often categorized as deep or shallow? If you are in debt you often feel “underwater.” Anger is much like water: if not given an outlet, it will fill a reservoir until it reaches a breaking point and is expressed in a flood of emotional rage. Each encounter with a pathologic, kool-aid-drinking housing bull during the bubble rally has added to this reservoir, and reveling in failed flips is an outlet for this pool of toxic emotional waste.

There is an element of tragedy in every disaster, but financial bubbles are some of the most interesting because they are completely man made. They are created by the accumulation of individual decisions of buyers who are motivated by greed, foolish pride, and a false sense of security. Each of these people should have known better. Many of them were warned of their impending doom by those who saw trouble brewing, and yet, many chose to go down the path to the Dark Side. Newton’s Third Law states, “For every action, there is an equal and opposite reaction.” The Law of Karma states, “For every event that occurs, there will follow another event whose existence was caused by the first, and this second event will be pleasant or unpleasant according as its cause was skillful or unskillful.” It became obvious as the crash began; the behavior of buyers during the bubble rally was not skillful. Whether it is Newton’s Third Law, Karma, or a Calvinist form of retributive justice, as this bubble deflates, many of the participants in this bubble are about to experience a great deal of hardship. Like many others, I will enjoy their suffering until my reservoir of schadenfreude is emp-

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tied. For the sake of my own personal spiritual well being, I hope this happens soon so I can regain my normal emotional balance and rekindle my feelings of compassion for my fellow human beings.

Introduction

Why did house prices fall? This is the fundamental question to most Americans, and to those who lent them money. Most homeowners did not care why residential real estate prices rose; they assumed prices always rose, and they should simply enjoy their good fortune. It was not until prices began to fall that people were left searching for answers. This book examines the causes of the breathtaking rise in prices and the catastrophic fall that ensued to answer the question on every homeowner's mind: "Why did house prices fall?"

Even though the decline is nowhere near over in 2008, already the Great Housing Bubble witnessed the largest decline in house prices since the Great Depression. The asset bubble for the Great Depression was the stock market while the asset bubble for the Great Housing Bubble was residential real estate. The title of the book, the Great Housing Bubble, is an allusion to the Great Depression of the 1930s. Both of these dramatic events were the result of a wild expansion of credit and a subsequent crash in asset prices that stressed the banking system and led to a dramatic economic slowdown.⁴

The book is arranged into 10 chapters. The first 4 chapters provide background information and are used to define terms and provide a broad conceptual understanding of residential real estate economics, chapters 5 through 8 discuss the structural and psychological factors that inflated and deflated the bubble, and the final two chapters describe methods of coping with the housing bubble. Chapter 1 is a general description of financial bubbles as a psychological phenomenon and the unique beliefs of residential real estate bubbles. Chapter 2 details the financing environment surrounding residential real estate. It defines and categorizes the types of borrowers and the types of loan programs available, and it illustrates how financing impacts the wealth of individual owners and the economy as a whole. Chapter 3 summarizes the mathematics determining the value of residential real estate and examines issues pertaining to the rent-versus-own decision, and chapter 4 delves into the fine points of determining the value of individual lots and raw land. Chapter 5 illuminates the credit bubble (which was largely responsible for the real estate bubble) with rigorous detail on the structure of the secondary mortgage market and how the expansion of credit

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through this market inflated the housing bubble. Chapter 6 looks at the housing bubble, its various measurements, and explains why the bubble burst. Chapter 7 is a review of the psychology of real estate bubbles. Financial bubbles are primarily psychological phenomenon, and the various aspects of investor psychology are explored to see how they shape the market. Chapter 8 is a projection of future house prices based on the data and conditions as they existed in early 2008. Chapter 9 contains advice for both sellers and buyers who plan to be active while prices are declining. Chapter 10 is a review of the causes of the bubble and proposals for reforms to prevent residential real estate bubbles from happening again.

The examples and data used in the analysis are national in scope, and they are also focused on the local residential real estate market in Irvine, California. The Great Housing Bubble is a national phenomenon; however, the national statistics soften the extremes and make the rise and fall look less remarkable. In some local markets, the prices changes are truly extraordinary, and it is through examining these markets that the story of the bubble is best told. A fine exemplar of the Great Housing Bubble is Irvine, California. Irvine is a large, master-planned community of over 200,000 residents. The high incomes of Irvine residents are reflected in the rental rates for properties which are consistently near the highest in the nation. High incomes and rents translate into high real estate prices, even at the bottom of down cycles. When reviewing the properties in Irvine and the price tags attached to them, it is not uncommon for outsiders to believe a decimal point has been misplaced. The lessons learned from the Irvine experience are universal. Though many the examples from this work focus on Irvine, this is a book about the Great Housing Bubble of which Irvine was both a catalyst and one of its biggest participants.

Table 1 - Top Subprime Lenders 2006

Rank	Lender	Market Share %
1	Wells Fargo	13.0%
2	HSBC Finance	8.3%
3	New Century	8.1%
4	Countrywide Financial	6.3%
5	CitiMortgage	5.9%
6	WMC Mortgage	5.2%
7	Fremont Investment	5.0%
8	Ameriquest	4.6%
9	Option One	4.5%
10	First Franklin	4.3%
11	Washington Mutual	4.2%
12	Residential Funding	3.4%
13	Aegis Mortgage	2.7%
14	American General	2.4%
15	Accredited Lenders	2.3%
Top 15 Lenders		80.2%

Source: Inside B&C Lending

INTRODUCTION

The epicenter of the Great Housing Bubble is located in Irvine, California. One of the primary causes of the bubble was the lowering of lending standards and the extension of credit to people who could not handle the responsibility: Subprime borrowers. The word “subprime” has become indelibly linked to the Great Housing Bubble. It is one of the causal factors that make the bubble unique, and the collapse of subprime is widely regarded as the pin-prick which began the bubble’s deflation. Irvine, California, is the center of the subprime universe. Three of the top ten subprime lenders, New Century, Ameriquest, and Option One, are (or were) headquartered in Irvine. Most subprime lenders have processing offices in Irvine due to the large number of trained personnel living in the area. Irvine’s New Century Financial, formerly the second largest subprime operator, is heralded as the poster child of the bubble. The company name “New Century” implies a new era and a new paradigm. It embodies the fallacious beliefs and ideas that inflated the Great Housing Bubble.

Volatility in real estate prices is not new to California. During the 1970’s, real estate prices detached from typical valuations of three-times yearly income seen in the rest of the country. Once residents realized they could push up prices in their real estate markets to dizzying heights, they have been doing it ever since. Greed springs eternal. The Great Housing Bubble is the third such bubble in the last 30 years, and it is the largest of all. The detachment from traditional measures of valuation was so extreme that it is difficult for many to comprehend. Each time the bubble bursts, the crash is incorrectly blamed on some outside force, and each time the rally is thought to be different than the rally in previous cycles. It never is.

Fundamental Valuation of Houses

The fundamental value of all housing prices is equivalent rents. Rents define the fundamental value of real estate because rental is a direct proxy for ownership; both rental and ownership provide for possession of property. Equivalent rents are a major component of the United States Government's Consumer Price Index (CPI).⁵ According to the US Department of Labor, "This approach measures the change in the price of the shelter services provided by owner-occupied housing. Rental equivalence measures the change in the implicit rent, which is the amount a homeowner would pay to rent, or would earn from renting, his or her home in a competitive market. Clearly, the rental value of owned homes is not an easily determined dollar amount, and Housing survey analysts must spend considerable time and effort in estimating this value." Prior to the first California housing bubble in the late 1970s, the housing cost component of the CPI was measured using actual price changes in the asset. When this bubble created an enormous distortion in this index, the rental equivalence model was constructed. It has been used to smooth out the psychologically-induced housing price bubbles ever since.

An argument can be made for the real cost of construction as the fundamental valuation of houses. If house prices in a market fall below the cost of new construction, no new houses will be built because a builder cannot make a profit. If there is continuing demand for housing, the lack of supply will create an imbalance which will cause prices to increase. When new construction becomes profitable again, new product will be brought to market bringing supply and demand back into balance. If demand continues to be strong, builders will increase production to meet this demand keeping prices near the real cost of construction.

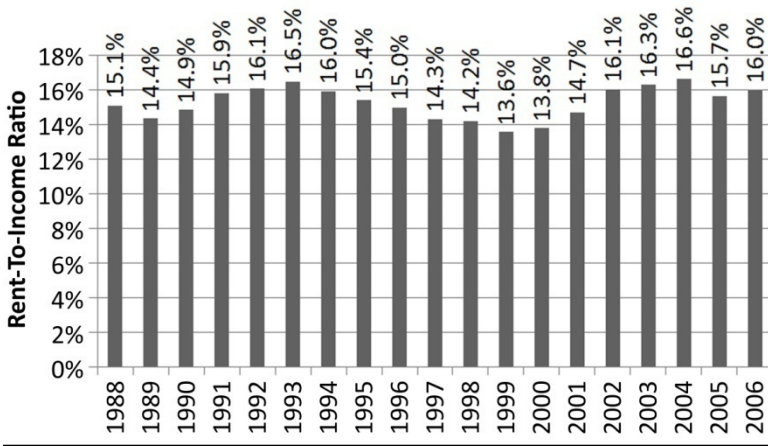
Based on a theory of rational market participants, one would expect that when prices go up and the cost of ownership exceeds the cost of rental, people choose to rent rather than own, and the resulting drop in demand would depress home prices: The inverse would also be true. Therefore, the proxy relationship between rental and ownership would keep home prices tethered to rental rates. However, this is not the case.⁶ If there were only a consumptive value to real

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estate, the cost of ownership and the cost of rental probably would stay closely aligned; however, since there is an opportunity to profit from speculative excesses in the market, rising prices can lead to irrational exuberance as buyers chase speculative gains.

Rental rates tend to keep pace with wages because people normally pay rent out of current income. As people make more money, they compete for the available rentals and drive prices up at a rate about 1% greater than the overall rate of inflation.⁷ There are times when supply and demand issues in local markets create fluctuations in this relationship, but as a rule, rents track wages pretty closely. Since house prices are tied to rents, and rents are tied to wages, house prices are indirectly tied to wages. When house prices increase faster than wage growth, the price levels become unsustainable, and if the differential is too great, a bubble is inflated.⁸

Figure 1 - National Rent-to-Income Ratio, 1988-2006



Source: US Census Bureau

Ownership Cost Math

A useful way to look at the cost of housing is to evaluate the total monthly cost of ownership. There are 7 costs to owning a house. Although some of these costs are not paid on a monthly basis, they can be evaluated on a monthly basis with simple math. These costs are:

1. Mortgage Payment
2. Property Taxes
3. Homeowners Insurance
4. Private Mortgage Insurance
5. Special Taxes and Levies
6. Homeowners Association Dues or Fees
7. Maintenance and Replacement Reserves

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Mortgage Payment

The mortgage payment is the first and most obvious payment because it is the largest. It is also an area where people take risks to reduce the cost of housing. It was the manipulation of mortgage payments that was the focus of the lending industry “innovation” that inflated the housing bubble. The relationship between payment and loan amount is the most important determinant of housing prices. This relationship changes with loan terms such as the interest rate, but it is also strongly influenced by the type of amortization, if any. Amortizing loans, loans that require principal repayment in each monthly payment, finance the smallest amount. Interest-only loan terms finance a larger amount than amortizing loans because none of the payment is going toward principal. Negatively amortizing loans finance the largest amount because the monthly payment does not cover the actual interest expense.

Property Taxes

Property taxes have long been a source of local government tax revenues. Real property cannot be moved out of a government’s jurisdiction, and values can be estimated by an appraisal, so it is a convenient item to tax. In most states, local governments add up the cost of running the government and divide by the total property value in the jurisdiction to establish a millage tax rate. California is forced to do things differently by Proposition 13 which effectively limits the appraised value and total tax revenue from real property.⁹ Local governments are forced to find revenue from other sources. Proposition 13 limits the tax rate to 1% of purchase price with a small inflation multiplier allowing yearly increases.¹⁰ The assessed value is can only increase 2% a year regardless of actual market appreciation. The assessed value is set to market value when the property is sold. Often the lender will compel the borrower to include extra money in the monthly payment to cover property taxes, homeowners insurance, and private mortgage insurance, and these bills will be paid by the lender when they come due. If these payments are not escrowed by the lender, then the borrower will need to make these payments. The total yearly property tax bill can be divided by 12 to obtain the monthly cost.

Homeowners Insurance

Homeowners insurance is almost always required by a lender to insure the collateral for the loan. Even if there is no lender involved, it is always a good idea to carry homeowners insurance. The risk of loss from damage to the house can be a financial catastrophe without the proper insurance. A standard policy insures the home itself and its contents. Homeowners insurance is a package policy which covers both damage to property and liability or legal responsibility for any injuries and property damage by the policy holder. Damage caused by most disasters is covered with some exceptions. The most significant exceptions are damage caused by floods, earthquakes and poor maintenance.

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Private Mortgage Insurance

Mortgages against real property take priority on a first recorded, first paid basis. This is known as their lien position. This becomes very important in instances of foreclosure. The first mortgage holders get paid in full before the second mortgage holder get paid and so on through the chain of mortgages on a property. In a foreclosure situation, subordinate loans are often completely wiped out, and if the loss is great enough, the first mortgage may be imperiled. Because of this fact, if the purchase money mortgage (first lien position) exceeds 80% of the value of the home, the lender will require the borrower to purchase an insurance policy to protect the lender in event of loss. This policy is of no use or benefit to the borrower as it insures the lender against loss. It is simply an added cost of ownership. Many of the purchase transactions during the bubble rally had an 80% purchase money mortgage and a “piggy back” loan of up to 20% to cover the remaining cost. These loan pairs are often referred to as 80/20 loans, and they were used primarily to avoid private mortgage insurance. There were very common during the bubble.

Special Taxes and Levies

Several areas have special taxing districts that increase the tax burden beyond the normal property tax bill. Many states have provisions which allow supplemental property tax situations. The State of California has Mello Roos fees. A Community Facilities District is an area where a special tax is imposed on those real property owners within the district. This district is established to obtain public financing through the sale of bonds for the purpose of financing certain public improvements and services. These services may include streets, water, sewage and drainage, electricity, infrastructure, schools, parks and police protection to newly developing areas. The taxes paid are used to make the payments of principal and interest on the bonds.

Homeowner Association Dues and Fees

Many modern planned communities have homeowners associations formed to maintain privately owned facilities held for the exclusive use of community residents. These HOAs bill the owners monthly to provide these services. They have foreclosure powers if the bills are not paid. It is given the authority to enforce the covenants, conditions, and restrictions (CC&Rs) and to manage the common amenities of the development. It allows the developer to legally exit responsibility of the community typically by transferring ownership of the association to the homeowners after selling off a predetermined number of lots. Most homeowners' associations are non-profit corporations, and are subject to state statutes that govern non-profit corporations and homeowners' associations. In cases where a large number of houses are unsold, in foreclosure, or are owned by lenders, remaining homeowners may encounter large increases in assessments. In some cases, the additional cost can become unaffordable to remaining

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homeowners pushing more of them to sell or be foreclosed on by their own homeowners association.

Maintenance and Replacement Reserves

An often overlooked cost of ownership is the cost of routine maintenance and the funding of reserves for major repairs. For example, a composite shingle roof must be replaced every 20-25 years. It may take \$100 a month set aside for 20 years to fund this replacement cost. Also, condominium associations often levy special assessments to undertake required work for which the reserves are insufficient. In the real world, most people do not set aside money for these items. Most will attempt to obtain a Home Equity Line of Credit (HELOC) to fund the repairs when they are necessary. Of course, this assumes a property has appreciated and that such financing will be made available.

Tax Savings

There are two other variables people often consider when evaluating the cost of ownership that is not included in the prior list: income tax savings and lost downpayment interest. When a borrower takes out a home loan, the interest is tax deductible up to a certain amount. For borrowers in the highest marginal tax bracket, the savings can be significant, and this can make a dramatic difference in the true cost of ownership. However, this benefit diminishes over time as the loan is paid off and the interest decreases. Plus, contrary to popular belief, it is never good financial planning to spend \$100 to save \$25 in taxes. Also, these benefits are almost universally overestimated by people considering a home purchase. Renters considering home ownership will need to remember that they will be giving up the standard deduction when they itemize to obtain the Home Mortgage Interest Deduction (HMID).¹¹ A “married filing jointly” taxpayer will forgo a \$10,700 deduction in 2007. This reduces the net impact of the HMID. Anecdotally, even those in the highest tax brackets usually do not get more than a 25% tax savings.

Hidden Savings

This is the forgotten benefit of a conventionally amortizing loan: forced savings. Most people are not good at saving. The government recognized this years ago when they started taking money out of people’s salaries to pay income taxes because they knew people would not do it on their own. People who become homeowners during their lifetimes often have the equity in their home as their only source of retirement savings other than social security. To accurately calculate the cost of ownership, this hidden savings amount needs to be deducted from the total cost of ownership because this money will generally come back to the borrower at the time of sale. Since taxpayers in the United States get a capital gains exemption up to \$250,000 per person or \$500,000 per couple, this savings amount does not need to be adjusted for capital gains taxes in most circumstances.

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Lost Downpayment Interest

Unless 100% financing is utilized, a cash downpayment will generally be withdrawn from an interest bearing account to purchase a house. The monthly interest that would have accrued if the downpayment money was still in the bank is a cost of ownership. This is perhaps the most overlooked ownership cost. For instance, if you are putting 20% down on a \$244,900 property, you will be taking \$48,980 from a bank account where it would have earned 5% in 2007. This \$2,449 in interest comes to \$204 in lost interest the moment this money gets tied up in real property. If someone chooses to rent rather than buy, this interest income would be earned. Of course, this earned income is also taxed, so 75% of this number is the net opportunity cost of a downpayment.

To establish the cost of ownership, each of these costs, if applicable, must be quantified. When the total monthly cost of ownership is equal to the rental rate, the market is considered to be at fair value for owner-occupants. In fact, this is the equilibrium in most real estate markets across the nation. In a strange way, the bubble did not upset this equilibrium. The use of negative amortization loans with artificially low teaser rates allowed borrowers to obtain double the loan amount with the same monthly payment: double the loan; double the purchase price. This is how prices were bid up so high so fast without a commensurate increase in wages. The elimination of these loans is also the reason prices collapse.

Running the Numbers

Below is a typical cost of ownership for a \$244,900 Median property in the US (2006):

Equation 1 - Cost of Ownership for 2006 Median Property in United States

\$ 244,900	Purchase Price
\$ 48,980	Downpayment @20%
\$ 195,920	Mortgage @ 80%
\$ 1,238.35	Mortgage Payment @ 6.5%
\$ 204.08	Property Taxes @ 1%
\$ 51.02	Homeowners Insurance @ 0.25%
\$ 51.02	Special Taxes and Levies @ 0.25%
\$ 100.00	Homeowners Associate Dues or Fees @ \$100
\$ 306.13	Maintenance and Replacement Reserves @ 1.5%
<hr/>	
\$1,950.60	Monthly Cash Cost
\$ (278.06)	Tax Savings @ 25% of mortgage interest and property taxes
\$ (177.11)	Equity hidden in payment
\$ 153.06	Lost Downpayment Income @ 5% of Downpayment
<hr/>	
\$ 1,648	Total Cost of Ownership

FUNDAMENTAL VALUATION OF HOUSES

Notes:

- The mortgage payment assumes a 30-year fixed-rate conventionally amortized mortgage at 6.5% interest.
- The property taxes are set at the 1% limit imposed by Proposition 13.
- The homeowners insurance is estimated at one-quarter of one percent per year.
- Private Mortgage Insurance is estimated at one-half of one percent per year. It is not included in the calculation above because this example utilized 80% financing. If the financing amount required PMI, the costs would have been over \$100 a month higher.
- Special Taxes or Levies (Mello Roos) is estimated at one-quarter of one percent per year. Some neighborhoods do not have Mello Roos as the bonds have been paid off. Some Mello Roos fees are as high at 1%.
- HOA dues are estimated at \$100: some are lower, and some are much higher.
- Maintenance and replacement reserves are estimated at 1.5%. This may be the most contentious estimate of the group because most people assume they will simply borrow their way around these costs when they are incurred. This certainly has been the pattern during the bubble years when credit was free flowing. This method of home improvement and maintenance may be significantly more difficult as the credit crunch and declining values make financing much more difficult to obtain. In any case, these costs are real, and failing to acknowledge them denies the realities of home ownership.
- The sum of the above costs is the monthly cash cost of ownership. A homeowner may not write a check for each of these costs every month, but the costs are still incurred, and renters do not pay them.
- The tax savings are based on the maximum interest payment at the beginning of a loan amortization schedule. This tax savings will decline each month as the mortgage is paid off. Contrary to popular belief, this is not a bad thing. Also, the property taxes are also deductible, but Mello Roos are not fully deductible (even though most people mistakenly deduct it).
- The opportunity cost of lost interest assumes a 5% interest rate on the downpayment reduced by 25% for taxes on this earned income.

The actual cost of ownership on a typical \$244,900 property would be approximately \$1,648 per month. Some will be higher and some will be lower, but the calculation above, when adjusted for the specific property details being examined, yields the cost of property ownership.

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Price-to-Rent Ratio

So what general relationships can be inferred from the ownership cost breakdown provided above? First, notice the relationship between monthly cost and price. This property is worth 154 times the monthly cost when you fully examine the cost of ownership. Also, notice the relationship between monthly payment and price. This property is worth 198 times the monthly payment. Common mistake homebuyers make when considering a home purchase is to look at only the payment and ignore the other costs of ownership. Most assume, or have been told by realtors and mortgage brokers trying to make a commission that the tax benefits offset the other costs of ownership. Clearly, this is not the case. The true cost of ownership is about 30% higher than the monthly payment.

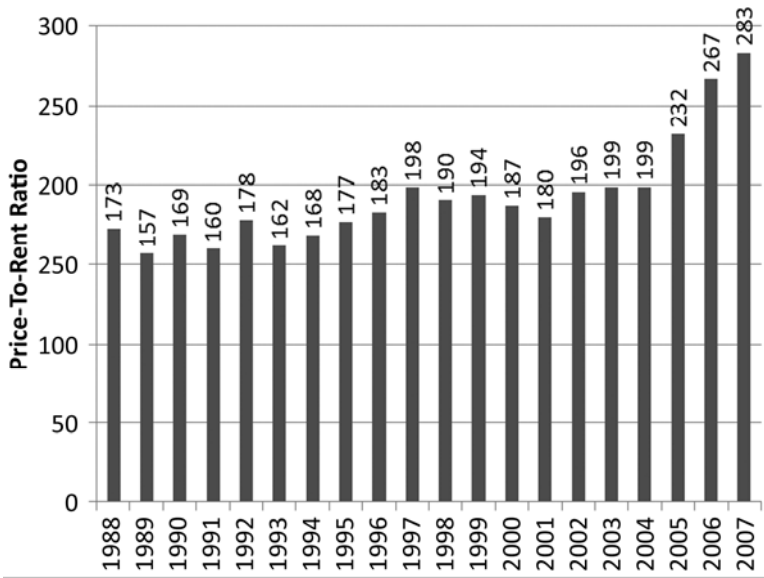
The price-to-cost and price-to-payment relationships become important when one wants to evaluate the relative value of the property compared to market rents. Since housing is a consumer good that can be obtained through either renting or owning, it is rational to compare the costs of each method of possessing property to see which provides a better value to the consumer. Just as stocks have price-to-earnings ratios (PE Ratios) used to establish relative value, houses have a price-to-rent ratio to establish relative value.¹² When a property can be rented for an amount equaling its monthly cost of ownership, it is at rental parity. This is the breakeven point where a consumer would be indifferent in financial terms to own or to rent. Of course there are reasons to own or to rent which are not financial, but from a strictly financial standpoint, this is where the fundamental value lies.

The price-to-rent ratio is very sensitive to changes in interest rates. When interest rates are low, the cost of money is low, so larger sums can be borrowed and vice-versa. Nationally, the price-to-rent ratio increased steadily from 1988 through 2004 in a range from 157 to 199 while mortgage interest rates declined from 10.34% in 1988 to 5.84% in 2004. This increase in price was mostly the result of lowered interest rates as the out-of-pocket expense remained relatively constant. The dramatic increase in prices after 2004 was not supported by incomes or rents, and it is part of the evidence of a real estate bubble.¹³

The price-to-rent ratio is also the basis for a commonly used valuation measure used in the property management business, the Gross Rent Multiplier (GRM). The GRM is a convenient way to evaluate whether or not a rental rate will cover the monthly cost of a particular property. It was developed by landlords seeking a method to quickly evaluate the purchase price of a property to see if it would be a profitable investment. When performing such an evaluation, a cashflow investor will typically look for a GRM near 100 to find a property with positive cashflow. This method can also be easily adapted to calculate the breakeven point where an owner/occupant would break even compared to renting. Considering the full cost of ownership – including those costs often ignored – the price-to-rent ratio and Gross Rent Multiplier is lower than most think. The GRM is a convenient measure of value because it spares you the toil of performing the above, detailed calculation to evaluate a large number of properties.

FUNDAMENTAL VALUATION OF HOUSES

Figure 2 - National Price-to-Rent Ratio, 1988-2007



Source: US Census Bureau

Investment Value

The United States Department of Labor Bureau of Labor Statistics measures the Rent of primary residence (rent) and Owners' equivalent rent of primary residence (rental equivalence). They make this distinction because a house has both a consumptive purpose and an investment purpose. The consumptive value is measured by rent or rental equivalence. There is legitimate financial reason to pay more than the rental equivalence price. The normal rate of house appreciation – not the unsustainable kind witnessed during the Great Housing Bubble – can provide a return on investment. The source of this added value is the leverage of mortgage financing and the hedge against inflation obtained through a fixed-rate mortgage. The investment premium, which is about 10%, is less than most people think.

The rental equivalence value is the fundamental value of real estate, and it is also its consumptive value. This value can be easily measured as demonstrated in the previous section. There is an independent investment value that can also be measured and added to the consumptive value to arrive at the maximum resale value of the property. Investment value is derived from two sources: the increase in property value through appreciation and the long-term savings over renting caused by inflation. These two components are measured separately to demonstrate how they function and how much each of them is worth.

Since the return on investment generated from residential real estate occurs in the future, a discounted cashflow analysis is required to determine the net present value of the future returns. Calculating net present value sounds com-

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plex, and manually going through the calculations is quite cumbersome, but electronic spreadsheets make this an easy task. The concept is simple: how much money would investors put money in an investment today if they knew the rate of growth and the cash value to be realized in the future. For instance, if investors put \$100 in a bank earning 5% interest, they would have \$105 at the end of the year. Net present value looks at the situation in reverse. If investors knew they would receive \$105 at the end of the year and the market interest rate was 5%, they would be willing to pay \$100 for it today. Similarly, the investment value of residential real estate is the value today of an amount of money to be received in the future either through sale or savings on rent.

Discount Rates

The investment value of a property can only be measured against other investment opportunities available to an investor. If investors can earn 4.5% by investing in government treasuries, they will demand a higher return to invest in an asset as volatile and as illiquid as residential real estate. The rate of return an investor demands is called a “discount rate.” The discount rate is different for each investor as each will have different tolerances for risk. During the Great Housing Bubble discount rates on most asset classes were at historic lows due to excess liquidity in capital markets. The discount rate used in the analysis is the variable with the greatest impact on the investment value. Because of the risks of investing in residential real estate, a strong argument can be made that a low discount rate is unwarranted and investors would typically demand higher rates of return for assuming the inherent risks. A low discount rate exaggerates the investment premium and makes an investment appear more valuable, and a high discount rate underestimates the investment premium and makes an investment appear less valuable.

The US Department of the Treasury sells a product called Treasury Inflation-Protected Securities (TIPS). The principal of a TIPS increases with inflation, and it pays a semi-annual interest payment providing a return on the investment. When a TIPS matures, they buyer paid the adjusted principal or original principal, whichever is greater. This is a risk-free investment guaranteed to grow with the rate of inflation. The rate of interest is very low, but since the principal grows with inflation, it provides a return just over the rate of inflation. Houses have historically appreciated at just over the rate of inflation as well; therefore a risk-free investment in TIPS provides a similar rate of asset appreciation as residential real estate (approximately 4.5%). Despite their similarities, TIPS are a much more desirable investment because the value is not very volatile, and TIPS are much easier and less expensive to buy and sell. Residential real estate values are notoriously volatile, particularly in coastal regions. Houses have high transaction costs, and they can be very difficult to sell in a bear market. It is not appropriate to use a 4.5% rate similar to the yield on TIPS or the rate of appreciation of residential real estate as the discount rate in a proper value analysis.

FUNDAMENTAL VALUATION OF HOUSES

Another convenient discount rate to use when assessing the value of residential real estate is the interest rate on the loan used to acquire the property. Borrowed money costs money in the form of interest payments. A homebuyer can pay down the loan on the property and earn a return on that money equal to the interest on the loan as money not spent. Eliminating interest expense provides a return on investment equal to the interest rate. Interest rates during the Great Housing Bubble on 30-year fixed-rate mortgages dropped below 6%. An argument can be made that 6% is an appropriate discount rate; however, 6% interest rates are near historic lows, and interest rates are likely to be higher in the future. Interest rates stabilized in the mid 80s after the spike of the early 80s to quell inflation. The average contract mortgage interest rate from 1986 to 2007 was 8.0%. If a discount rate matching the loan interest rate is used in a value analysis, it is more appropriate to use 8% than 6%.

Investors in residential real estate (those who invest in rental property to obtain cashflow) typically ignore any resale value appreciation. These investors want to receive cash from rental in excess of the costs of ownership to provide a return on their investment. Despite their different emphasis for achieving a return, the discount rates these investors use may be the most appropriate because it is for the same asset class. Cashflow investors in rental real estate have already discounted for the risks of price volatility and illiquidity. Historically, investors in cashflow producing real estate have demanded returns of near 12%. During the Great Housing bubble, these rates declined to as low as 6% for class "A" apartments in certain California markets.¹⁴ It is likely that discount rates will rise back to their historic norms in the aftermath of the bubble. If a discount rate is used matching that of cashflow investors in residential real estate, a rate of 12% should be used.

Once money is sunk into residential real estate, it can only be extracted through borrowing – which has its own costs – or sale. Money put into residential real estate is money taken away from a competing investment. When buyers are facing a rent versus own decision, they may choose to rent and put their downpayment and investment premium into a completely different asset class with even higher returns. This money could go into high yield bonds, market index funds or mutual funds, commodities, or any of a variety of high-risk, high-return investment vehicles. An argument can be made that the discount rate should approximate the long-term return on high yield alternative investments, perhaps as high as 15% or 18%. Although an individual investor may forego these investment opportunities to purchase residential real estate, it is not appropriate to use discount rates this high because many of these investments are riskier and more volatile than residential real estate.

The discount rate is the most important variable in evaluating the investment value of residential real estate. Arguments can be made for rates as low as 4.5% and as high as 18%. Low discount rates translate to high values, and high rates make for low values. The extremes of this range are not appropriate for use because they represent alternative investments with different risk parameters that are not comparable to residential real estate. The most appropriate discount rates are between 8% and 12% because these represent either credit costs (inter-

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est rates) or the rate used by professional real estate investors. The examples in this section will use these two rates to illustrate the range of values rational investors in residential real estate would use to value an investment premium.

Appreciation and Transaction Fees

The portion of investment value caused by appreciation can only be evaluated by an accurate estimate of appreciation during the ownership period. The general public grossly overestimates the rate of home price appreciation.¹⁵ Historically, houses have appreciated at a rate 0.7% over the long-term level of inflation. From 1983 to 1998, a period of low inflation and declining mortgage interest rates before the Great Housing Bubble, the rate of house price appreciation was 4.5% nationally which was 1.4% over the rate of inflation.¹⁶ Appreciation rates are tied to income and rents because this is the fundamental value of residential real estate.

Profiting from house price appreciation requires getting more money from the sale of a property than was originally paid for it and not having that profit cancelled out by moving costs, transaction fees, and a large spread between the cost of ownership and the cost of rental during the ownership period. Buying and selling residential real estate incurs significant transaction costs that are not reflected in the price. It is quite common for properties to sell for more than their purchase price and still be a loss for the seller. When people purchase residential real estate they pay numerous closing costs including title insurance, recording fees, document stamps and taxes, mortgage application fees, survey fees, inspection fees, appraisal fees, et cetera. These fees often total between 2% and 4% of the purchase price not including any prepaid interest points on the mortgage. When people go to sell residential real estate they generally go to real estate broker who will charge them a 6% commission. There has been an increasing popularity in the use of discount brokers, but the National Association of Realtors has done a remarkable job of keeping brokerage commissions at 6% despite market pressures to lower them. These transaction costs are part of every residential real estate transaction, and they take a substantial portion of the profit on properties with short holding periods, and if the holding period is not long enough, transaction fees create losses.

The negotiating abilities of buyers and sellers and the overall market environment greatly impact the profits from real estate. Sellers almost universally believe their properties are worth more than the market will bear. People become emotionally attached to their houses, and because it is very valuable to them, they assume it is just as valuable to a person who is not attached to the property. Sellers always hope to find the buyer who will appreciate their home as much as they do and thereby pay top dollar for it. The vast majority of homeowners have unrealistic expectations of appreciation. The combination of emotional attachment and unrealistic appreciation expectations cause sellers to believe their house is more valuable than it is, and when it comes time to sell, they price it accordingly.

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Sellers usually are forced to discount a property from their perceived value in order to sell it, except in raging bull markets, sellers can sometimes get more than their asking price. In bear markets, they may have to discount the property significantly in order to sell it. Bear markets are the most difficult because sellers have difficulty lowering their prices, particularly if they must sell at a loss.¹⁷ Sometimes the difficulty in lowering price is caused by the amount of debt on the property, and sometimes it is caused by seller's emotional issues. No matter the cause, seller's aversion to lowering asking price often results in a failure to sell the property. Since this process of discounting to sell is already reflected in the historic appreciation rate, no further adjustment is required to account for it.

The key variables for the calculation of the portion of investment value due to appreciation are the rate of appreciation, the investment discount rate and the transaction fees. In the calculations that follows the rate of appreciation is 4.5%, the discount rate is 8%, and transaction costs are 2% for the purchase and 6% for the sale. There is a 20% downpayment, and the loan is assumed to be an interest only to avoid the complications of a decreasing loan balance in the calculation and isolate the appreciation premium.

Due to the high transaction costs, the property does not reach breakeven until two full years of ownership. In a discounted cashflow basis, the property does not break even until after 4 full years of ownership. It is these high transaction costs that compel many with short-term housing needs to rent rather than own. Assuming an 8% discount rate and a term of ownership of 10 years or more, there is a premium for ownership of approximately 10%. This means the owner could pay up to 10% over the rental equivalent value and still obtain an 8% return on their money – assuming they can sell it for 10% over rental equivalent as well.

There is a tendency in the general public to assume the leverage of real estate provides excessive returns. It does magnify the appreciation, but since the historic and sustainable rate of appreciation is a low 4.5%, the leverage is applied to a small growth rate resulting in less than stellar investment returns. In the previous examples, if the downpayment is lowered to 10%, the investment premium at an 8% discount rate rises to 15%, and with a 12% discount rate, there are some ownership periods justifying a premium. If the downpayment is dropped to 1%, the ownership premium rises as high as 20%. At its most extreme with 100% financing, any positive return becomes infinite because the investor has no cash investment. Ownership premiums of 10% to 20% sound large, but in coastal markets during the Great Housing Bubble, buyers were paying ownership premiums in excess of 100%. There is no fundamental valuation justification for these price premiums, only rationalizations and hopes that a greater fool will appear and pay continually higher prices, or in the case of 100% financing speculation, that losses can be passed on to a lender if market prices decline.

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Table 2 - Appreciation Premium and Holding Period using an 8% Discount Rate

\$200,000 House Price
 \$40,000 Downpayment
 \$4,000 Closing Costs at 2%
 4.5% Rate of Appreciation
 8.0% Discount Rate

Year	Resale Value	Selling Fees at 6%	Revenue From Sale	Seller Cash at Closing	Profit or (Loss)	Net Present Value	% of Home Value
0	\$200,000	\$12,000	\$188,000	\$28,000	(\$16,000)	(\$16,000)	-8.0%
1	\$209,000	\$12,540	\$196,460	\$36,460	(\$7,540)	(\$9,482)	-4.7%
2	\$218,405	\$13,104	\$205,301	\$45,301	\$1,301	(\$4,780)	-2.4%
3	\$228,233	\$13,694	\$214,539	\$54,539	\$10,539	(\$653)	-0.3%
4	\$238,504	\$14,310	\$224,193	\$64,193	\$20,193	\$2,948	1.5%
5	\$249,236	\$14,954	\$234,282	\$74,282	\$30,282	\$6,070	3.0%
6	\$260,452	\$15,627	\$244,825	\$84,825	\$40,825	\$8,754	4.4%
7	\$272,172	\$16,330	\$255,842	\$95,842	\$51,842	\$11,040	5.5%
8	\$284,420	\$17,065	\$267,355	\$107,355	\$63,355	\$12,963	6.5%
9	\$297,219	\$17,833	\$279,386	\$119,386	\$75,386	\$14,558	7.3%
10	\$310,594	\$18,636	\$291,958	\$131,958	\$87,958	\$15,854	7.9%
11	\$324,571	\$19,474	\$305,096	\$145,096	\$101,096	\$16,879	8.4%
12	\$339,176	\$20,351	\$318,826	\$158,826	\$114,826	\$17,659	8.8%
13	\$354,439	\$21,266	\$333,173	\$173,173	\$129,173	\$18,218	9.1%
14	\$370,389	\$22,223	\$348,166	\$188,166	\$144,166	\$18,577	9.3%
15	\$387,056	\$23,223	\$363,833	\$203,833	\$159,833	\$18,756	9.4%
16	\$404,474	\$24,268	\$380,206	\$220,206	\$176,206	\$18,774	9.4%
17	\$422,675	\$25,361	\$397,315	\$237,315	\$193,315	\$18,647	9.3%
18	\$441,696	\$26,502	\$415,194	\$255,194	\$211,194	\$18,391	9.2%
19	\$461,572	\$27,694	\$433,878	\$273,878	\$229,878	\$18,019	9.0%
20	\$482,343	\$28,941	\$453,402	\$293,402	\$249,402	\$17,545	8.8%
21	\$504,048	\$30,243	\$473,805	\$313,805	\$269,805	\$16,981	8.5%
22	\$526,730	\$31,604	\$495,127	\$335,127	\$291,127	\$16,336	8.2%
23	\$550,433	\$33,026	\$517,407	\$357,407	\$313,407	\$15,622	7.8%
24	\$575,203	\$34,512	\$540,691	\$380,691	\$336,691	\$14,847	7.4%
25	\$601,087	\$36,065	\$565,022	\$405,022	\$361,022	\$14,019	7.0%
26	\$628,136	\$37,688	\$590,448	\$430,448	\$386,448	\$13,146	6.6%
27	\$656,402	\$39,384	\$617,018	\$457,018	\$413,018	\$12,234	6.1%
28	\$685,940	\$41,156	\$644,784	\$484,784	\$440,784	\$11,290	5.6%
29	\$716,807	\$43,008	\$673,799	\$513,799	\$469,799	\$10,319	5.2%
30	\$749,064	\$44,944	\$704,120	\$544,120	\$500,120	\$9,327	4.7%

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Larger discount rates eliminate the appreciation premium on residential real estate. The money tied up in a 20% downpayment on residential real estate appreciating at 4.5% provides a rate of return less than 12%; therefore when the gains from appreciation are discounted at 12%, the net present value never goes positive. When investors demand returns equal to or greater than 12%, there is no investment value from appreciation in residential real estate.

Table 3 - Appreciation Premium and Holding Period using a 12% Discount Rate

\$200,000 House Price
 \$40,000 Downpayment
 \$4,000 Closing Costs at 2%
 4.5% Rate of Appreciation
 12.0% Discount Rate

Year	Resale Value	Sales Fees at 6%	Revenue From Sale	Cash Back at Closing	Profit or (Loss)	Net Present Value	% of Home Value
0	\$200,000	\$12,000	\$188,000	\$28,000	(\$16,000)	(\$16,000)	-8.0%
1	\$209,000	\$12,540	\$196,460	\$36,460	(\$7,540)	(\$10,220)	-5.1%
2	\$218,405	\$13,104	\$205,301	\$45,301	\$1,301	(\$7,042)	-3.5%
3	\$228,233	\$13,694	\$214,539	\$54,539	\$10,539	(\$4,625)	-2.3%
4	\$238,504	\$14,310	\$224,193	\$64,193	\$20,193	(\$2,861)	-1.4%
5	\$249,236	\$14,954	\$234,282	\$74,282	\$30,282	(\$1,652)	-0.8%
6	\$260,452	\$15,627	\$244,825	\$84,825	\$40,825	(\$915)	-0.5%
7	\$272,172	\$16,330	\$255,842	\$95,842	\$51,842	(\$577)	-0.3%
8	\$284,420	\$17,065	\$267,355	\$107,355	\$63,355	(\$572)	-0.3%
9	\$297,219	\$17,833	\$279,386	\$119,386	\$75,386	(\$847)	-0.4%
10	\$310,594	\$18,636	\$291,958	\$131,958	\$87,958	(\$1,351)	-0.7%
11	\$324,571	\$19,474	\$305,096	\$145,096	\$101,096	(\$2,043)	-1.0%
12	\$339,176	\$20,351	\$318,826	\$158,826	\$114,826	(\$2,887)	-1.4%
13	\$354,439	\$21,266	\$333,173	\$173,173	\$129,173	(\$3,851)	-1.9%
14	\$370,389	\$22,223	\$348,166	\$188,166	\$144,166	(\$4,909)	-2.5%
15	\$387,056	\$23,223	\$363,833	\$203,833	\$159,833	(\$6,036)	-3.0%
16	\$404,474	\$24,268	\$380,206	\$220,206	\$176,206	(\$7,214)	-3.6%
17	\$422,675	\$25,361	\$397,315	\$237,315	\$193,315	(\$8,425)	-4.2%
18	\$441,696	\$26,502	\$415,194	\$255,194	\$211,194	(\$9,656)	-4.8%
19	\$461,572	\$27,694	\$433,878	\$273,878	\$229,878	(\$10,894)	-5.4%
20	\$482,343	\$28,941	\$453,402	\$293,402	\$249,402	(\$12,129)	-6.1%
21	\$504,048	\$30,243	\$473,805	\$313,805	\$269,805	(\$13,352)	-6.7%
22	\$526,730	\$31,604	\$495,127	\$335,127	\$291,127	(\$14,557)	-7.3%
23	\$550,433	\$33,026	\$517,407	\$357,407	\$313,407	(\$15,739)	-7.9%
24	\$575,203	\$34,512	\$540,691	\$380,691	\$336,691	(\$16,892)	-8.4%
25	\$601,087	\$36,065	\$565,022	\$405,022	\$361,022	(\$18,014)	-9.0%
26	\$628,136	\$37,688	\$590,448	\$430,448	\$386,448	(\$19,100)	-9.6%
27	\$656,402	\$39,384	\$617,018	\$457,018	\$413,018	(\$20,151)	-10.1%
28	\$685,940	\$41,156	\$644,784	\$484,784	\$440,784	(\$21,163)	-10.6%
29	\$716,807	\$43,008	\$673,799	\$513,799	\$469,799	(\$22,136)	-11.1%
30	\$749,064	\$44,944	\$704,120	\$544,120	\$500,120	(\$23,070)	-11.5%

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Inflation Premium

Table 4 - Inflation Premium from Rental Savings

\$200,000 House Price
 160 Price to Rent Ratio
 3.5% Rate of Rent Increase
 8.0% Discount Rate

Year	Annual Rent	Annual Ownership Cost	Rent Savings	Net Present Value	Percent of Home Value
0	\$15,000	\$15,000	\$0	\$0	0.0%
1	\$15,525	\$15,000	\$525	\$450	0.2%
2	\$16,068	\$15,000	\$1,068	\$1,298	0.6%
3	\$16,631	\$15,000	\$1,631	\$2,497	1.2%
4	\$17,213	\$15,000	\$2,213	\$4,003	2.0%
5	\$17,815	\$15,000	\$2,815	\$5,777	2.9%
6	\$18,439	\$15,000	\$3,439	\$7,784	3.9%
7	\$19,084	\$15,000	\$4,084	\$9,990	5.0%
8	\$19,752	\$15,000	\$4,752	\$12,367	6.2%
9	\$20,443	\$15,000	\$5,443	\$14,889	7.4%
10	\$21,159	\$15,000	\$6,159	\$17,530	8.8%
11	\$21,900	\$15,000	\$6,900	\$20,270	10.1%
12	\$22,666	\$15,000	\$7,666	\$23,089	11.5%
13	\$23,459	\$15,000	\$8,459	\$25,969	13.0%
14	\$24,280	\$15,000	\$9,280	\$28,895	14.4%
15	\$25,130	\$15,000	\$10,130	\$31,851	15.9%
16	\$26,010	\$15,000	\$11,010	\$34,827	17.4%
17	\$26,920	\$15,000	\$11,920	\$37,810	18.9%
18	\$27,862	\$15,000	\$12,862	\$40,790	20.4%
19	\$28,838	\$15,000	\$13,838	\$43,759	21.9%
20	\$29,847	\$15,000	\$14,847	\$46,709	23.4%
21	\$30,891	\$15,000	\$15,891	\$49,632	24.8%
22	\$31,973	\$15,000	\$16,973	\$52,522	26.3%
23	\$33,092	\$15,000	\$18,092	\$55,375	27.7%
24	\$34,250	\$15,000	\$19,250	\$58,186	29.1%
25	\$35,449	\$15,000	\$20,449	\$60,951	30.5%
26	\$36,689	\$15,000	\$21,689	\$63,666	31.8%
27	\$37,974	\$15,000	\$22,974	\$66,329	33.2%
28	\$39,303	\$15,000	\$24,303	\$68,938	34.5%
29	\$40,678	\$15,000	\$25,678	\$71,489	35.7%
30	\$42,102	\$15,000	\$27,102	\$73,983	37.0%

Residential housing does have a cash-saving value, if financed with a fixed rate mortgage. Over time, the growth in income and rents increases the cost of housing for renters. The inflation of housing costs for renters is greatly lessened for homeowners using a fixed-rate mortgage because their housing costs are effectively frozen at the rate of their ongoing mortgage payment. Other costs, such as property taxes, insurance and maintenance do still rise with inflation, but since the mortgage payment is about two-thirds of the cost of ownership, fixing this amount provides a large benefit. Over time, the savings accruing to homeowners from a level housing payment can be quite substantial. Applying the

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same technique of discounted cashflow analysis, this savings over time can be evaluated.

Since the savings grow every year, the value of the inflation premium grows as the term of ownership is extended, and this premium is not as sensitive to changes in the discount rate as is the appreciation premium. The premium accruing from the savings on rent can be substantial, but ownership periods vary, and the national average is less than 7 years; therefore, if a buyer pays this premium up front by paying more than the rental equivalent value, they do not reach breakeven for several years. In the early years of the mortgage, the owner who paid in excess of the rental equivalent value actually falls behind the renter in terms of out-of-pocket cash outlays for housing. Over time, as the renter faces yearly increases in rents, the homeowners will eventually be paying less, and the savings will make up for the earlier period of deficit.

Table 5 - Inflation Premium from Rental Savings with 7 year Ownership Period

	\$200,000	House Price			
	160	Price to Rent Ratio			
	3.5%	Rate of Rent Increase			
	8.0%	Discount Rate			
	11.6%	Ownership Premium			

Year	Annual Rent	Annual Ownership Cost	Rent Savings	Net Present Value	Percent of Home Value
0	\$15,000	\$16,738	(\$1,738)	(\$1,610)	
1	\$15,525	\$16,738	(\$1,213)	(\$2,650)	-1.3%
2	\$16,068	\$16,738	(\$670)	(\$3,182)	-1.6%
3	\$16,631	\$16,738	(\$108)	(\$3,261)	-1.6%
4	\$17,213	\$16,738	\$474	(\$2,938)	-1.5%
5	\$17,815	\$16,738	\$1,077	(\$2,260)	-1.1%
6	\$18,439	\$16,738	\$1,700	(\$1,267)	-0.6%
7	\$19,084	\$16,738	\$2,346	(\$0)	0.0%
8	\$19,752	\$16,738	\$3,014	\$1,508	0.8%
9	\$20,443	\$16,738	\$3,705	\$3,224	1.6%
10	\$21,159	\$16,738	\$4,421	\$5,120	2.6%

The above analysis assumes renters face the full brunt of increasing rental rates. For many apartment dwellers, this is true as landlords will raise rents every year knowing that if a renter moves out, there will be another to replace them at market rates. The circumstance is a bit different for private landlords. Most private individuals that rent out investment properties are far more concerned with the loss of cashflow resulting from the property sitting vacant than they are about maximizing income through raising rents each year. Most long-term landlords have conventional, fixed-rate financing on their properties, and because their costs are not increasing, and because they do not want to endure vacancy loss, they seldom raise rents. When they do, they do not tend to raise them to market for fear of the tenant moving out. The result of this is that housing costs are somewhat fixed for long-term renters who rent from private individuals. These renters get to enjoy almost the same benefits of fixed housing costs as homeowners. The implication of this landlord behavior is that home-

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owners do not necessarily see the dramatic savings over renting suggested in the calculation of the inflation premium.

The investment value for home ownership is a combination of the appreciation value and the inflation value. Both accrue to homeowners for different reasons. The appreciation value is caused by the general tendency of house prices to increase over time with the inflation of income and rents. The inflation value is a cashflow savings accruing to owners as rental rates increase while their cost of ownership is fixed. There are many variables that influence the investment value, and much depends on the assumptions behind the variables selected. Based on a typical ownership period of 7 years, and an investment environment adhering to historic norms, residential real estate has an investment value of approximately 10% of the fundamental value of the property. Buyers who pay this 10% premium will see a return on their investment if they stay in the property long enough. Buyers who pay premiums in excess of this amount or who own the property for shorter timeframes do not see a return on their investment. Buyers in the Great Housing Bubble paid well in excess of the fundamental and investment value of real estate primarily due to unrealistic expectations for appreciation. If a buyer believes properties are going to appreciate at a 15% rate every year forever, paying a 100% premium over fundamental value is justified; however, since house prices cannot rise at that rate in a sustained manner, such premiums are ill advised.

Renting Versus Owning

Renting versus owning is both an intellectual, financial decision and an emotional decision. The financial decision is first and foremost an analysis of the comparative cost of renting versus owning. The cost of a rental can be determined fairly easily as there are usually a number of comparable properties on the market to establish a realistic rental rate for any given property. Of course, it is easy to justify in one's mind a comparative rent that is higher than the market will bear. A person who is "in love" with a house will almost certainly imagine it will command a rent amount that exceeds the reality of the market. It is probably a good idea to take 5% to 10% off comparable rental rates on properties offered on the market. Once a realistic comparative rental rate is established, and a realistic evaluation of the true costs of ownership as outlined above is complete, a simple comparison of the two figures will reveal if a property is overvalued, undervalued or at parity.

Some people expend a great deal of effort evaluating the costs of ownership to determine if it is a correct decision, but many people do not. Some people make the decision to purchase the most expensive asset they will ever own with no analysis at all. The decision to buy a house is primarily an emotional one. Even those who go through all the analysis generally only do so to provide rationalizations for their emotional decision. During price rallies, greed becomes a powerful emotion motivating people to fudge any financial analysis performed. Another factor often called the "nesting instinct" causes both men and women to want a place to call their own, particularly when there are children in the family

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or on the way. There is nothing wrong with making decisions that are heavily influenced by emotions. Most people pick a spouse this way. The real challenge is to have the emotions and the intellect working together to make a decision that is both fiscally sound and emotionally satisfying. Of course, this is easier said than done.

Summary

The fundamental value of all housing prices is equivalent rents because rental is a direct proxy for ownership. Unfortunately, during the Great Housing Bubble, appraisers used comparative-sales prices to establish value rather than an approach using rental income. This allowed prices to detach from fundamental valuations due to irrational exuberance. To determine the value of a property, one must evaluate the local rental market to establish comparable rental rates, and one must carefully evaluate the true, total cost of ownership. A potential buyer can determine the maximum amount that should be paid for a property by manipulating the loan and downpayment amounts so the monthly cost of ownership matches the cost of a rental. Of course, in the real world most people do not bother with this type of analysis, but then, in the real world, many people mistakenly overpay for residential real estate.

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End Notes

¹ "Out, out, brief candle! Life's but a walking shadow, a poor player that struts and frets his hour upon the stage and then is heard no more: it is a tale told by an idiot, full of sound and fury, signifying nothing." Macbeth Quote (Act V, Scene V).(Shakespeare, 1603)

² Partial list of prominent real estate bubble and related blogs:

The Irvine Housing Blog – <http://www.irvinehousingblog.com/>

Patrick.net – <http://patrick.net/housing/crash.html>

The Real Estate Bubble Blog – <http://www.thehousingbubbleblog.com/index.html>

The House Bubble – <http://housebubble.com/>

Implode-o-meter – <http://ml-implode.com/>

Bubble Markets Inventory Tracking – <http://bubbletracking.blogspot.com/>

Housing Doom – <http://housingdoom.com/>

Southern California Real Estate Bubble Crash – <http://www.socalbubble.com/>

Calculated Risk – <http://calculatedrisk.blogspot.com/>

Housing Panic – <http://housingpanic.blogspot.com/>

Professor Piggington – <http://piggington.com/>

Dr. Housing Bubble – <http://drhousingbubble.blogspot.com/>

Bubble Meter – <http://bubblemeter.blogspot.com/>

Priced Out Forever – <http://pricedoutforever.com/>

The Bursting Bubble – <http://www.theburstingbubble.com/>

The Real Estate Bloggers – <http://www.therealestatebloggers.com/>

Housing Bubble Casualty – <http://www.housingbubblecasualty.com/>

Housing Bubble Bust – <http://www.housingbubblebust.com/>

Real Estate Realist – <http://www.realestaterealist.com/>

Housing Wire – <http://www.housingwire.com/>

Sacramento Area Flippers In Trouble – <http://flippersintrouble.blogspot.com/>

Seattle Bubble – <http://seattlebubble.com/blog/>

Westside Bubble Blog – <http://westside-bubble.blogspot.com/>

Marin Real Estate Bubble – <http://marinrealestatebubble.blogspot.com/>

Sonoma Housing Bubble – <http://sonomahousingbubble.blogspot.com/>

New Jersey Real Estate Report – <http://njrereport.com/>

New York City Housing Bubble – <http://nychousingbubble.blogspot.com/>

THE GREAT HOUSING BUBBLE

- ³ Much of the author's personal study of Buddhism comes from the writings and recordings of the author Jack Kornfield (Kornfield, *The Roots of Buddhist Psychology*, 1996), (Kornfield, *The Inner Art of Meditation*, 1993), (Kornfield, *A Path with Heart: A Guide Through the Perils and Promises of Spiritual Life*, 1993), (Kornfield, *After the Ecstasy, the Laundry: How the Heart Grows Wise on the Spiritual Path*, 2000). The audio recordings of the *Roots of Buddhist Psychology* have been particularly influential.
- ⁴ The stock market experienced a 500% gain in a five year period before its infamous crash. Much of the reason for the wild increase in pricing was very low margin requirements. People were allowed to buy 10 times as much stock as they had money due to 10:1 margin trading. This expansion of credit through the broker's margin is what drove prices up, and when prices started to fall, margin calls cascaded through the market and resulted in a crash.
- ⁵ There are a number of research papers discussing the pros and cons of various methodologies for calculating equivalent rent. Hedonic Estimates of the Cost of Housing Services: Rental and Owner-Occupied Units (Crone & Nakamura, 2004) Treatment of Owner-Occupied Housing in the CPI (Poole, Ptacek, & Verbrugge, 2005).
- ⁶ Robert Shiller noted "that real owners' equivalent rent and real building costs track each other fairly well, as one might expect. But neither of them tracks real home prices at all, suggesting that some other factor – I will argue market psychology – plays an important role in determining home prices."
- ⁷ Depending on the market, rental rates grow at a rate around 1% over the rate of inflation. Rental rates are closely aligned with income growth, and in markets where income growth is strong, rental rates increase at approximately the same rate.
- ⁸ John Krainer, chief economist for the Federal Reserve Bank of San Francisco, pointed out in 2004 "The price-rent ratio for the U.S. and many regional markets is now much higher than its historical average value." (Krainer & Wei, *House Prices and Fundamental Value*, 2004) This is one of the first papers (other than those by Robert Shiller) to recognize the data was pointing to a housing bubble.
- ⁹ The full text of the Proposition 13 law can be found at http://www.leginfo.ca.gov/const/article_13A
- ¹⁰ In California, the first half of regular secured property tax bills are due November 1st, and delinquent after December 10th; the second half are due February 1st, and delinquent after April 10th each year. If the delinquent date falls on a Saturday, Sunday, or government holiday, then the due date is the following business day.
- ¹¹ All information regarding tax rates comes from the Internal Revenue Service. <http://www.irs.gov/>

END NOTES

- ¹² There are many studies that have mentioned the use of price-to-rent ratios as being similar to price-to-earnings ratios of stocks. Some of the studies are good, and some are not. Bubble, bubble, toil and trouble is of the latter variety (Haines & Rosen, 2006). Typical of these studies is that they will look at the data, see the obvious signs of a bubble, and proceed to dismiss the obvious as something else. Even though the national data for price-to-rent clearly shows a bubble, even in their own graphs, the authors dismiss the idea because “all real estate is local.” The paper was written for the Federal Reserve, but it could have been written for the National Association of Realtors. Another silly statement they make is “Thus, what appears to be a bubble in some markets might just be a reflection of normally high volatility in those markets.” This is like saying “what appears to be a bubble isn’t a bubble because bubbles are normal in these markets.” When the authors can look right at the data and not understand what they are seeing, there is little hope the paper will draw the right conclusions.
- ¹³ The study *A Trend and Variance Decomposition of the Rent-Price Ratio in Housing Markets* by Sean D. Campbell, Morris A. Davis, Joshua Gallin, and Robert F. Martin (Campbell, Davis, Gallin, & Martin, 2005) uses method of estimating the investment premium people pay for homes in bubble markets based on the expectation of future rental growth. This entire approach is flawed as it assumes people are investing based on cash flows. This would be a rational approach, but most people who buy in financial manias know little or nothing about cashflow or how to value it. The real reason they are “investing” is to capture speculative price changes. Trying to determine a fundamental valuation based on cashflow is an interesting exercise in math and statistics, but it completely fails to capture the real motivation behind buyers in the marketplace.
- ¹⁴ In the article “Are CAP Rates Still a Valid Indicator of Value?” (Hockley, 2005), the author noted “On the West Coast, California investors have driven the price of investments to levels never before seen. California CAP rates are hovering between 4 percent and 7 percent, even with no or low increases in rent. Investors are betting on appreciation gains.”
- ¹⁵ Robert Shiller has been studying homebuyer behavior since the late 1980s. His surveys have consistently show the general public believes houses will appreciate in value at more than double their recorded historical rate.
- ¹⁶ The 1.4% rate of house price appreciation over the rate of inflation is based on the US Census Bureau measurement of house price and the US Department of Labor’s Consumer Price Index.
- ¹⁷ In their paper *Loss Aversion in Riskless Choice: A Reference-Dependent Model* (Tversky & Kahneman, 1991), the authors discuss the premise that losses and disadvantages have greater impact on preferences than gains and advantages. This explains much of the unusual behavior of sellers in price declines.

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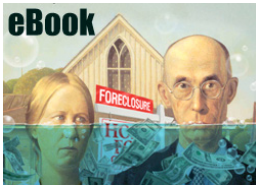
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Why Did House Prices Fall?

Are you thinking you might buy a house?

Are you trying to sell a house?

Are you a nervous homeowner worrying about declining home values?

Are you curious as to how and why real estate prices dropped?

The Great Housing Bubble has the answers!

What experts are saying:

“A very well-written and thoughtful analysis of what went wrong in the housing world and how we can avoid this problem in the future. Lawrence Roberts has a great understanding of the subject and does an excellent job communicating his ideas to the reader.”

James A. Randel, bestselling author of *Confessions of a Real Estate Entrepreneur*

Are you thinking about buying a house?

Many people will be active buyers despite the declining home prices. If you are considering buying during this time, there are many things you will need to know to make sure you do not become one of the casualties of the housing bubble.

How much are houses really worth?

Do you know how to evaluate the fundamental value of a piece of real estate? If you do not, you will probably over pay. Many people think comparative sales prices indicate value, but this incorrect. (The Fundamental Valuation of Houses, p. 29)

Do you understand complicated loan programs?

Many people think they have a grasp of how these exotic new loan programs work. Most people do not, and nobody should really be using them. (Conservative House Financing, p. 8)

How do you negotiate during a price decline?

Most buyers fail to take advantage of the powerful negotiating position they have during a price decline. There are specific techniques one can use to pay the lowest possible price. (Buying and Selling During a Decline, p. 163)

Buy this book now!

THE GREAT HOUSING BUBBLE

Are you buying a house as an investment?

Many people view residential real estate as a good investment, particularly during the real estate bubble. Historically, it has not been. The Great Housing Bubble tells the truth about residential real estate—the truth your realtor does not want you to know.

How do you make money in real estate?

Making money in real estate is about building equity. Most people believe you simply buy and equity appears by magic. It does not work that way. What exactly is equity? And how do you build it? (Equity Components, p. 19)

Why do most speculators lose money?

Most people who speculate in financial markets lose money. Why is that? (Speculation versus Investment, p. 99)

Are houses really a good investment?

Residential real estate has historically underperformed most other asset classes. The period of the Great Housing Bubble was a notable exception to the rule. (Renting versus Owning, p. 46)

What is the investment value of real estate?

There is an investment value to real estate. How is it calculated? What is it really worth? (Investment Value, p. 37)

What readers are saying:

“The detailed investigative work and deep market analysis is very insightful and thought provoking.”

Ben in Seattle

“I feel I have been given a first-rate education in real estate analysis and valuation from this book. I have continued to rent instead of purchase real estate in Irvine due, in large part, to data presented in this book.”

Jaysen in Irvine

What are you risking if you do not buy this book?

This book can save you from financial ruin and all the personal hardships that entails. **Many people lost their wealth, their homes, their credit and their good health during The Great Housing Bubble because they did not have the information presented in this book.** *You do not want to be one of them.* It is that important.

Extreme financial hardship

Residential real estate is generally an extremely leveraged financial asset. A 20% decline in house prices can completely wipe out your downpayment or any

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accumulated equity in a property. Buying at the wrong time and paying too much can have devastating financial consequences for you.

Foreclosure/ short sale

Many people who overborrow and overpay end up losing the property in a foreclosure or short-sale. Being forced to move out of your home is never a pleasant experience.

Bankruptcy / bad credit

With the foreclosure or short-sale often comes a personal bankruptcy. If you manage to avoid bankruptcy, your credit will still be damaged for years.

Stress and health problems

Seeing hundreds of thousands of dollars of your net worth evaporate, losing your home, and being forced into bankruptcy is a very stressful set of circumstances. Many people who go through this experience have major health problems.

Can you afford to risk this?

Do you want to risk these problems? Are you willing to face these dangers without knowing what you can do to protect yourself? Your hard earned money, your credit, and your health are far too valuable to put at risk.

You need to buy this book to prepare you for the dangers out there.

What readers are saying:

“I thought I knew real estate before I read this book. I was wrong. This book opened my eyes to the truth about the real estate cycle. I was thinking of buying and investment property because prices had dropped. It wasn't until I read this book that I realized I was speculating and not investing. I almost made a very big mistake.”

Janet in Irvine

“This helped me avoid buying at the peak and losing hundreds of thousands of dollars. It saved me a great deal of grief and money. Even now, with California housing prices down over 30%, declining prices could still quickly consume your downpayment and put you ‘under water’, unable to sell your house for more than the loan value.

An excellent read, and an important one.”

Brian in Malibu

Buy this book now!

THE GREAT HOUSING BUBBLE

Do you own your house? How did the housing bubble impact you?

Almost 70% of American households own their houses. Even those who do not plan to buy or sell are impacted by the housing bubble. Everyone who owns a house saw a dramatic change in their net worth as house prices rose then fell. Some people refinanced and increased their mortgage balances to obtain the “free money” accumulating in their homes. Some people stopped saving for retirement and other purposes and became completely dependent upon their houses for their financial future. Every owner of real estate was impacted by the bubble.

How much value is your house going to lose?

The most pressing concern of most homeowners is how much is the resale price of their property going to decline before prices stabilize. (Future House Prices, p. 130)

Why did your house lose value?

Many people are very interested in why house prices went down at all. (The Housing Bubble, p. 71)

What readers are saying:

“I loved reading this book and learning about the financial impact of this whole mess that we’re in right now.”

Joe in Austin

“I had no idea my neighbors and the lenders were so crazy. The bubble wasn’t too mad there, so I really didn’t understand what all the fuss was about until I read this book. Wow! I can’t believe what was going on.”

Gale in Nashville

Do you understand the terms of your mortgage?

Many people who took out mortgages during the bubble did not use conventional, 30-year fixed-rate financing. Many of these borrowers utilized new, innovative loan programs that very few understand. (Conservative House Financing, p. 8)

Why did the economy suffer so much?

The deflation of the housing bubble brought down the entire economy and nearly caused the collapse of our entire financial system. (Doomsday Scenario, p. 159; Lingering Problems, p. 161)

Buy this book now!

THE GREAT HOUSING BUBBLE

What every seller needs to know about the housing bubble?

The tactics sellers must use to sell a home have changed radically since the market topped and prices began to fall. Those nimble sellers who are able to make the proper adjustments will sell their houses. Those that do not adapt will fail to sell their homes and lose much more money.

What readers are saying:

“I was not able to sell my house, and I was getting very frustrated. When I read this book, I realized what I really needed to do. The truth helped me overcome my denial, and I sold my house in three weeks – once I did what was necessary.”

Kurt in San Clemente

“My house was on the market for months with no offers. I paid for professional staging, and I even bought one of those crazy St. Joseph statues and buried it in the yard. Nothing. Once I read this book, I realized why the house was not selling. I didn’t want to follow the author’s advice, but it was the only way to sell my home.”

Josue in Sacramento

What do you have to do to sell your house?

What is the number 1 thing a seller must do to sell their property in a declining market? (Buying and Selling During a Decline, p. 163)

What if you owe more than your house is worth?

Many people have loans balances greater than the resale value of their property. What are their options? (Selling for Less, p. 164)

Is the government really trying to save the housing market?

Government policy during the housing bubble was not intended to save the housing market; it was intended to save the banks. Home owners are kept in a state of denial and indentured servitude to their lending overlords. (Bailouts and False Hopes, p. 122)

What are some of the things will you learn in this book?

The Great Housing Bubble is an exhaustive analysis of the issues related to this dark chapter in American history. Even though the decline is nowhere near over in 2008, already the Great Housing Bubble witnessed the largest decline in house prices since the Great Depression. Below is a sample of the types of questions this book answers.

Buy this book now!

THE GREAT HOUSING BUBBLE

Why did house prices go up so much so fast?

With lenders quickly increasing the amounts they were willing to lend, borrowers were able to increase their bids and drive prices skyward. (The Credit Bubble, p. 54)

Why did people borrow so much money?

People borrowed so much because they could, and since prices were going up so fast, most wanted to. Lenders made huge sums available to almost anyone with a pulse on payment schedules they could afford—temporarily. (Negative Amortization Mortgages, p. 13; Stated Income Loans, p. 16)

How crazy were the lenders?

Everyone thought house prices would go up forever, so few thought there was any risk of loss. (What is a Bubble, p. 1; The Fallacy of Financial Innovation, p. 26)

Why did we have a credit crunch?

People stopped paying back their loans, so lenders stopped lending money. (The Credit Crunch, p. 93)

What readers are saying:

“Lawrence Roberts has his finger on the pulse of the housing bubble – the bursting forehead vein, I should say!”

LC in Irvine

“Lawrence Roberts is one of the best that I have seen at breaking down the complicated and confusing mortgage and real estate industry so that novices like me can understand.”

Alan in Toledo

Why did we have so many foreclosures?

People stopped making payments because they borrowed too much money and they could not afford to pay it back. (Types of Loans, p. 11; The Bubble Bursts, p. 87)

How does the secondary mortgage market work?

The activity in the secondary mortgage market provided the air that inflated the housing bubble. (Structured Finance, p. 57)

Why is real estate cyclical, and what are the stages of the cycle?

Real estate prices rise and fall due to market psychology and credit availability. (Visualizing the Bubble, p.67; Psychological Stages of a Bubble, p. 111)

Buy this book now!

THE GREAT HOUSING BUBBLE

Are most home buyers speculators?

Many homebuyers in volatile real estate markets are motivated by profit. This motivation causes a great deal of property speculation. (Trading Houses, p. 104)

How did the bubble change people's lives?

The housing bubble made and lost fortunes for its many participants. Those that lost faced both economic and personal problems. (Economic Problems, p. 173; Personal Problems, p. 175)

How do we stop future housing bubbles?

It is possible to prevent future housing bubbles. It requires a combination of market reform and government intervention. (Preventing the Next Housing Bubble, p. 173)

What experts are saying:

“Lawrence Roberts was completely right.”

“Lawrence Roberts is THE real estate guru... one of the few who knew it was coming.”

“He’s the guy that predicted the crash and year and a half before it happened.”

Johnny Wendell – KTLK 1150 AM

Buy this book now!