

Objectivity, Economic Bubbles, and the 1998-2006 Housing Market

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Abstract

The primary aim of this paper is to state – by providing a concise and objective interpretation of *economic bubbles*, and by thoroughly explaining the real-estate market behavior and its causes – why the 1998-2006 housing market was an actual exemplification of an *economic bubble*. Within the years of 1998 and 2006, the housing market in the United States exhibited an anomalous behavior that called for the attention of many economists. The rapid growth and sudden collapse of housing prices embodied the same pattern observed in *economic bubbles* – such as the Dutch *tulipmania* (1630's) and the *dot-com bubble* (1990's). However, the ability to label this recent real-estate behavior as an *economic bubble* rests upon more factors than just abrupt price changes; and this is because of the various interpretations of *economic bubbles* and *market fundamentals* that there are. Thus, there are constant disagreements regarding the recent housing market as an *economic bubble* – some economists argue it was and others argue that it was not. In some instances, analysts limit themselves when trying to interpret the housing market because they regard only those factors that seem most evident. But when incorporating other components, it is possible to develop more objective and congruent conclusions.

Introduction

Did the 1998-2006 real-estate market embody an economic bubble? The recent housing market behavior has raised controversy among economists and has drawn a borderline between those who think that there was a bubble in this market and those who do not. Some scholars claim to recognize market fundamentals regarding the unusual increase in the rate of appreciation of house prices in the United States between the years of 1998 and 2006; therefore, they argue that this market was not a bubble. But there are also those who believe that the housing market embodied a bubble because house prices and fundamentals did not move accordingly.

The debate between both sides seems to be caused, partly, because of the large variety of interpretations that there is about the term bubble, and because different economists have different perceptions about the factors that should be considered as the primary drivers of the housing market. For this reason, this paper seeks to look at the most predominant and consistent characteristics of what economists understand as bubble, and based on this analysis, generate and objective interpretation of the concept through which the housing market can be evaluated. The way in which analysts have regarded the 1998-2006 real-estate market will also be addressed in order to present a basis of what is often looked at when studying this market. Finally, through the evaluation of data pertaining the fundamentals through which the housing sector should be explained, this paper will present why these findings demonstrate that the 1998-2006 housing market in the United States embodied an *economic bubble*.

The Many Masks of *Economic Bubbles*

The ability to argue that there is an economic *bubble* in some market rests upon the perceived interpretation of the concept behind the term *bubble*. Because of this, bubbles have

taken a variety of forms since many different economists have presented highly contrasting explanations about this concept.

An early source, *The Dictionary of Political Economy* (1926), illustrates Robert H. Palgrave's definition of bubble as "any unsound commercial undertaking accompanied by a high degree of speculation." This definition is then followed by some examples of famous historic bubbles – such as the Tulipmania, the Mississippi Bubble, and the South Sea Bubble. However, Palgrave's definition does not provide very many characteristics for which some "commercial undertaking" should be considered a bubble; which, would naturally allow economists to fill in the gaps and develop their own – more specific – interpretations. But sometimes these – more specific – interpretations can go too far; to the point where the initial meaning is distorted, or lost.

Peter M. Garber, in his paper "Famous First Bubbles" (1990), starts out associating bubbles with acts of irrationality. He claims that "we must exhaust all reasonable economic explanations... before clutching the 'bubble' last resort." And even though he does not provide a palpable interpretation of bubbles, he shows to clearly equate the term with "a speculative event to the inexplicable." Then he suggests that the "perception of an increased probability of large returns" should be considered a "reasonable or market fundamental explanation" despite the fact that he also acknowledges that this perception can be triggered by misleading or fraudulent information. With his interpretation of bubbles, Garber is then able to argue that three events that have been historically considered as bubbles – the Tulipmania, the Mississippi Bubble, and the South Sea Bubble – actually do not qualify as such.

However, Garber's new "market fundamental" contradicts Palgrave's earlier definition of bubble. In the *Dictionary of Finance and Investment Terms* (2006), by John Downes and Jordan

Elliot Goodman, the entry *speculation* is defined as “assumption of risk in anticipation of gain but recognizing a higher than average possibility of loss.” Since the “perception of an increased probability of high returns” in any given market can be based on – either accurate or – erroneous data and/or analysis, we cannot be certain that the probability of gaining any positive returns at all is higher than the “average possibility of loss.” For this reason, I would categorize Garber’s “perception of an increased probability of high returns” as *speculation*; which is a characteristic of bubbles according to not only Palgrave in his 1926 *Dictionary*, but to other economists.

Charles Kindleberger seems to also consider *speculation* a significant characteristic of bubbles; but he adds another component that makes his definition more precise. In the year of 1987, he defined the term bubble as follows:

a sharp rise in price of an asset or a range of assets in a continuous process, with the initial rise generating expectations of further rises and attracting new buyers—generally speculators interested in profits from trading in the asset rather than its use or earning capacity. The rise is usually followed by a reversal of expectations and a sharp decline in price often resulting in financial crisis.

As it is evident, Kindleberger explains how speculation becomes an important factor that drives up price of an asset and that, later, prices might decrease rapidly causing an economic turmoil.

Margaret Hwang Smith and Gary Smith (2006) argue that “true believers in efficient markets might deny that there can ever be a bubble.” According to their claim, it can be inferred that Garber is a “true believer in efficient markets” because he suggests that a non-fundamental characteristic of bubbles - the “perception of an increased probability of large returns” or, in other words, speculation – should be considered a fundamental. Having set the context, another “true believer in efficient markets” would be Robert E. Hall (2001), since, in his paper

“Struggling to Understand the Stock Market” he wrote: “I reject market irrationality in favor of the hypothesis that the financial claims on firms command values approximately equal to the discounted future returns.” But the term “approximately” holds within its definition some margin of error”: what some would consider the fundamental value of an asset to be close to its market value, others could consider it to be far off. Furthermore, just as Garber (1990) indicates, “the perception of an increased probability of large returns,” when it comes to undertaking financial decisions, “might be triggered by genuine economic good news, by a convincing new economic theory about payoffs or by a fraud launched strategically to trick investors.” How can we have faith that the market embodies an value “approximately equal” to the fundamental value of an asset if the underlying financial undertakings are based on erroneous or fraudulent information? Nevertheless, there are other economists that, just as Kindleberger, are firm believers that *bubbles* are real situations in the markets.

Given that it is often believed that a *bubble* is when prices rise sharply and then collapse, Christopher Thornberg (2006) explained that a bubble is not necessarily when the price of an asset goes up and then down, because this happens all the time in the markets. Instead, it “is when the market price of an asset is doing something it should not be doing given what we understand are the fundamentals.” This means that there are certain factors through which we should be able to determine [objectively] the market price of an asset, and these are called market fundamentals. But, what exactly are market fundamentals? Downes and Goodman (2006) defined the entry *fundamental analysis* as “research of such factors as interest rates, gross national product, inflation, unemployment, and inventories as tools to predict the direction of the economy.” If these factors are what Thornberg referred to as fundamentals, then, according to his

definition, a market whose prices are – partially or completely – determined by speculative activity would most definitely be considered to be a bubble.

Because of all the different interpretations currently existent about economic bubbles, the task of labeling some market as a bubble seems a rather difficult and subjective task. In an attempt to remain as consistent as possible with prior interpretations (or definitions) of economic bubbles – and to be able to objectively determine whether some market undertaking qualifies as a bubble – I have integrated those qualities about the concept that seem most persistent and substantial; and it is as follows:

An economic bubble is a market episode in which asset prices:

- 1) Do not reflect the intrinsic value of the asset, and cannot be interpreted or explained through fundamentals (interest rates, gross national product, inflation, unemployment, inventories and such).
- 2) Experience a sharp rise – often triggered or sustained by speculative activity – that can be followed by a sudden collapse; which, generally leads into a financial crisis.

Having set the parameters by which economic activity should be evaluated, we can now move on to how some economists have interpreted the 1998-2006 housing market.

The Housing Market

Even though there are opposing arguments regarding whether the 1998-2006 housing market was a bubble, it is important to consider that it exhibited such a behavior that economists on both sides of the spectrum – those who argue it was a bubble and those who argue it was not – have attempted to explain why house prices rose in such an remarkable way.

Morris A. Davis, François Ortalo-Magné, and Peter Rupert (2007) explain how even though there is a public notion that, between the years of 1998 and 2006, house prices

experienced a sharp increase at “historically anomalous rates,” this kind of activity has occurred in the past. According to them, “the most widely cited historical data on house prices (compiled by Robert J. Shiller for the 2005 edition of his book, *Irrational Exuberance*)” is inaccurate in what they consider a “particularly important period – the 1970s,” because it suggests that during this decade “house prices were roughly flat.” Davis, Ortalo-Magné, and Rupert suggest that data compiled by Davis and Heathcote (2006), which, they claim to be “constant-quality,” implies that between the 1970’s and the 1980’s the housing market experienced a similar behavior as it recently has. Regarding how markets have behaved in the past gives economists an idea of how they might behave in the future so they can better approach them; but even if Davis, Ortalo-Magné, and Rupert are correct in that the housing market experienced a *boom* between the 1970’s and the 1980’s that was similar to the 1998-2006 one, the data that they utilize to make their argument implies that it was still not at the same magnitude. Now, the ability to label a market as a bubble is not determined only by extreme price fluctuations; for which reason it can be implied that Davis, Ortalo-Magné, and Rupert do not regard these housing *booms* as bubbles – they would have had to explain the cause of such price changes.

In 2005 Paul Krugman argued, however, that there was a bubble U.S. housing market. He explained how “housing prices move much more slowly than stock prices,” which meant that if a bubble was about to burst, it would do so over a period of time longer than a stock bubble would. He also explains that the United States is divided into two different areas: what he calls “Flatland” – the middle land of the country – where he argues that “a housing bubble can’t even get started,” and the “Zoned Zone,” located along the coasts, where he argues that “a combination of high population density and land-use restrictions – hence ‘zoned’ – makes it hard to build new houses,” which makes house prices in this area more susceptible extreme

fluctuations. However, it is important to regard that, in what he calls “Flatland,” there was still a higher-than-usual appreciation of house prices; which, does not imply a bubble but reflected the overall behavior of the housing market in the United States, even if it was at a smaller scale.

There are also those who strongly oppose against the idea of a bubble in the housing market. Even though Margaret Hwang Smith and Gary Smith (2006) point out that housing “prices have risen rapidly and some buyers have unrealistic expectations of continuing price increases,” they still argue that the real estate market can be explained through fundamentals; hence, there is no bubble. Smith and Smith base their argument on the assumption that housing “prices were below fundamentals and the 2001-05 run up pushed prices closer to fundamentals.” The problem with this argument is that it implies that house market prices have been below their fundamental value for a really long time. Christopher Thornberg (2006) explained that the real appreciation of house prices has been about .2 percent for the last century – up until the 1990’s. Does this mean that, according to Smith and Smith, the fundamental price of houses has been above market prices for the last one-hundred years? Or, does that mean that the rate of real appreciation of the fundamental value of houses just changed at some point before the 1998-2006 housing market?

Even though these economists make valid points in their arguments, in order to make an objective judgment about the housing market, it is necessary to look at actual data from primary sources.

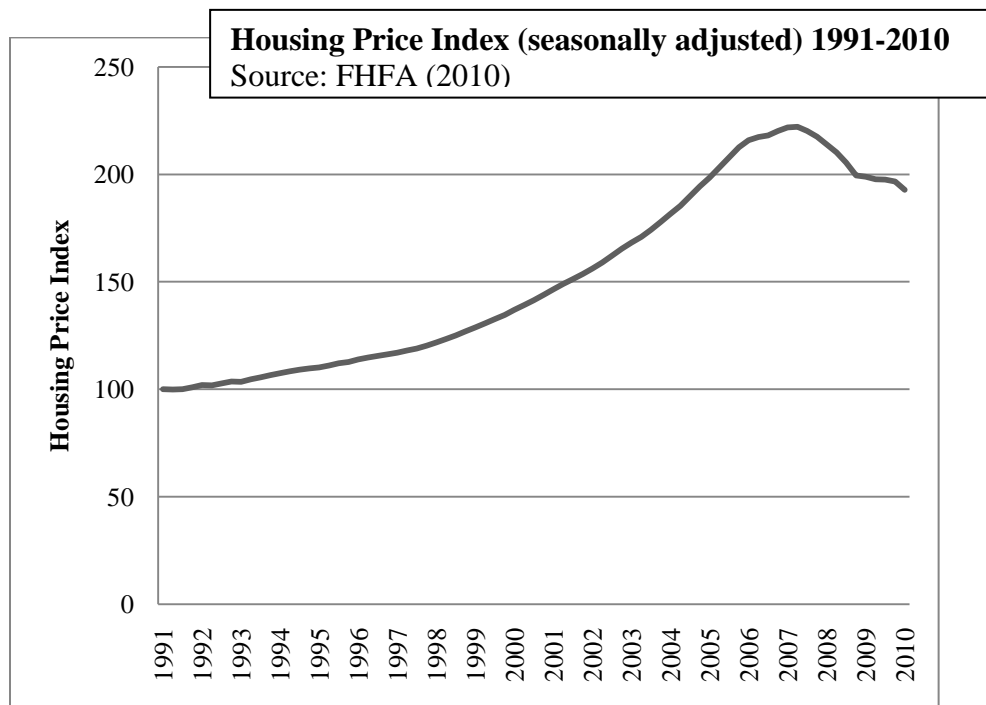
Data

This section contains data that is necessary analyze the 1998-2006 housing market – based on the parameters that have been established for an economic event to be considered a bubble. Rent cost levels – relative to housing prices – represent in this section the data that

constitutes the fundamentals – later in this paper it will be explained why. Other pieces of data, such as the amount of money invested towards the housing sector and the U.S. savings rate in the private sector, are listed in order to explain another factor that does not constitute a fundamental – speculation. All these data will be interpreted in this section and then analyzed subsequently in the analysis section.

The first important piece of information to be regarded is the actual rise in housing prices. Figure 1 below shows the seasonally-adjusted housing price index for the entire housing market in the United States from 1991 to 2010, having 1991 as the base year.

FIGURE 1

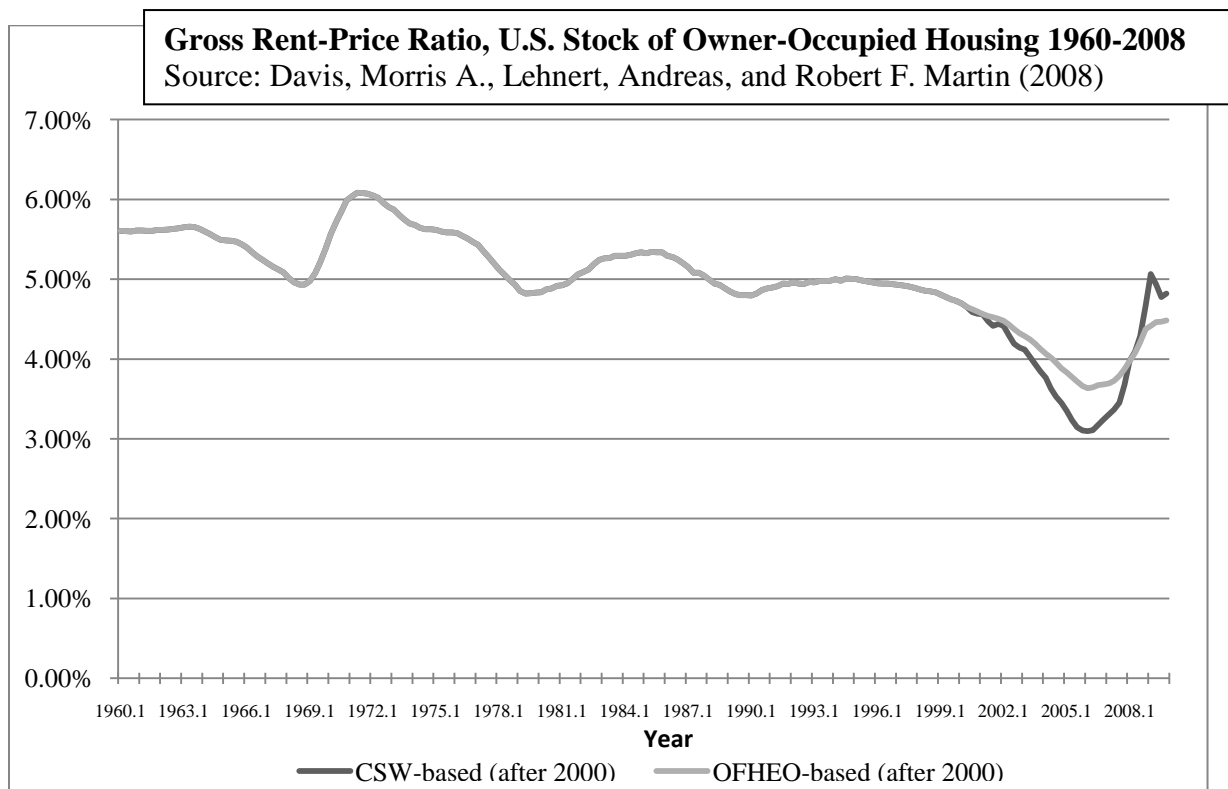


As it is observed on the graph, there is a constant nominal appreciation in housing prices of about 2.65 percent per year from 1991 to 1997. Based on the perception that this is the normal state of the housing market, one could infer that a sudden change in the rate of appreciation represents a strange situation. Starting in 1998, the – previously *constant* – curve becomes exponential as the rate of appreciation of housing prices increases in the entire country. From 1998 to 2006 there is

an average rate of appreciation of about 7 percent, with 2004 having the maximum at 9.26 percent per year. Now, to explain this behavior, it is necessary to move on to other pivotal factors of the economy.

One of the fundamentals of the housing market is the level at which rent costs lie – relative to housing prices. Figure 2 displays the gross rent-price (renting versus purchasing a home) ratio in the United States from 1960 to 2008. The average monetary amount that one would pay to rent a residential space for one year is represented as the percentage of the average price of a house.

FIGURE 2

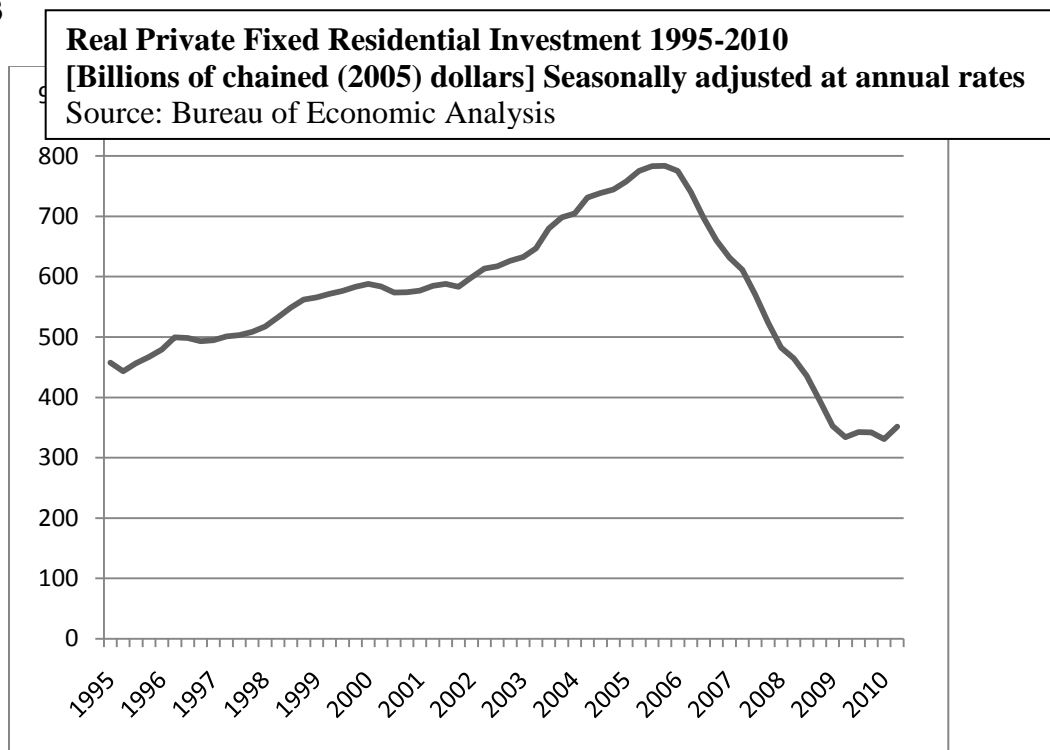


As the graph demonstrates, starting in 1998 the cost of purchasing a home (relative to renting) increased exponentially. It also shows that towards the end of 2005, the rent-price ratio reached its lowest point to 3.1 percent and 3.63 percent (CSW-based (after 2000) and OFHEO-based (after 2000), respectively). This means that, up to this point, either the cost of renting decreased

dramatically or that house prices experienced a sharp augmentation. As seen on Figure 1, it is evident that this recent rent-price ratio divergence was caused by a sharp increase in house prices rather than an overall increase in costs of renting – which also implies that the service flow of housing, often determined by the rental value, did not increase fundamentally.

Another important piece of information needed to analyze the housing market is the amount of investing that is put forth towards the construction of new residential spaces and the renovation of existing homes. Figure 3 shows the real private fixed investment intended for the cons new housing from 1995 to 2010 in billions of chained (2005) dollars, and it is seasonally adjusted at annual rates.

FIGURE 3



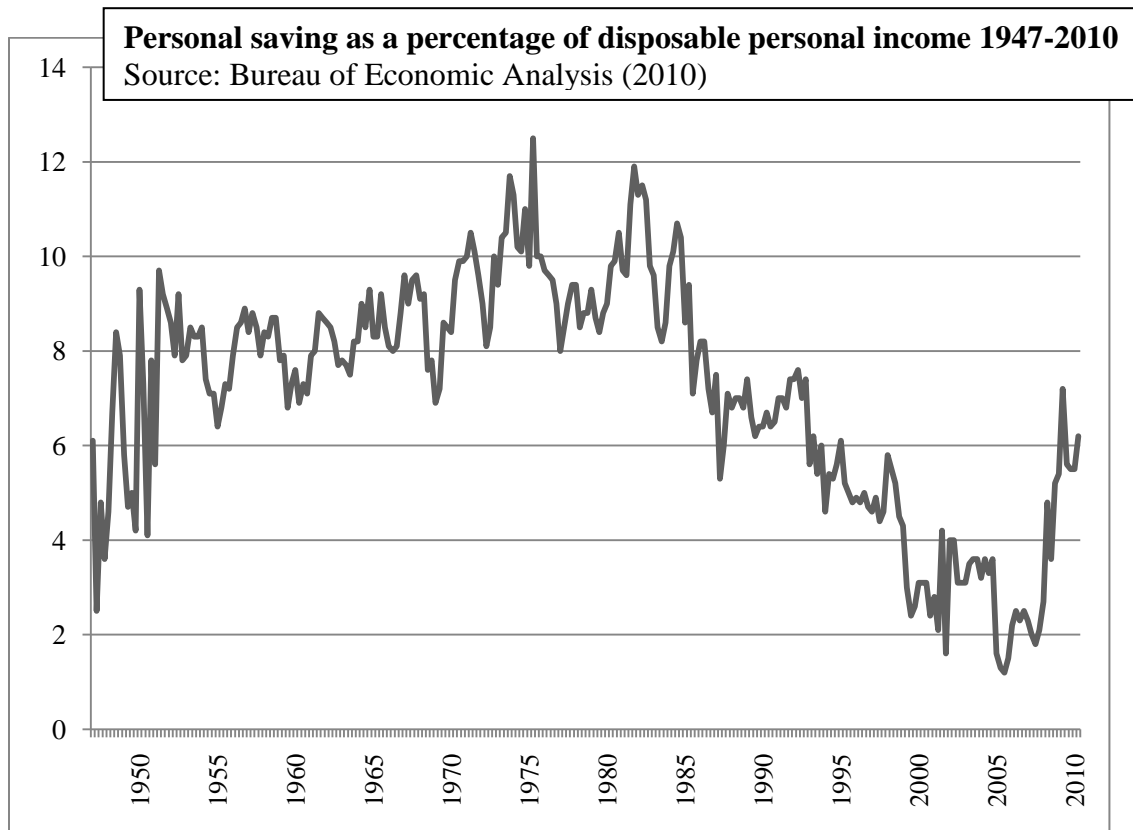
The significance of this graph resides on the rapid growth and sudden collapse in investment spending towards the construction of new residential spaces and renovation of existing ones.

This investment spending went from \$573.7 billion during the second quarter of 2001 to its peak

at \$783.5 billion of 2005's fourth fiscal quarter. Four years later, in 2009, it decreased to a minimum of \$333.9 billion.

To interpret the increase in housing prices and the increase in investment spending in this sector it is also helpful to look at the nation's overall economic stability. Figure 4 shows personal saving as a percentage of disposable personal income in the United States from 1947 to 2010. In other words, this graph illustrates the amount of money people save relative to their incomes after their income taxes have been deducted.

FIGURE 4



This graph shows that from 1948 to 1998 the private savings rate was kept above four percent, with 11.7 percent being its maximum during the third fiscal quarter of 1973. It is interesting to notice that it faced a staggering collapse from 5.8 percent in the first fiscal quarter of 1998 to 2.4

percent during the third fiscal quarter of 1999. Then it reached its lowest point at 1.6 percent during the third fiscal quarter of 2001.

The next section seeks to provide an analysis of the data just interpreted regarding the 1998-2006 housing market.

Analysis

As it can be seen on Figure 1, housing prices rose tremendously during the 1998-2006 housing market, which suggests that there was an abnormal situation taking place in the overall economy – hence, some would think there was a bubble. However, it has been established that the ability to label some market as a bubble does not reside only on the behavior of its asset prices, but also on other factors; which, might or might not be considered fundamentals. It has also been established that in order to have a bubble, we have to be unable to explain any given market through the use of fundamentals. For this reason, relevant data regarding the fundamentals of the real-estate market was included in this paper, and the subsequent paragraphs seek to analyze it.

Since individuals gain the same service flow from both renting and owning a residential space, economists consider renting costs to be an important factor in determining what house prices should be; hence, renting costs relative to house prices constitute a fundamental. Figure 2 demonstrates that from 1960 to 1995 the rent-price ratio remained above or around 5 percent; which, for the most part, is a constant percentage within a thirty-five year interval. The 1996-2005 decrease to 3.1 percent (CSW-based (after 2000)), however, implies that within nine years it became 38 percent cheaper to rent a residential space than to purchase one. One would expect that if the rental value of a home increases, this would be reflected not only by an run-up in house prices, but also by a proportional increase in renting costs. However, the price-to-rent

ratio, a pivotal factor – and fundamental – in explaining the housing market, does not reflect an increase in the service flow of owning or renting a residential space. For this reason, the 1998-2006 run-up in house prices cannot be explained through rent-cost levels in the United States.

Inflation, another important fundamental in asset prices, did not constitute a significant factor in the rapid increase of housing prices because it would have also been reflected as an increase in rents; but it did not.

Now, as part of the interpretation of bubbles that was developed in this paper, speculation is a big factor in determining whether a market should be considered a bubble or not. In order to incorporate speculation as part of the analysis of the 1998-2006 housing market, it is helpful to look at how much money the private sector has invested towards the construction and renovation of residential spaces over time. Figure 3 shows how private investment towards the housing sector increased more rapidly than usual from 2001 to 2005, but collapsed more dramatically from 2006 to 2009. It is evident that investors noticed the unusual rate at which house prices were increasing, and based on the perception that they would make more profits as prices were escalating, they injected more money into this sector. In the area of economics, perceptions of such nature are known as speculation; and speculation, in markets with asset prices embodying such behavior, usually constitute bubbles. Also as characteristic of bubbles, the excitement that these speculators experienced reached a limit by the end of 2005. It is interesting to notice, at this point, that housing prices stopped increasing at such anomalous rates in 2006, a later after investors decreased the amount of monetary input towards the housing sector.

But there should have been a factor that initially pushed the appreciation of house prices above normal rates. In their paper Morris A. Davis, François Ortalo-Magné, and Peter Rupert (2007) do a very good job at explaining this. They claim that “any change in the ability to

purchase a home, such as from innovations in the lending environment, can have a large impact on the level and volatility of housing prices.” Then they explain that if the initial down-payment of a house is decreased, since housing is in fixed-supply in the long run, it is likely that prices will rise. The same happens with the interest rates on a mortgage – if mortgage rates go down, then the overall price of the house increases. Low down-payments and low interest rates were defining characteristics of the well-known subprime mortgages, which were highly used towards the end of the 1990’s. Hence, it is irrefutable that these lending practices had a direct impact on the initial increase of house prices during the 1998-2006 housing market; though, it is unknown exactly by how much. For the purposes of this investigation, there is no need to know exactly by how much the nature of subprime mortgages increased the initial market price of houses but to acknowledge that it did have a direct influence.

A piece of data that shows stunning information about the overall wellness of the U.S. economy is the Personal saving as a percentage of disposable personal income graph, which is illustrated by Figure 4. As it shows, the savings rate had not gone below 2 percent in more than fifty years; instead, and for the most part, it fluctuated between 8 percent and 12 percent. However, in 2005 (around the time some economists started predicting the U.S. was in the midst of a speculative bubble), the savings rate collapsed to a 1.6 percent. This is a great indicator that the economy was not doing so well at this point. But, how can such behavior in the savings rate be explained? It was previously stated that subprime mortgages were highly utilized by consumers to purchase homes. The explanation rests on the fact that, just as Christopher Thornberg (2006) put it, “people were spending more than they were earning.” In other words, American consumers were relying too heavily on credit to acquire goods – homes for example – and services disregarding their income levels as a spending measurement. Therefore, whatever

goods and/or services people acquired were not backed up by tangible money, but purely by credit. This again shows speculative activity, but now by consumers rather than investors. American consumers, based on their speculative idea that house prices would continue appreciating, went ahead and purchased a home even though that meant spending more money than they could afford making the payments – the expectation of a later appreciation of their own homes would later allow them to refinance, but this was only a perception.

Conclusion

The 1998-2006 housing market fulfills all the requirements stated previously for a market to be a bubble – based the factors that caused it and on the definition of bubble that was generated for the purposes of this paper. House prices did not reflect the intrinsic value of the service flow that owning a home provides – relative to renting – and cannot be explained through fundamentals. House prices also experienced a sharp rise that was sustained by speculation and in 2007 started falling rapidly.

The question now becomes, is this type of market behavior detrimental to the overall well-being of the economy? Some economists have argued that the 1998-2006 market was one of the primary causes of 2008 financial crisis. Based on this argument, it is important to study then how these situations can be best avoided or at least controlled – whether it is to implement policies to increase regulation, or to better educate consumers about the risks of certain economic undertakings.

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