Is There a Housing Bubble in Humboldt County?
The Housing Market in a Rural California Region, 1989-2004

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Abstract

This analysis is the first look into the housing market in Humboldt County since the rapid increase in national house prices in the early 2000s. The data we present for Humboldt County 1989-2004 is consistent with housing price movements in other coastal regions of the U.S. where some believe that a "housing bubble" has formed. In the three years from January, 2002 to December, 2004, the median house price appreciated by 72% or $113,750, with the most rapid increase in 2004. More importantly, the P/E ratio never rose or fell by more than one point from 1989-2002. In both 2003 and 2004, however, the P/E ratio climbed by three points, so that it was 23.8 in December 2004 while it averaged 15.4 from 1989-2002.

Acknowledgements

I. Introduction

What is a housing bubble?

A great deal of attention has been paid recently to the price of houses in the U.S. and other countries because the average price has increased tremendously over the past few years (See Wolk 2004, 2005, Gross 2005, and Pender 2004). From 1999-2004, U.S. average house prices increased by 48% while prices in California grew by 100%. However, there has not been an analysis of remote and rural housing markets such as Humboldt County, California. Humboldt County is on the Northwest Coast of California, about 272 miles north of San Francisco. The closest metropolitan area is Redding, California, which is about a three hour drive away.

Current and future house owners, the real estate industry, and policy makers are concerned that a "housing bubble" has formed and that a bursting of the bubble is near at hand. A real estate market bubble is similar to a stock market bubble except that the asset price under consideration is the price of housing rather than the price of stocks. An asset price bubble is loosely defined as a situation where the price of the asset rapidly increases due to expectations of future price increases rather than changes in the underlying supply and demand "fundamentals" of the market. In other words, the price of the asset rises because people are willing to pay more for the asset, but people are willing to pay more for the asset because the price is rising. In the housing market, the fundamentals that affect house prices include the number of houses built, changes in population or income, and availability of mortgages, among other factors.

An asset price bubble is more likely to form when buyers do not have full information about these fundamentals. Such is the case when there are more inexperienced buyers and when buyers have more money available for purchases. Many economists believe that the late 1990s' stock market was an example of a bubble. Many new investors were eager to purchase stocks and in particular technology stocks, where the future profitability of the firms was unknown. The stock market bubble "burst" in 2000, and stock prices fell considerably over the next few years. By 2005, stock prices were still below their 2000 peak. Other possible bubbles include the late 1920s stock market and the 1980s Tokyo housing market, where fifteen years later, house prices are still below their peak values. Closer to home, housing prices in San Diego fell by 25% after adjusting for inflation from their 1990 peak to their 1996 low (Krugman 2005).

The distinguishing characteristic of a bubble is a rapid increase in price followed by a rapid decrease in price: The bubble inflates then bursts. Thus, the rapid increase in prices is not "sustainable" and is followed by a decrease in prices. However, it is almost impossible to determine if an asset is experiencing a bubble or not. This is because buyers expectations of future prices are a valid part of supply and demand. For instance, if a drug company invents a great new type of medicine, it is reasonable to expect that the company will be more profitable in the future and it is reasonable to pay a higher price for its stock today, even if the medicine has not yet been sold and current company

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profits are unchanged. Usually, a rapid increase in the price of an asset is not due to a bubble but rather changes in the asset's fundamentals. Sometimes observers will declare a bubble after the price collapse, but no one can say with certainty when a bubble is being inflated.

However, there are some important reasons why a housing bubble may have recently formed (see Krugman 2005 and McCarthy and Peach 2004). There has been an increase in the percent of people who own their house and a larger portion of house purchases are for second houses. More people report purchasing a house for "speculative" purposes rather than for residence. After the 2000 stock market decline, people may be more cautious about investing in stocks and may have turned to housing as a form of investment. Federal Reserve Board Chairman Alan Greenspan notes that 14 percent of mortgages were for second-home purchases in 2004 which is double the percent in 2000 and that second house purchases are "arguably are at historically unprecedented levels." (Greenspan 2005) Additionally, house ownership has become more attainable since credit has become more available, which has allowed people to purchase houses that are a greater fraction of their income.

Another indication that the recent increase in house prices is unsustainable is to consider what happens to house price compared to annual income. If housing prices grow at a 20 percent annual rate for ten years, housing prices will increase by a factor of over six. If income grew at a healthy 5 percent annual rate for ten years, income would increase by a factor of about 1.5. In other words, in just a few years worth of the very rapid growth that we've experienced in prices, people will be unable to service a mortgage out of their income. In fact, Humboldt Association of Realtors calculates an "affordability" index, which is the percent of Humboldt County households that can afford a mortgage on the median priced house. In June, 1999 the value was 49%. By June, 2005, the value had fallen to only 13%.

If there exists a housing bubble, then some people will gain and some will lose from the rapid price increase and decrease. People who sell their house before the price collapse may gain. However, most sellers will purchase a house shortly after they sell their house. Unless they move to a region with lower house prices or rent or "trade down" to a less valuable house, then they will not gain and may even lose. For instance, many people buy starter houses and trade up to larger houses. As prices rise, the difference between starter and more expensive houses grows since the top end of the market rises faster, so it may become more difficult for them to "trade up." Obviously, first time house buyers will find it increasingly difficult to purchase a house while prices are high, and overall wealth inequality in the U.S. may increase. Workers employed in housing industries such as construction and real estate will experience increased demand for their services during the price increase, but will also experience decreased demand once the bubble bursts. Finally, the economy will benefit during the house price increase from a "wealth effect," whereby house owners will feel more wealthy and will spend more on all sorts of goods and services. Of course, the wealth effect may work in reverse too, and if prices fall quickly, consumers may curb their spending which will reduce the growth rate of the economy.

Detecting a housing bubble with the P/E ratio

The most common way to look for a housing bubble is to look at changes in the P/E ratio. (see Leamer 2002, Feldman 2003, Kainer and Wei 2004, and Max 2005) The P/E or Price-Earnings ratio is a common term from financial literature and is the price of an asset divided by the annual earnings of the asset. In the case of housing, the price is simply the actual price at which the house sells and the earnings is the current yearly rent that the house could earn if it were rented. Often maintenance costs are subtracted from rent.

The P/E ratio comes from the basic idea of asset pricing: The most that you will be willing to pay for an asset is the amount of income that it will generate for you. For example, suppose someone wanted to borrow $100 from you for one year and the interest rate was five percent. How much would they have to repay you next year? If instead of loaning the money you put $100 in the bank, then next year you would have $105, which is $100 times one plus five percent. Therefore, you would want to be repaid $105 next year for extending a loan of $100 today. In other words, you would pay at most $100 for the $105 asset (the promise of receiving $105 next year). For housing, the most that you would pay for a house is the sum of all rent that you could charge today and forever into the future. If we adjust the future rents for foregone interest, then we say that the most that you would pay for a house is the present discounted value of all rent today and into the future. We can write this asset pricing rule as an equation

$$Price_t = Rent_t + \frac{Rent_{t+1}}{(1+i)} + \frac{Rent_{t+2}}{(1+i)^2} + ...$$

where *Price* is the house selling price, *Rent* is the house rental price, *i* is the real interest rate, and *t* is the current year, *t+1* is the next year, etc.

Asset pricing tells us that the price of a house should be related to current and future rents and the interest rate. If we assume that current rents are related to future rents, and that the interest rate does not change, then price should change when the current rent changes. In other words, the P/E ratio should be constant. If the P/E ratio rises very high, then people may be paying too much for their house based on existing fundamentals. Therefore, a housing bubble may exist if the P/E ratio rises too high.

In reality, the P/E ratio is related to future rents and the interest rate. What determines future rents? This will be factors such as household income, population, taxes, job growth, government regulation, and special events in the rental housing market. Specifically, the P/E ratio may rise if household income rises, population increases, taxes decrease, job growth is high, or government regulation is low (since it reduces costs of owning housing). Or, the P/E ratio may rise on account of anything else that may raise

future rents. Landsburg (2005) and Krugman (2005) report that restrictive zoning may also keep prices artificially high.

Housing bubbles in other markets

Changes in housing prices and the P/E ratio have recently received a great deal of attention by economists in major urban areas, such as Los Angeles, San Francisco, and New York. Most research shows that a housing bubble has likely formed in major coastal, metropolitan regions, while there appears to be few bubbles in the interior and rural regions of the United States. Housing prices have begun to fall in San Francisco after a recent rapid appreciation. After the 1980s housing boom and the housing price decline after the 1991 recession, housing prices were essentially unchanged in many areas of California for almost ten years. According to one study, the city with the greatest evidence of a bubble is Chico, California (Wolk 2005).

A study by Dean Baker (Baker 2002) found that housing prices were on the rise for no considerable fundamental reason. Between 1995 and 2002, house sales prices outperformed inflation by close to 30 percentage points in real terms. Baker's examination of wealth and income by generation since 1951 produced no solid evidence that there was any strong fundamental reason that would cause such a surge in demand for housing to cause prices to increase so drastically. However, he makes note that the bubble is not affecting all areas of the United States. Some regions of the United States saw house sales prices move at about the same pace as inflation, while other states have seen house sales prices dramatically outperform inflation.

The Public Policy Institute of California (Johnson et al. 2004) recently performed a very extensive study on the supply of California housing. The study concluded that there is a housing shortage in isolated geographic regions in the state, but it is not statewide and is much smaller than initially believed, saying that the actual number in shortage is approximately 138,000 or about 13.8 percent of the 1,000,000 originally proposed. Macroeconomic factors can explain the slowdown in housing construction during the 1990's, such as a slowed rate of population growth (decline in demand for housing), high return on alternative investments (technology boom), and actions made by the Federal Reserve through monetary policy in forecasting inflation. The rapid rise in the price of housing cannot be attributed to supply factors.

To our best knowledge, such a study has not been rigorously performed for Humboldt County. This is because Humboldt County is remote and rural. While Humboldt County is located in California, a growing coastal state, it is also to a large degree more rural than other areas of California. Therefore, it is unclear whether Humboldt County will exhibit real estate market activity similar to other major California cities or to other rural cities in the nation.

II. Data

Housing Prices

Housing prices are calculated from residential housing sales, including condominiums. Commercial and industrial property is not included. Some data were provided directly by the Humboldt Association of Realtors (HAR) and some were calculated from their archives.

The median price was derived from HAR housing data books from 1989-1994. The median was calculated by sorting the "Sales Reported Since Last Publication" section and using the appropriate coded values. In this case, values were coded 1-4. The coded value of 1 represented residential/condos. All other values were thrown out. For the months which did not use coded values and instead used the acronym RES for condo/residential, all other acronym values were thrown out except for RES.

The mean for "Residential/Condo Sold Since Last Publication" was calculated by HAR and was taken directly out of the HAR data books from 1989-1994.

Mean and median house prices 1995-2004 were provided directly by HAR.

Houses sold

The number of houses sold 1989-2004 is calculated from residential housing sales, including condominiums. Commercial and industrial property is not included. Some data were provided directly by the Humboldt Association of Realtors (HAR) and some were calculated from their archives.

Rents

Rents for 1989 thru 2004 were calculated by taking the mean of all listed 2-4 bedroom housing rentals under the Eureka Times Standard Classified Section "Houses For Rent" on the 2nd and 4th Sundays of each month. Included in the calculation are 2, 3, and 4 bedroom houses, condominiums, townhouses, and duplexes. For listings which gave a range of prices, such as "2, 3 and 4 bedroom houses for 500/550/600," all three prices would be used to calculate rent. Not included in the calculation are rentals that did not list number of bedrooms, apartments listed in this section, 1 bedroom and 5-plus bedroom houses, any listing which gave an inconclusive range of prices, such as "2-5 bedroom houses for $600-900," and houses listed for sale. If a single house listed a price range, then the lower value of the price range was used.

P/E Ratio

The P/E ratio is calculated by the authors and is the median house price divided by the mean monthly net rent. We subtract management costs (10% of rent) and maintenance costs (2% of rent) from the rent to get the net rent.

Income Per Capita

This is per capita income is the ratio of absolute income to total population in Humboldt County. Data from the U.S. Bureau of Economic Analysis.

Labor Force Participation

Labor force participation is the sum total of all individuals active in the Humboldt County labor force. This is not to be confused with labor force participation rate. Data from the State of California Employment Development Department.

Mortgage Interest Rate

The rate of interest collected on top of the principle loan for housing mortgages. These are average interest rates and are national, not specific to Humboldt County. They are 30-year fixed rate mortgage rates from Freddie Mac as reported by the Mortgage Bankers Association.

S&P 500 Stock Index

The S&P 500 Stock Index is a composite measurement of 500 corporations that are publicly traded and represent all major economic sectors. Data are from Yahoo Finance.

Total Population

This is the absolute number of individuals living in Humboldt County. Data from the California State Department of Finance.

Vacancy Rate

Vacancy rate is the percentage value of total household units in Humboldt County that are unoccupied. It is the inverse of the occupancy rate. Data are from the State of California, Department of Finance.

III. Findings

This section presents characteristics of the housing market for Humboldt County from 1989-2004. Figure 1 shows total houses sold. The fewest number of houses sold was 27 in April 1990, while the most houses sold was 171 in August 2002. Since about 1998, total houses sold has increased each year. The monthly average of houses sold was 123 and 125 in 2003 and 2004, respectively.

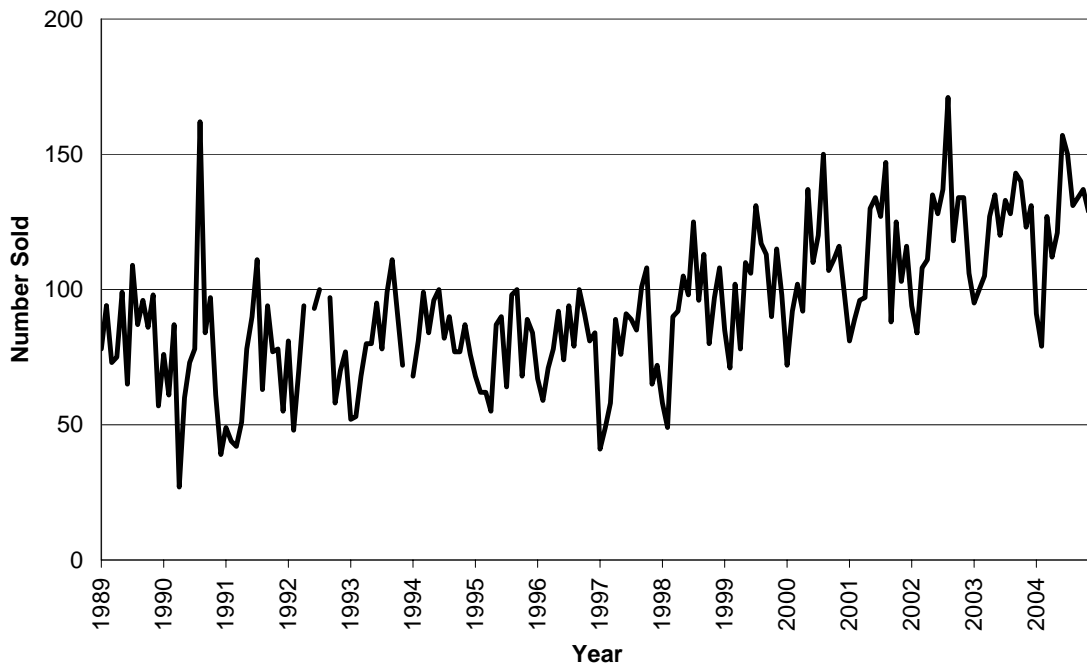**Figure 1. Humboldt County Number of Houses Sold**

Figure 2 shows the median price of houses sold. The median or middle price may be a more accurate indicator of the overall housing market price because the mean or average price is influenced more by changes in the top end of the market. Since 1989, the median price has risen but the rise has been much more pronounced since about 2002. There was a strong rise in housing prices from $79,354 in 1989 to $113,573 in 1994. Prices were unchanged for five years and began to rise in 1999 until they hit $141,987 in 2001. Prices rose by almost $25,000 in 2002 and almost $37,000 in 2003. In 2004, the median house price rose by almost $48,000 to $251,746. Prices rose by 18, 22, and 24 percent in 2002, 2003, and 2004, respectively. The only other years in which the median price rose by over ten percent was in 1990 and 1991 when the price rose by 12 and 14 percent, respectively. Thus, in both absolute and percentage terms, the rise in median house prices in 2002-2004 was the greatest over the last fifteen years.

Figure 2. Humboldt County Median Price of Houses Sold
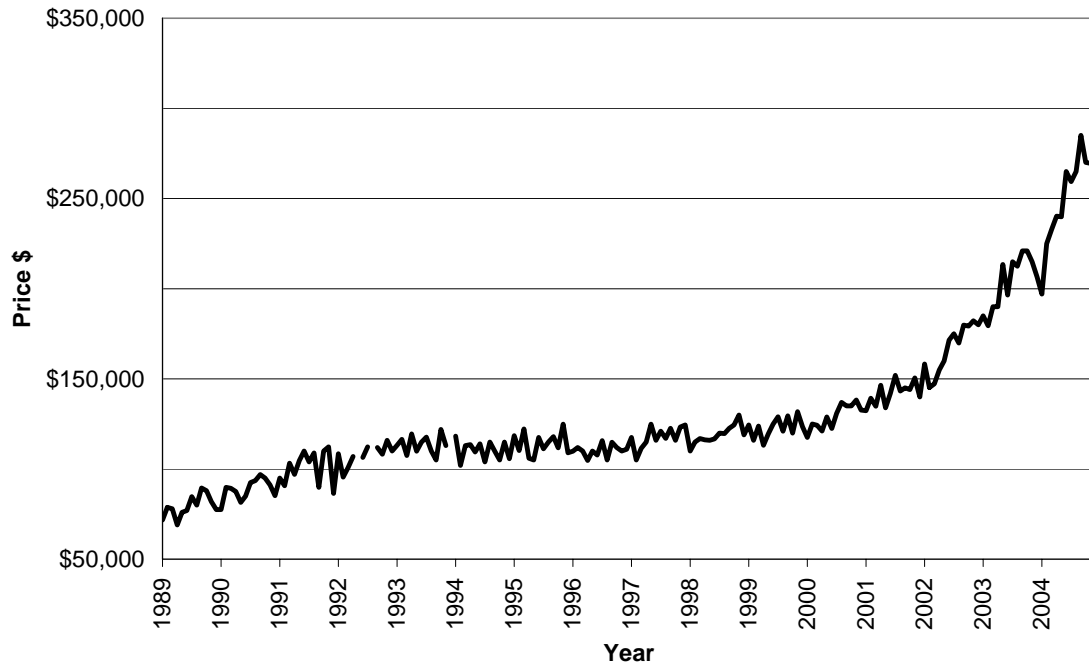
House rental prices show a similar trend to house purchase prices. Figure 3 shows that rental prices rose until 1991, were flat and then began to increase in about 2001. The average rent increased by $70, $104, $75, and $101 in 2001, 2002, 2003, and 2004, respectively. The corresponding percentage increase in these years was 9%, 13%, 8%, and 10%. The only other time rents increased by more than five percent was in 1997 when the $50 increase represented a 8% increase.
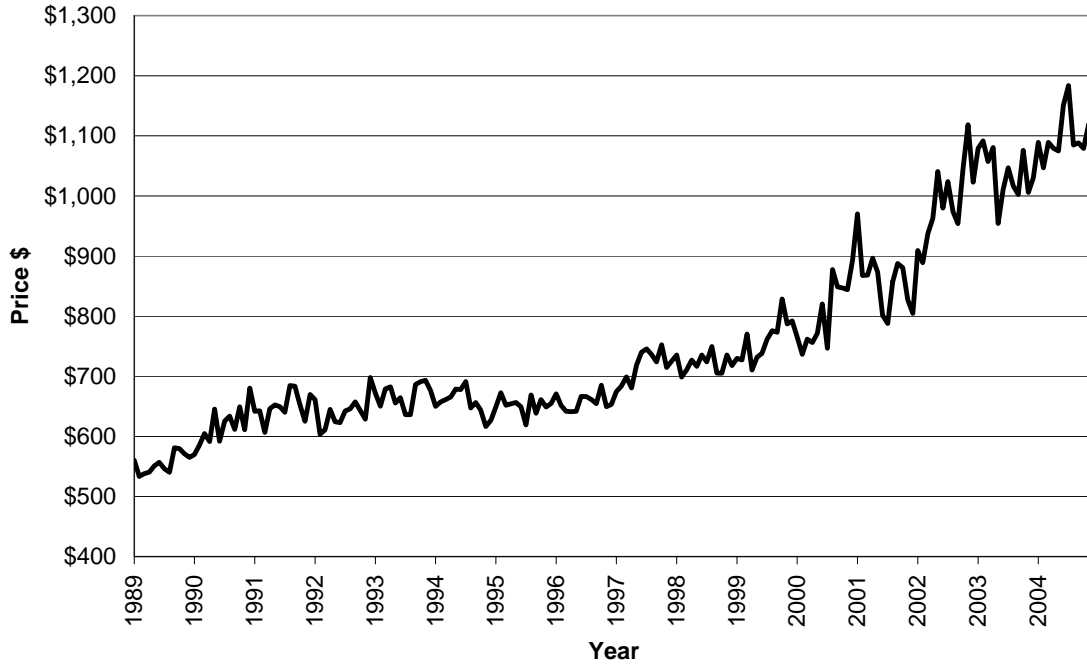
Figure 3. Humboldt County Mean House Rental Price

Figure 4 shows the P/E ratio for houses in Humboldt County. The yearly average P/E ratio rose slightly through 1992 then remained unchanged through 2002. In both 2003 and 2004, the P/E ratio rose by 3 points. In no year other than 2003 and 2004 did the yearly average P/E ratio rise or fall more than one point. The lowest monthly P/E ratio was 12.0 in May, 1990 and the greatest P/E ratio was 24.8 in September, 2004. From 1989 to 2002, the monthly P/E ratio average 15.4, while from 2003 to 2004 the P/E ratio averaged 20.2.

Figure 4. Humboldt County Housing P/E Ratio
**(medium home price/mean rent, adjusted for expenses)**
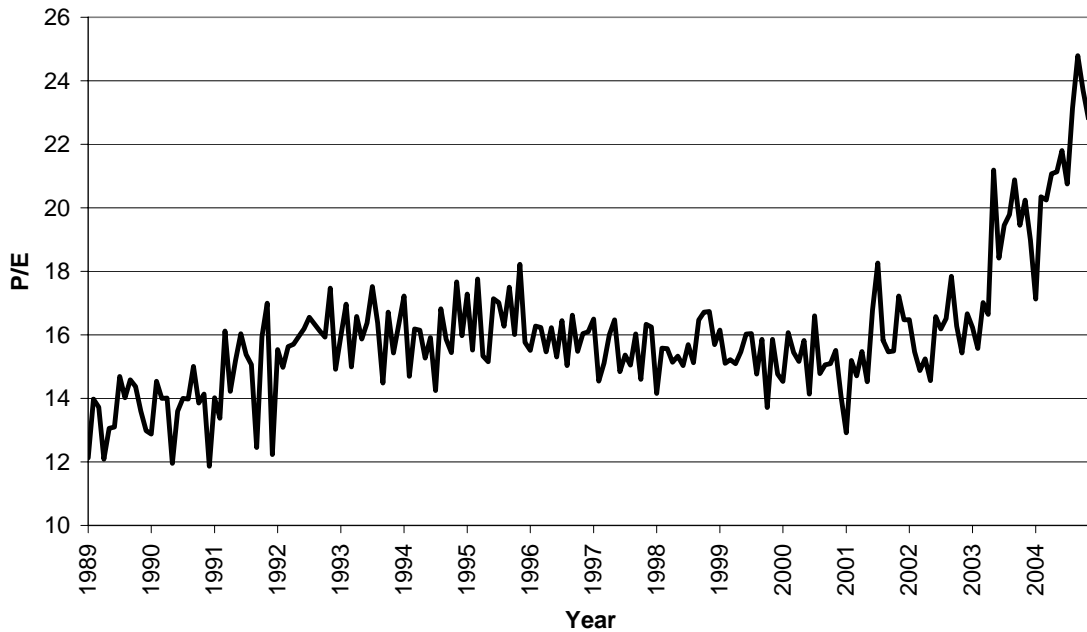
The rapid rise in the P/E ratio in 2003 and 2004 was more pronounced than any change in the P/E ratio over the period 1989-2004. Compared to 1989-2002, the P/E ratio in 2003-2004 averaged almost five points or 33% more. This P/E ratio increase is not as great as that which is observed in some housing markets, but it is greater than others in which a housing bubble is thought to exist. (See New York Times 2005) We conclude that the P/E evidence is consistent with a housing bubble in Humboldt County.

IV. Explanations

There are many factors that may influence the P/E ratio. For these variables, we have indexed their 1989 starting value to be 100 and graphed them along with the P/E ratio, which is also indexed at 100 in 1989. The purpose of indexing is to be able to more easily compare changes over time in the various series. For example, if the value is 110 in a year, this means that the factor is 10% greater than it was in 1989.

We might expect that people are willing to pay more for housing, and the P/E ratio may rise, if interest rates are very low. The interest rate and P/E ratio are graphed in Figure 5. In general, changes to the interest rate are accompanied by changes to the P/E ratio in the opposite direction. When the interest rate falls through 1992, the P/E ratio rises. Both are relatively flat from 1992 to 2000. In 2001, the interest rate starts to fall further, while the P/E ratio starts to climb. This evidence suggests that part of the explanation for the sharp rise in the P/E ratio 2003-2004 may be due to the very low interest rates. The simple correlation between the two is -0.67, which indicates a fair amount of negative correlation.

Figure 5. Interest Rate
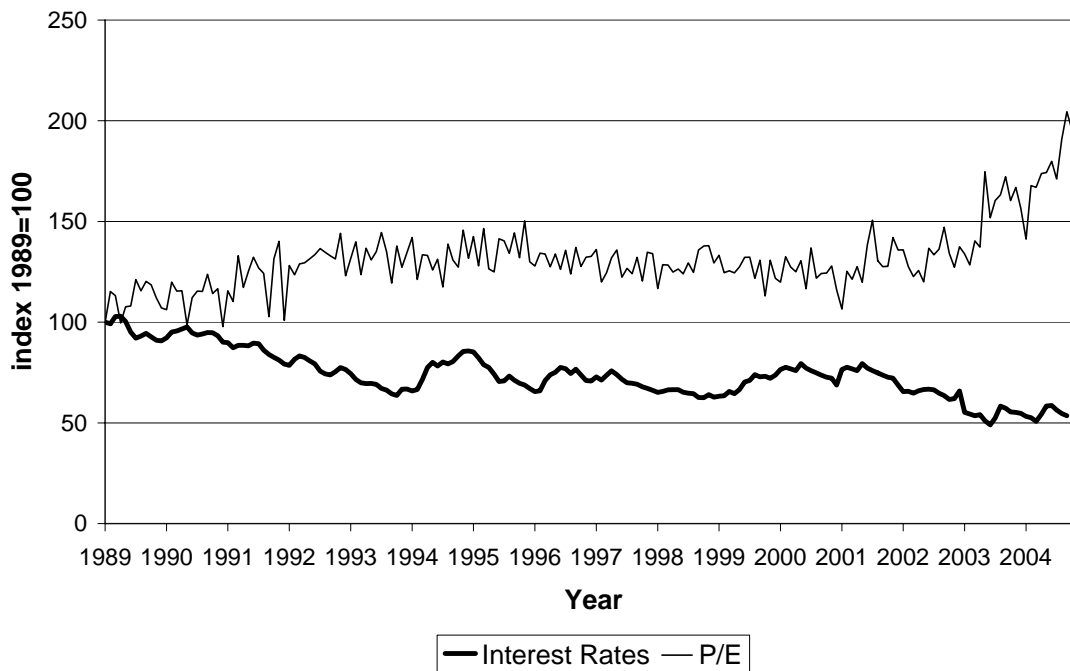
It might also be the case that the P/E ratio will rise if house prices climb due to a very tight availability of housing. In this case, the P/E ratio should be negatively correlated with housing vacancy. Below we graph the vacancy rate against the P/E ratio. While the vacancy rate did fall between 2000-2001, which was a time when the P/E ratio was beginning to climb, we do not see a pronounce drop in the vacancy rate during 2003 and 2004, when the P/E ratio climbs the fastest. The simple correlation over the entire period is -0.67. We therefore conclude that there is mild evidence that the recent P/E ratio increase is due to low vacancy rates in houses.

Figure 6. Vacancy Rate
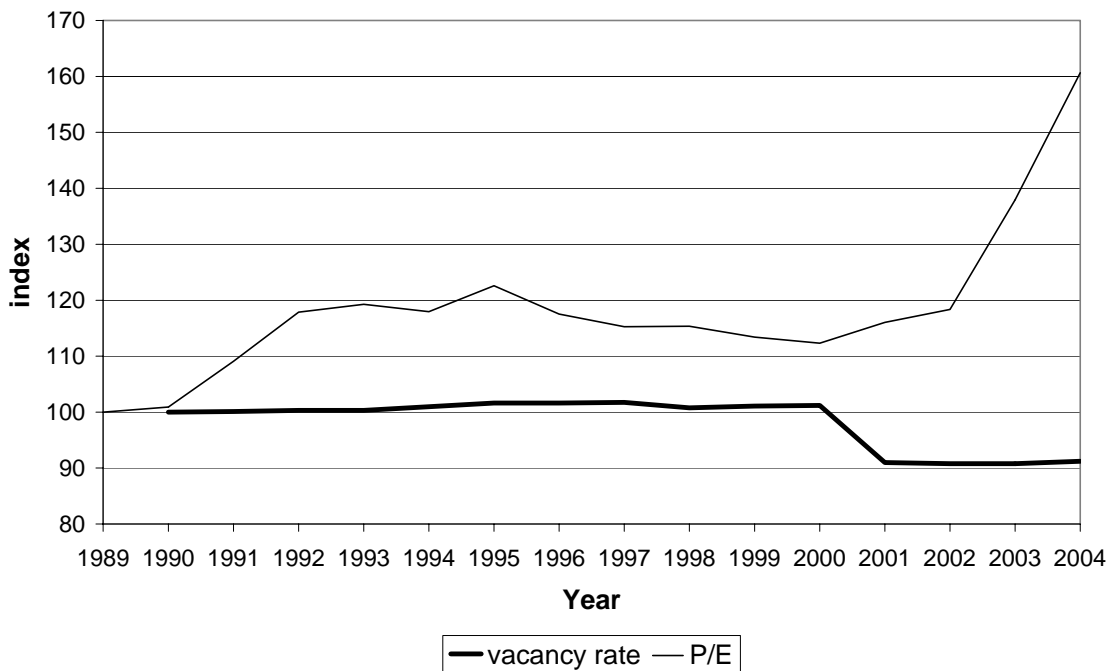
It is also possible that people moved funds from their stocks into housing, especially after the stock market collapse in 2000. Figure 7 shows the S&P 500 Index (indexed such that 1989=100) and the P/E ratio. While the P/E ratio does begin to climb while the S&P 500 is falling in 2002, the S&P 500 itself climbs quickly in 2003 and 2004, the same years as the rapid P/E ratio climb. The simple correlation between the two is -0.57 over the same period. The evidence is weak that changes in the stock market are responsible for swings in the P/E ratio.

Figure 7. S&P 500
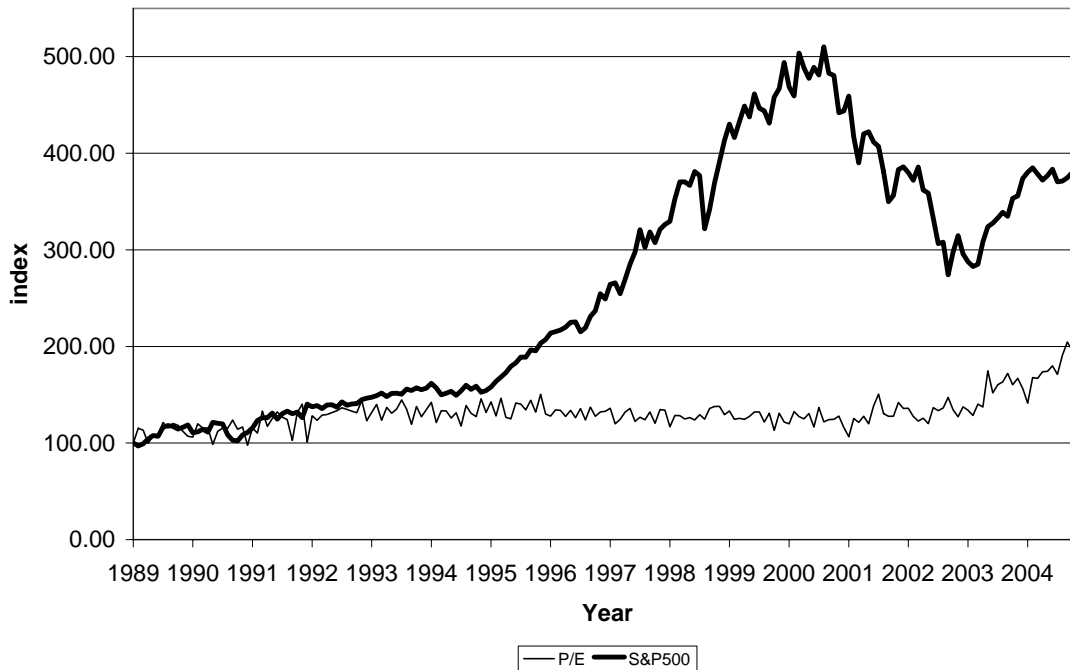
We also considered other variables such as population, income per capita, and labor force participation. None of these variables were strongly correlated with the P/E ratio in a way that could explain the recent increase in the P/E ratio.

V. Conclusions and forecasts

This analysis is the first look into the housing market in Humboldt County since the rapid increase in national house prices in the early 2000s. In general, coastal housing markets have been characterized by a rapid increase in the P/E ratio and may be experiencing a "housing bubble." Most areas of the interior U.S., and especially the rural areas, exhibit no strong evidence of a housing bubble. The data we present for Humboldt County is consistent with price increases in other coastal regions. Therefore, Humboldt County is more similar to the rest of urban California than it is to other rural regions of the country.

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In the three years from January, 2002 to December, 2004, the median house price appreciated by 72% or $113,750, with the most rapid increase in 2004. More importantly, the P/E ratio never rose or fell by more than one point from 1989-2002. In both 2003 and 2004, however, the P/E ratio climbed by three points, so that it was 23.8 in December 2004 while it averaged 15.4 from 1989-2002.

If Humboldt County is experiencing a housing bubble, there are at least two factors that may "pop" the bubble. First, we've presented some mild evidence that the recent low interest rates may have contributed to the recent high housing prices. The Federal Reserve has begun to raise interest rates and this may lead to a collapse of the bubble. However, long term mortgage rates have not yet begun to rise significantly. Second, people may begin to believe that rapid price increases will not continue and therefore cannot justify high housing prices. When this happens, buyers will not pay high prices for houses. In fact, in cities such as Miami, San Francisco, and Los Angeles, it is already cheaper to rent than to buy (Max 2005).

We cannot predict what will happen to housing prices in the future. If there is a bubble, and if the bubble pops, then one possibility is an actual decline in housing prices, as was experienced by many regions in California over 1991-1992. This decline may be mild or severe. Another possibility is a very long period, perhaps a decade or longer, of stagnant house prices.

References

Baker, Dean (2002) "The run-up in home prices: Is it real, or is it another bubble?" Center for Economic and Policy Research, Briefing Paper. <http://www.cepr.net/publications/housing_2002_08.pdf> accessed August, 2005.

Eureka Times Standard (1989-2004) "Classified Section."

Feldman, Amy (2003) "A P/E For Your Home? Price/earnings ratios aren't just for stocks anymore," June 16 CNN Money online. <http://money.cnn.com/2003/06/12/pf/yourhome/money_july_/> accessed August, 2005.

Greenspan, Alan (2005) Remarks to the American Bankers Association Annual Convention, September 26, Palm Desert, California. <http://www.federalreserve.gov/boarddocs/speeches/2005/200509262/default.htm> accessed October, 2005.

Gross, Daniel (2005) "Location, Location—Deduction: The mortgage-interest deduction costs taxpayers billions, but it won't go away anytime soon." Slate online, April 14. <http://slate.msn.com/id/2116731/> accessed August, 2005.

Humboldt Association of Realtors, Housing Price and Quantity Archives. Monthly 1989-2004.

Johnson, Hans P., Moller, Rosa M., and Dardia, Michael (2004) "In Short Supply? Cycles and Trends in California Housing" Public Policy Institute of California. <http://www.ppic.org/content/pubs/R_304HJR.pdf> accessed August, 2005.

Krainer, John and Wei, Chishen (2004) "House Prices and Fundamental Value," Federal Reserve Bank of San Francisco Economic Letter, vol27, October 1, <http://www.frbsf.org/publications/economics/letter/2004/el2004-27.html> accessed August, 2005.

Krugman, Paul (2005) "That hissing sound," New York Times, August 8. <http://www.nytimes.com/2005/08/08/opinion/08krugman.html>, accessed August, 2005.

Landsburg, Steve (2005) "Is Housing Too Expensive? Blame the Government: Maybe zoning laws are causing the real-estate bubble." <http://slate.msn.com/id/2123590/> accessed August, 2005.

Leamer, Edward E. (2002) "Bubble Trouble? Your home has a P/E ratio too," UCLA Anderson Forecast, June. <http://www.anderson.ucla.edu/documents/areas/ctr/forecast/Bubble.pdf> accessed August 2005.

Max, Sarah (2005) "Why rent matters: Rental prices hint at whether a housing market is riding on fundamentals or speculation," CNN/Money website, April 7. <http://money.cnn.com/2005/04/05/real_estate/rentprices/> accessed August, 2005.

McCarthy, Jonathan and Peach, Richard W. (2004) "Are Home Prices the Next "Bubble"?" Federal Reserve Bank of New York, Economic Policy Review, Volume 10, Number 3, December <http://www.newyorkfed.org/research/epr/04v10n3/0412mcca.pdf> accessed August, 2005.

Mortgage Bankers Association of America (2004) "Freddie Mac Survey of Commitment Rate And Points, Monthly Average 30-Year Fixed-Rate Mortgages Since 1971" <http://www.mbaa.org/marketdata/data/02/fm30yr_rates.htm> accessed July, 2005.

New York Times (2005) "Ratios of Home Prices to Rental Prices in Selected Metro Areas," May 27. <http://www.nytimes.com/2005/05/27/business/28home.moredata.html?ex=1123646400&en=426eb82db55c7afa&ei=5070&oref=login> accessed August, 2005.

Kathleen Pender, Kathleen (2004) "Alarm over price of homes," San Francisco Chronicle, Thursday, June 17. <http://sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/06/17/BUGND776191.DTL> accessed August, 2005.

State of California, Department of Finance (2005) "E-5 County Population and Housing Estimates, 1991-2000" <http://www.dof.ca.gov/html/demograp/repndat.htm> accessed July, 2005.

State of California, Department of Finance (2005) "E-5 County Population and Housing Estimates , 2005, Revised 2001-2004" <http://www.dof.ca.gov/html/demograp/repndat.htm> accessed July, 2005.

State of California, Department of Finance (2005) "E-6 Historical County Population Estimates and Components of Change July 1, 1990-2000" <http://www.dof.ca.gov/html/demograp/repndat.htm> accessed July, 2005.

State of California, Department of Finance (2005) "E-6 Historical County Population Estimates and Components of Change July 1, 2000-2004" <http://www.dof.ca.gov/html/demograp/repndat.htm> accessed July, 2005.

State of California, Employment Development Department (2005) "Labor Force Data," <http://www.calmis.ca.gov/htmlfile/county/humbo.htm> accessed July, 2005.

U.S. Bureau of Economic Analysis (2005) "Regional Economic Accounts-Per Capita Personal Income," <http://www.bea.doc.gov/bea/regional/reis/default.cfm#a> accessed July, 2005.

Wolk, Martin (2004) "A bubble in housing, with worries of a pop: Some fear mortgage rates could cause major problems" MSNBC online, April 12. <http://www.msnbc.msn.com/id/4703943/> accessed August, 2005.

Wolk, Martin (2005) "Housing 'bubblettes' may be rising Analysis finds prices out of line in 16 metro areas," MSNBC online, February 14. <http://www.msnbc.msn.com/id/6954491/> accessed August, 2005.

Yahoo Finance (2005) "Historical Prices for S&P 500 Index" <http://finance.yahoo.com/q/hp?s=%5EGSPC&a=00&b=1&c=1989&d=11&e=20&f=2004&g=m> accessed July, 2005.

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