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What Have They Been Thinking? Homebuyer Behavior in Hot and Cold Markets – A Ten-Year Retrospect

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WHAT HAVE THEY BEEN THINKING? HOME BUYER BEHAVIOR IN HOT AND COLD MARKETS: A TEN-YEAR RETROSPECT

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This paper is dedicated to the memory of Karl “Chip” Case, our co-author on the predecessor paper the three of us published ten years ago in the Brookings Papers on Economic Activity. Chip contributed heavily to our joint work before his death July 15, 2016.

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ABSTRACT

Questionnaire surveys undertaken in 1988 and annually from 2003 through 2021 of recent homebuyers in each of four U.S. metropolitan areas shed light on their expectations and reasons for purchasing during the housing boom, collapse and recovery. We find that homebuyers were generally well informed, and that their short-run expectations if anything underreacted to the year-to-year change in actual home prices. Housing bubbles can be seen in their long-term (annualized 10-year) home price expectations, the long boom that preceded the 2007-09 crisis was associated with changing public understanding of speculative bubbles. During the early years of this decade-long rebound both short and long-term expectations were out of line with actual changes in prices. Since 2014 long-term expectations have converged with short term expectations and actual price changes and all three series have moved in synch. With the onset of Covid-19, actual and anticipated appreciation diverged once again. Buyers presumed a coming slowdown in the market that has yet to materialize.

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INTRODUCTION

We report here on a continuation of our questionnaire survey study on the expectations and understandings of real estate markets by the general homebuying public in the United States, during the early years of the twenty-first century 2003-2021, encompassing the 2007-2009 financial crisis and the COVID-19 pandemic. We, with Karl E. Case, who is now deceased, last reported on our study ten years ago, in this forum (2012). The aim is, as before, to better understand some extreme and surprising movements in home prices.

Our questionnaire survey, starting in 1988 and done annually at the Yale School of Management starting in 2003, is the longest regular survey of real estate expectations.

It is also different from all other housing expectations surveys in that it samples homebuyers who bought a house just before the survey date rather than the public opinion at large. In markets with high costs of trading or other barriers to trading, it may be that market prices reflect the views of those people who are most enthusiastic or active in the market rather than the public at large.

The market for homes is more likely to be influenced by ignorant popular sentiment than are the stock markets. Transactions costs are especially high in the market for homes, deterring institutional arbitrageurs and speculators from exploiting and thereby reducing anomalies, though there is a gradual, 20-year trend for more involvement of investors. Still only fifteen percent of U. S. home sales in Q4 2021 were to investors¹. So home prices may stay in a mispriced position for a long time. Shorting the market for homes is difficult. The home-price futures market that we advocated (Case, Shiller and Weiss, 1993) and which was created by the Chicago Mercantile

¹ https://www.washingtonpost.com/business/interactive/2022/housing-market-investors/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%3A%2F%2Fs2.washingtonpost.com%2Fcar-ln-tr%2F36100b2%2F620d35549d2fda34e794eab3%2F596b83fdae7e8a44e7d8dca8%2F9%2F70%2F620d35549d2fda34e794eab3

Exchange in 2006 and based on the S&P/Case-Shiller Home Price Indices, does allow an investor to take a short futures position, but to this day the market is not very liquid.² A speculator willing to bet on a decline in home prices might find a liquid short position in another market, such as the market for homebuilder shares, to simulate a short position in houses themselves, but this is a rather indirect connection to home prices. So there is little to prevent a small but hyperactive fraction of the population from bidding up prices.

People often sit for years thinking that they should move to a different house or a different location, and waiting for some stimulus to push them over into actually making the move. That stimulus may take many forms, for example the 2010 First Time Homebuyer Tax Credit, a pandemic that has many working from home, or a sudden outbreak of war in Europe such as we are seeing in Ukraine, or from expanding social media that spread narratives about housing, narratives that are received and believed by only a subset of the population. In 2020, 5.65 million existing homes were sold, 4.7 percent of the 119.7 million occupied housing units in the United States.³ In contrast, the turnover rate of shares listed on the New York Stock Exchange in 2018 was 45.0%⁴, almost ten times higher, and it was even higher during the great financial crisis 2008-09. Looking at the current market for single family homes in 2022 and trying to understand how it got so high during a pandemic leads us away from the reliance on government policy to explain market movements. There is no paradox in seeing maximal price increases over the last year amidst only moderate expectations for future long-term price increases. The upswing in home prices is not so improbable if we reflect that these have been disruptive times (with the aftermath of the 2007-09 financial crisis and then the COVID-19 pandemic). Lives were disrupted by unemployment, by the stress of lockdowns and quarantines and deaths in the family,

² <https://www.cmegroup.com/markets/real-estate/residential/SandP-case-shiller-price-index.html>,
www.homepricefutures.com,

³ National Association of Realtors, <https://www.nar.realtor/research-and-statistics/quick-real-estate-statistics>

⁴ <https://www.ceicdata.com/en/united-states/nyse-turnover>

which has left people stewing about their living situations. Family stresses have been rife, and these have been matched by rises in crime rates and political polarization. These stresses may be driving some people, enough to dominate sales of homes, to take this occasion to be emotionally driven to find the perfect house with space for meaningful new and different activities. There may soon be currents of change caused in the housing market by the stimulus of the war in Ukraine, that are beyond the purview of typical econometric forecasting models to predict.

There is a literature about short sales in the stock market dating back to Figlewski (1981) who concluded that “restrictions on short sales are particularly important because they have a different impact on investors with unfavorable information than on those with favorable information”.⁵

If we really want to understand why home prices have surged, we need to look at the people who paid these prices. We are in such a home price boom now. Home prices have been soaring lately. The monthly S&P/CoreLogic/Case-Shiller U.S. National Home Price Index increased by 104.5% after its post-financial-crisis bottom, in a little over a decade, from February 2012, to December 2021. In real, Consumer Price Index (CPI) inflation corrected, terms, this was a 67.4% increase. In a year alone, from August 2020 to August 2021, the national index increased 20.0%. In real terms, this was a 13.2% increase. This was bigger than any year during the housing boom that ended in a crash at the time of the Great Recession and financial crisis of 2007-2009. According to our data, this was the biggest one-year increase since 1946, when returning soldiers from World War II found an inadequate supply of houses. The beginning of the baby boom then was driving demand for more floor space, but the War Production Board had shut down most housing construction to free up resources for the war. You might call the COVID-19 pandemic a sort of war, but this war is not over and this time there is no baby boom: the birth rate is unusually low. It is also a time when questions are being asked of the suitability in location and

⁵ Figlewski (1981) p. 475

layout of existing homes in the post-COVID-19 economy, questions which some say ought to depress existing home prices.

Our survey is also unusual in that our paper questionnaire invites the participants to offer comments, in their own words, amidst our questioning. We then go back and count how often they bring up concepts or narratives. In this sense, our surveys are more like focus groups than most surveys. It allows for participants to explain themselves, and for us to quantify their explanations.

We have tried throughout to keep our questions in everyday language that people use regularly. We did not ask about real prices or real interest rates, even though economists would like to know what people think about such things. The reality is apparently that most people don't think at all about such things. In all of our questionnaires through 2021 only one respondent ever left a comment using the phrase "real price," and not a single respondent left a comment using "real interest rate."

This housing boom despite the pandemic has certainly been widely noted. Candidate explanations for this boom of course refer often to expansionary monetary policy. The Federal Reserve kept the effective federal funds rate near zero for a record seven years, from 2009 to 2016 and as low as four basis points at the start of 2012, just before the current housing boom took flight. More recently, The Fed cut the federal funds rate to near zero again in March 2020, just as the World Health Organization declared that COVID-19 was a pandemic. Congress passed the \$2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act then.

But these factors are not likely thought of as the ultimate exclusive causes of the boom. The crises ultimately began from the people, not stabilization authorities. Their understandings, their motives for action, must also be understood.

Turning points in economic series do not correspond closely to major policy announcements.

For example, the 10% of purchase price capped at \$7,500 First-Time Homebuyer Tax Credit created by the American Recovery and Reinvestment Act signed by President Obama in 2009 softened the blow to the housing market in 2010, bringing in new home buyers and boosting prices. However, the expansion was short lived. It expired in 2010, causing prices to slip again in 2011, before the current housing boom began in 2012. The Fed's announcement in March 2020 of an extreme program of monetary stimulus, and the passage of the CARES Act that same month, appear to have arrested the sharp March-April slide in stock prices, but do not explain the further rise to new highs by the end of 2021. A number of Federal bills would, if signed into law, directly support the housing market.⁶ A bill entitled the First-Time Homebuyer Tax Credit Act of 2021 was introduced in the House on April 28, 2021 that would raise the maximum credit to \$15,000. The bill never passed the Senate. The Build Back Better Act of 2021 would have raised the maximum credit to \$25,000. The possibility that something like one of these bills, or some state bills, would pass must have encouraged some homebuyers. We do see mention of Homebuyer Tax Credit in the comments written by respondents on our questionnaires, though only six times through 2021.

To help sort through the reasons for the price increase, we return to our more recent homebuyers surveys. The survey asks a random sample of recent homebuyers for their thoughts, impressions and expectations. Our 2012 paper was aimed to give better understanding of the path of the housing market before during and after the financial crisis 2007-9. The objective of this 2022 update is to analyze the perceptions of home buyers over the current decade-long housing recovery.

The natural question then is to explore similarities and differences of the situation in the housing boom leading to the 2007-9 crisis and now. The literature on the housing boom and bust

⁶ <https://homebuyer.com/learn/government-programs-updates>

of the 2000s involves a number of contributing factors to the crisis: a complacency of lenders in the face of declining loan quality (Mian and Sufi 2009, Demyanyk and van Hemert 2011); money illusion on the part of homebuyers that led to flawed comparisons of home purchase prices with rents (Brunnermeier and Julliard 2008, along lines explicated by Modigliani and Cohn 1979 for the stock market); an agency problem afflicting the credit rating agencies (Mathis, McAndrews, and Rochet 2009); and government failure to regulate an emerging shadow banking system (Gorton 2010). Most if not all of these certainly contributed, even if their relative importance is hard to quantify. But they were not the only factors.

I. Our Survey of Homebuyers

Our first survey, mailed in the late spring of 1988, consisted of a questionnaire of 10 pages, which we sent to a random sample of 500 homebuyers in each of four locations within metropolitan areas around the country: Alameda County, California (Oakland and much of the East Bay, in the San Francisco-Oakland-Fremont, CA Metropolitan Statistical Area); Middlesex County, Massachusetts (Cambridge and the areas north and west, in the Boston-Cambridge-Quincy, MA-NH Metropolitan Statistical Area); Milwaukee County, Wisconsin (the core of the Milwaukee-Waukesha-West Allis, WI Metropolitan Statistical Area, and Orange County, California (which includes Anaheim and Irvine in the southern part of the Los Angeles-Long Beach-Santa Ana, CA Metropolitan Statistical Area). These four were chosen to represent what were viewed at the time as two “hot” markets (Los Angeles and San Francisco), a “cold” (post boom) market (Boston), and a relatively stable market (Milwaukee).

The questionnaires were identical (except for names of the local areas) across the four survey locations. Participation was limited to people who had actually closed on a home that spring. In a typical year, only about 5 percent of the nationwide housing stock changes hands. Thus, our respondents do not necessarily represent the universe of homeowners, home seekers, or home

sellers. Yet these are the people on whom we based our implicit valuation of the entire stock.

The response rate, shown in Table 1, to that 1988 survey was extraordinary: of 2,030 surveys mailed, 886, or 43.6 percent, were ultimately completed and tabulated. Case and Shiller (1988) presented the results of that survey and concluded, “While the evidence is circumstantial, and we can only offer conjectures, we see a market largely driven by expectations. People seem to form their expectations from past price movements rather than having any knowledge of fundamentals. This means that housing price booms will persist as home buyers become destabilizing speculators.” In addition, we found significant evidence that housing prices were inflexible downward, at least in the absence of severe and prolonged economic decline.

Table 1: Homebuyers Survey Response Rates, 1988-2021

Year	Surveys Returned	Response Rate (%)
1988	886	43.6
2003	705	35.3
2004	456	22.8
2005	441	22.1
2006	271	13.6
2007	300	15.0
2008	545	27.3
2009	370	18.5
2010	375	18.8
2011	319	16.0
2012	332	16.6
2013	368	18.4
2014	248	12.4
2015	296	14.8
2016	299	15.0
2017	320	15.9
2018	289	14.5
2019	284	14.2
2020	329	16.5
2021	266	13.3
All Years	7,699	19.2

Source: Authors' calculations from homebuyers survey data

In 2003 we decided to replicate the survey in the same four counties, to see whether changes in market conditions and other recent history had changed people’s views. We have repeated the survey in the spring of each year since then. Except for the addition of some new questions at the

end, the questionnaire has remained almost exactly the same in all surveys. We now have completed the process a total of 20 times, and this paper presents a first look at the aggregate results. The response rate has varied over time. It has remained below 20 percent since 2009. In 2014, it reached a low of 12.4 percent. The 2021 response rate was 13.3 percent

II. Homebuyers Are Knowledgeable about Latest Year’s Actual Price Change.

In Table 2 we compare the actual behavior of home prices in the four metro areas with what our respondents perceived to be happening in their area at the time. For each metro area across all 20 survey years, we calculated the correlation of the actual year-to-year change in the second-quarter average of the local S&P/Case-Shiller Home Price Index with the percentage of respondents in the corresponding survey area in that year’s survey who said prices were “rising rapidly,” and with the percentage who said “falling rapidly.”² If buyers were well informed, one would expect to see a high positive correlation of the year-over-year price increase with the percentage saying “rising rapidly,” and a high but negative correlation with the percentage who said “falling rapidly.”

Table 2: Correlation between Perceived and Actual Price Trends by Survey Location 03-21*

<i>Perceived price trend</i>	<i>Actual Price Trends</i>				
	Alameda County	Boston County	Milwaukee County	Orange County	All
Rising Rapidly	0.732	0.768	0.819	0.801	0.745
Falling Rapidly	-0.831	-0.647	-0.697	-0.697	-0.729

*Source: Authors’ calculations using our survey data. Results are simple correlations 2003-2021 between the percentage of respondents in the indicated location who gave the indicated response and the actual percentage change in the S&P/Case-Shiller Home Price Index for that metropolitan area (measured from the second quarter of the year before to the second quarter of the survey year). Data for each location and pooled across all 20 survey years.

The simple correlation coefficients were high in 2012 when the housing recovery began. The additional ten-years of survey data has not altered this relationship. In 2021, the correlation coefficients were close to 2012 levels. These measures are high in all four locations, and all have the correct sign, indicating that respondents’ perceptions have been largely on target for the past

twenty years.

Figure 1 provides more detail. It plots the nominal S&P/Case-Shiller Home Price Indexes for all four metro areas since 1987; the tables within each panel report for each corresponding survey location the full breakdown of responses to the question about price trends (question 13 in the questionnaire) and expectations (question 26 e) in eight of the annual surveys (whose dates are indicated in the figure by vertical bars). In all four locations the responses reflected a reasonable knowledge of what was happening at the time of the survey. There was not always consensus, but there was an extraordinary consistency in the results across time and between metro areas.

In our previous paper (2012) we noticed a generally realistic expectation of the next year's price increase in the local county, but not always so sober evaluation of the next ten years. Looking at Figure 1a-1d, one sees that the home price index is quite smooth over time, in contrast to stock market prices which tend to be very choppy, even from day to day. But longer-term price changes do not look easy to forecast.

From 2015 forward, expected one-year and annualized ten-year price changes were closely aligned with actual price movement which continued to trend upward. Homebuyers were positive about price trends. Over 90 percent of respondents in each year from 2015 to 2018 reported prices were trending higher. This was true in Orange, Alameda and Middlesex counties. In 2015, 75 percent of Milwaukee homebuyers viewed prices as moving higher. This share steadily rose over the coming years and by 2018, over 95 percent of buyers in all four counties viewed prices as trending upward.

In 2019, homebuyers' optimism began to moderate. Respondents were becoming increasingly apprehensive about another bubble. While 94 percent of Milwaukee homebuyers reported prices were trending higher, the shares fell to 88 percent in Middlesex county, 74 percent in Alameda

and 68 percent in Orange counties. These shares remained relatively stable in 2020, the first year of Covid-19. In 2021, however, nearly 100 percent of respondents in each county viewed prices as trending higher.

Figure 1. S&P/Case-Shiller Home Prices Indexes for the Four Survey Locations,1987-2021
Index, Jan. 2000=100

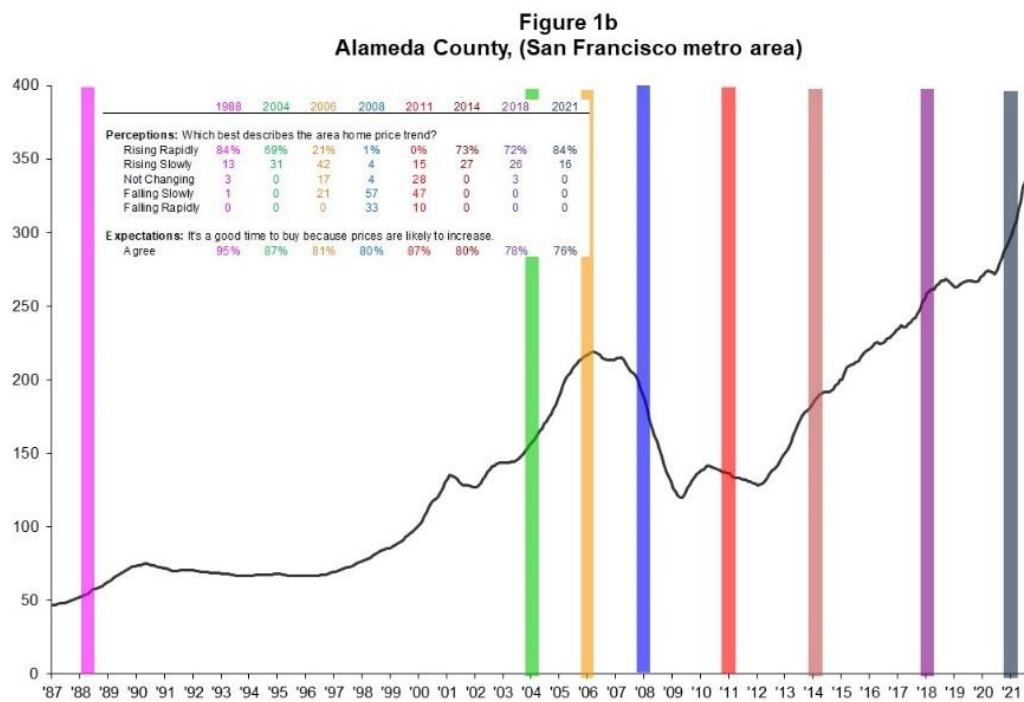
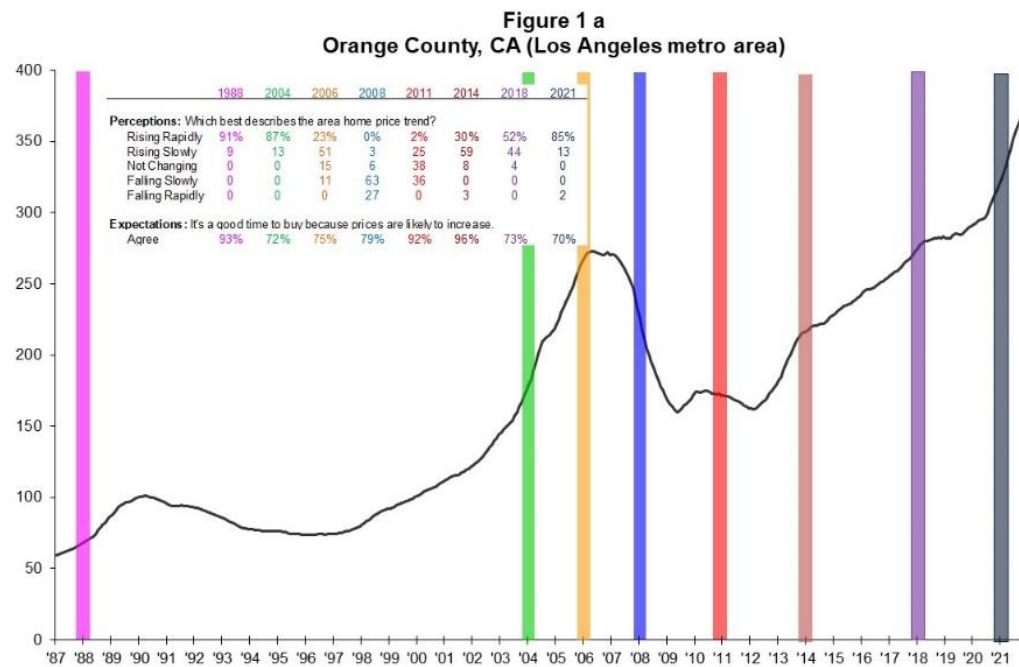


Figure 1c
Middlesex County, MA (Boston metro area)

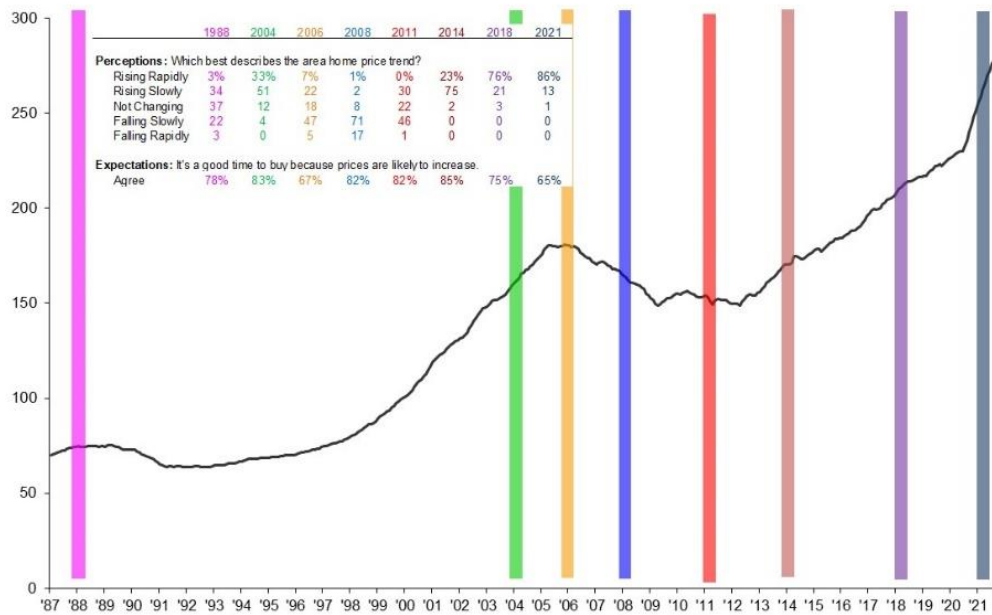
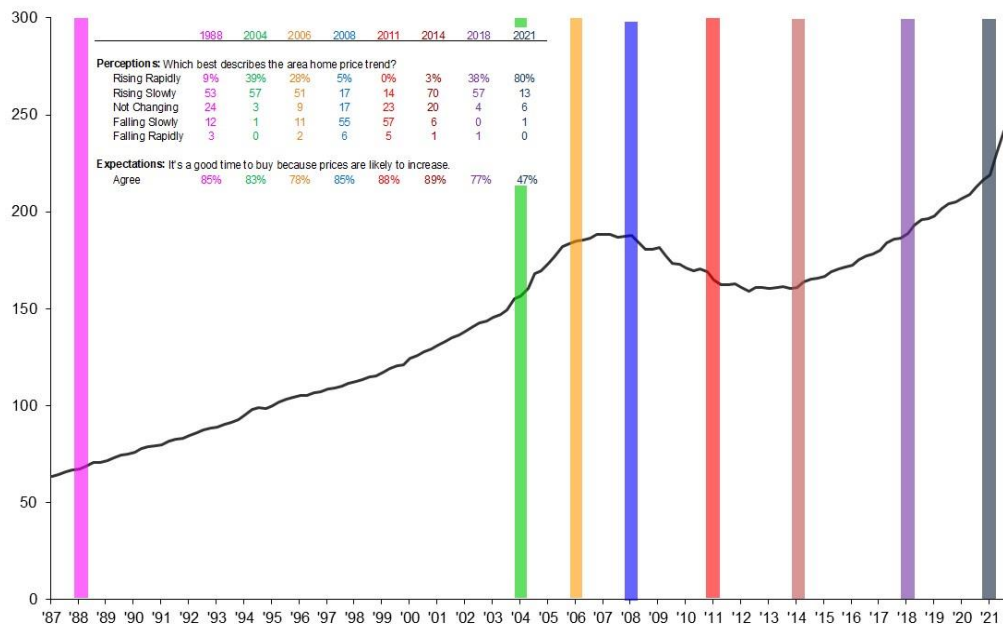


Figure 1d
Milwaukee County, WI



Notice also the answers to the other question reported in figure 1. When asked whether they agreed with the statement, “It is a good time to buy a home because prices are likely to rise in the future,” the vast majority of respondents said yes. On average, through 2020, 85 percent of homebuyers agreed with the statement. In every single survey in every county through 2020, the share agreeing with the statement was never less than 67 percent and in most it was over 80

percent. The unanticipated jump in prices in 2021 made buyers a bit more cautious with expectations of future appreciation falling below the previous low in all four counties. Still, the data for Orange (70%), Alameda (76%) and Boston (65%) counties show that buyers are optimistic. Respondents in Milwaukee County were less so, with just 47% expecting prices to rise in the future.

III. Changing Patterns of Short-Term vs Long-Term Price Expectations

In all our surveys, the questions about expectations come early in the questionnaire, so that respondents' thinking will not be influenced by narratives explored there.

Question 6 asks respondents how much they think their home is likely to increase or decrease in value over the next 12 months. Question 7 asks on average what they think will happen to the value of their home each year over the next 10 years. The wording of these questions has never changed, nor has there been a change in preceding questions, though there was a change in underlining after 1988, and until 2013, when underlining of “on average” and of “each year” was omitted. Table 3 tabulates the answers for every year from 2003 through 2021. One way to think of these results is as the expected value of the average increase in home prices over the *next year* (the short-run expected annual gain; top panel) and the expected value of the average increase in home prices *each year for the next 10 years* (the long-run expected annual gain; bottom panel)

The data in table 3 are trimmed means, calculated after dropping the top 5 percent and the bottom 5 percent of observations. Prior to trimming, we set any Question 7 values that were ten or more times the Question 6 response to the Question 6 value. This was done to correct for potential misinterpretation of Question 7. We then did the trimming because a fair number of responses suggested that the respondent did not understand the question or was simply giving a frivolous answer. We considered a number of different methods of trimming and determined that the results do not change markedly over a wide range of percentages. (For a

full discussion see the appendix to our 2012 Brookings paper.)

Table 3: Short-Term and Long-Term Home Price Expectations, by Survey Location and Year, 2003-21

Trimmed Mean Response (percent)

	Alameda County	Middlesex County	Milwaukee County	Orange County	All
<i>Q6^a: "How much of a change do you expect there to be in the value of your home over the next 12 months?"</i>					
2003	6.9	4.4	5.5	9.0	6.3
2004	8.4	6.7	5.7	12.4	7.9
2005	9.7	6.4	6.6	8.8	7.7
2006	6.2	1.4	4.8	5.1	3.9
2007	4.7	2.8	6.2	-0.1	3.5
2008	-1.4	-0.6	2.0	-2.3	-0.5
2009	2.2	1.9	1.2	0.6	1.5
2010	3.8	2.2	2.8	3.8	3.0
2011	1.4	1.9	1.2	0.3	1.2
2012	4.4	2.2	2.3	3.6	3.1
2013	8.8	4.4	2.9	7.5	5.7
2014	10.0	4.1	5.3	6.1	5.9
2015	8.0	4.9	3.1	5.3	5.3
2016	5.7	4.2	3.6	6.0	4.7
2017	6.1	5.6	4.5	6.1	5.5
2018	7.0	5.7	5.0	4.6	5.6
2019	5.1	4.6	4.5	2.7	4.3
2020	2.2	3.6	4.5	3.4	3.4
2021	6.1	6.1	7.5	6.4	6.3

Q7^{bc}: "On average over the next ten years how much do you expect the value of your property to change each year?"

2003	9.2	6.5	6.1	10.4	7.6
2004	12.7	8.7	8.8	13.3	10.5
2005	10.2	8.3	10.5	10.4	9.6
2006	7.7	7.2	8.7	8.1	7.7
2007	9.1	5.3	7.2	7.6	7.0
2008	7.6	6.4	6.4	9.0	7.3
2009	7.0	5.7	7.7	6.3	6.6
2010	9.8	4.6	6.0	6.0	6.4
2011	6.4	3.8	4.4	7.1	5.2
2012	4.4	3.0	3.2	5.0	3.8
2013	4.9	3.1	3.5	5.4	4.1
2014	7.4	3.8	4.2	7.4	5.3
2015	6.2	3.8	3.0	7.1	4.6
2016	4.7	4.8	3.4	6.0	4.4
2017	5.5	4.3	2.9	6.4	4.5
2018	5.3	3.7	3.4	3.6	3.9
2019	6.2	4.2	3.1	4.8	4.4
2020	3.9	3.1	3.3	4.6	3.7
2021	4.4	4.1	4.0	4.5	4.1

Source: Authors' surveys

a. Q6 - Means are 10 percent trimmed means, that is the highest and lowest 5 percent of responses were dropped before calculating the mean.

b. Q7 Values ten-times or more Q6 were set to Q6 values. Ten-percent trimmed means were then calculated.

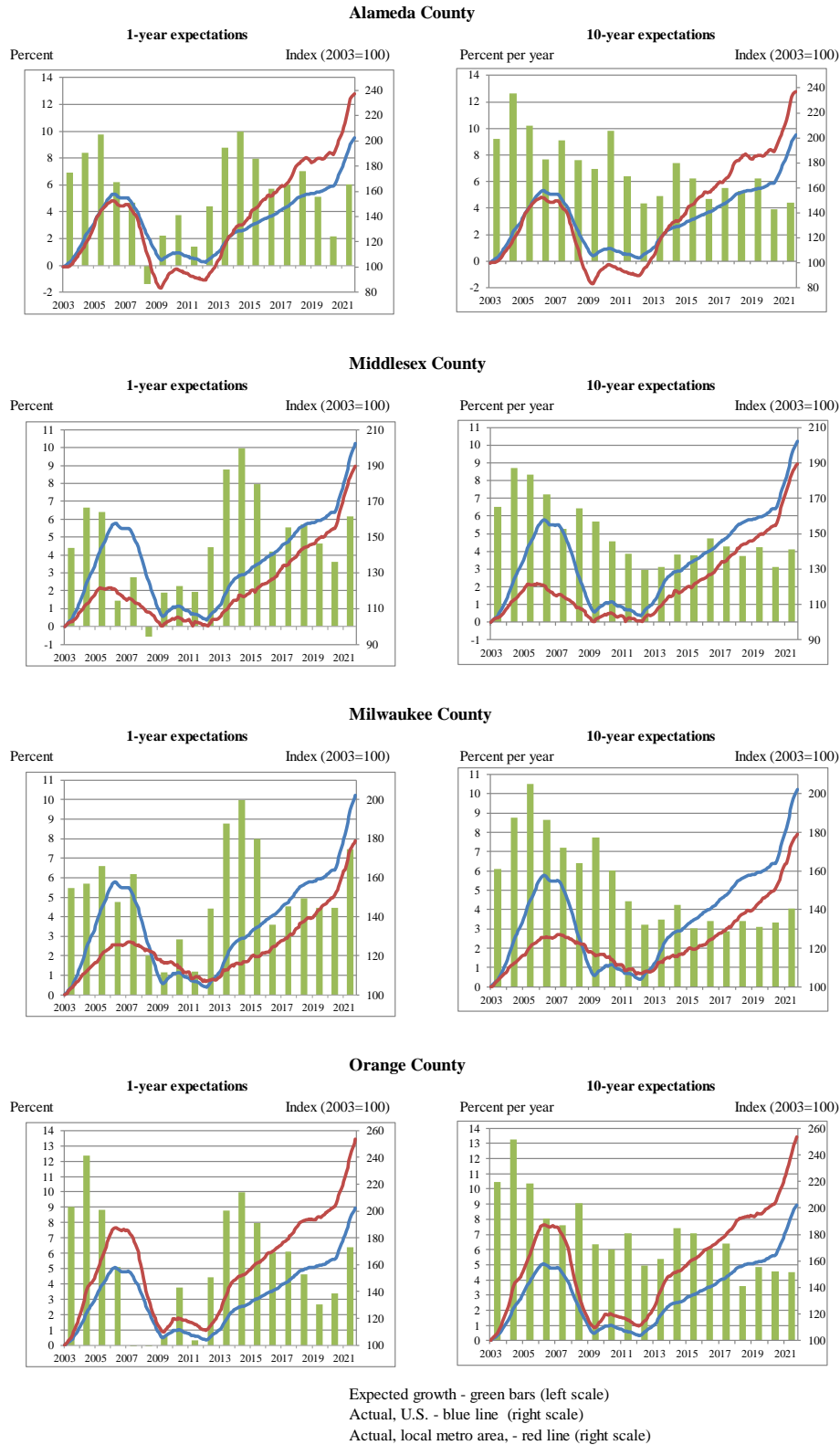
c. Survey Q7; starting with the 2013 surveys, the words "On average" and "each year" were underlined.

To some economists the expectation of price increases in excess of 8 percent per year for 10 years, as occurs at least once in each of the four locations, will seem absurd. But when one computes the actual rates of nominal appreciation in the S&P/Case-Shiller 10-City Price Index (a nationwide measure) from 1996 to 2006, just before the peak, it turns out to be a little above 10 percent per year on average for that 10-year period. Indeed, more than half of our city-specific indexes show 10 years of returns averaging in excess of 10 percent per year. This was taking place precisely as the expectations that we are describing in our survey were being formed.

Figure 2 presents these patterns graphically. The bars in each of the left-hand panels show, for each year from 2003 to 2021, the trimmed mean of our respondents' *1-year* expectation for home prices in each of our four survey locations. Also shown are the S&P/Case-Shiller 10-City index. The right-hand panels show the trimmed means of our respondent's annualized *10-year* expectations, again by location.

A large difference is observed between the 1-year and the 10-year expectations. The 1-year expectations are much more volatile and at times negative, whereas the 10-year expectations follow a simpler pattern, peaking around 2004 and then only gradually declining. The 10-year expectation exceeds the corresponding 1-year expectation in every location from 2003 to 2011. In 2013, one-year expectations rose above ten-year expectations in all locations, indicating that buyers had become more optimistic about price increases over the short term than in the long haul.

Figure 2: Expected Home Price Growth and Actual Home Prices in the Four Counties Surveyed, 2003-21



Sources: S&P/CoreLogic/Case-Shiller, Fiserv, Inc. and authors' calculations from the homebuyer survey data

Both kinds of expectations are important. If 1-year expectations are high, home sellers will

have an incentive to wait another year to sell, while buyers will have an incentive to buy now rather than next year. But when it comes to the decision of whether to buy at all, and comparing the expected rate of return on the investment with the mortgage rate, the longer-term expectations are likely to be more important.

When we presented our 2012 paper at Brookings, discussants questioned whether respondents understood the question about ten-year expectations. They may not be comfortable with defining an average of one-year expectations for ten years. So, in our next, 2013, survey we asked respondents to translate their annualized ten-year expectation to a total ten years increase. We put an additional question 7b at the very end of the 2013 questionnaire, so as not to change the context of other questions on the questionnaire.

7b. (Clarifying question 7 answer) How much higher do you expect home prices to be, in percentage terms, in 10 years?_____

In all four cities, 232 respondents answered both question 7 and question 7b. Of these, 22 percent gave the same answer on both, suggesting that they misunderstood the question. The average over the four cities of the median ten-year annualized one was 6.1. Only one respondent mentioned compounding. This sole respondent said that the ratio should be a little over ten, because of the power of compounding.

Table 4 presents yet another way of looking at the expectations data. Here we look at expectations since 2003, both short- and long-term, and at actual rates of change in nominal home prices annually from 1996 through 2021 for Orange (top panel) and Middlesex (bottom panel) Counties.

Table 4: Actual v. Expected Short and Long-Term Home Price Expectations in Orange and Middlesex Counties

<i>Orange County</i>				
	Expected Annual Value Increase			
Year	Next Year (%)	Annualized Next 10 Years (%)	Actual 1-year price increase (%)	Implied value of a home worth \$100,000 in 2000
2000	n.a.	n.a.	--	100,000
2001	n.a.	n.a.	9.8	109,801
2002	n.a.	n.a.	11.8	122,727
2003	9.0	10.4	18.3	145,130
2004	12.4	13.3	31.2	190,457
2005	8.8	10.4	18.6	225,916
2006	5.1	8.1	15.1	259,942
2007	-0.1	7.6	-3.2	251,605
2008	-2.3	9.0	-24.3	190,505
2009	0.6	6.3	-19.7	153,027
2010	3.8	6.0	8.8	166,465
2011	0.3	7.1	-3.1	161,350
2012	3.6	5.0	-2.2	157,723
2013	7.5	5.4	19.1	187,794
2014	6.1	7.4	12.1	210,556
2015	5.3	7.1	6.0	223,154
2016	6.0	6.0	5.5	235,381
2017	6.1	6.4	5.4	248,123
2018	4.6	3.6	7.7	267,204
2019	2.7	4.8	1.6	271,367
2020	3.4	4.6	3.8	281,685
2021	6.4	4.5	16.8	328,987

<i>Middlesex County</i>				
	Expected Annual Value Increase			
Year	One-Year (%)	Ten-Year (%)	Actual (%)	\$100,000
2000	n.a.	n.a.	--	100,000
2001	n.a.	n.a.	16.4	116,359
2002	n.a.	n.a.	10.7	128,809
2003	4.4	6.5	11.2	143,235
2004	6.7	8.7	9.5	156,846
2005	6.4	8.3	8.4	170,062
2006	1.4	7.2	-1.3	167,824
2007	2.8	5.3	-4.1	160,952
2008	-0.6	6.4	-5.9	151,460
2009	1.9	5.7	-6.9	141,003
2010	2.2	4.6	4.3	147,093
2011	1.9	3.8	-3.3	142,244
2012	2.2	3.0	-0.2	141,985
2013	4.4	3.1	7.3	152,324
2014	4.1	3.8	8.0	164,452
2015	4.9	3.8	2.3	168,186
2016	4.2	4.8	5.2	177,003
2017	5.6	4.3	6.3	188,076
2018	5.7	3.7	6.8	200,798
2019	4.6	4.2	3.7	208,177
2020	3.6	3.1	4.0	216,477
2021	6.1	4.1	17.4	254,061

Sources: S&P/Case-Shiller, Fiserv, Inc., and authors' calculations from homebuyer survey data.
n.a.= not available

When asked to project how much their home's value would increase or decrease in the next twelve months as well as in each of the following 10 years, homebuyers in both locations were optimistic. But even these expectations were not unreasonable given the performance of the market before 2006. Price increases in Orange County were actually accelerating after 2000, and long-term expectations remained solid as long as prices continued to rise. In general, expectations were not as volatile on the upside and less so on the downside. On the upside, they underestimated the magnitude of the increase in 2004 by 19 percent. When prices started falling sharply in 2007 and 2008, buyers continued to expect healthy price appreciation each year over the next 10 years, and even their 1-year expectations resisted the idea that the severe drops that were already occurring would continue. They underestimated the scale of the decline by more than 20 percent in 2008. The range of actual price changes from 2003 to 2009 was 56 percent. The expected one-year (15%) and annual ten-year (7%) were far lower. Middlesex County observed similar, but less pronounced differences between actual and expected rates of change.

While actual prices in both counties improved alongside the homebuyers' tax credit in 2010, they headed lower once the credit was no longer available. Prices turned the corner again in 2013, rising month-over-month and year-over-year in all four counties. In Orange County, prices rose by double-digit rates in 2013 (+19.1%) and 2014 (+12.1%). Home price appreciation was more tempered in Middlesex County, rising 7.3 percent in 2013 and 8.0 percent in 2014. In both counties, short and long-term expectations fell below actual appreciation in both years and the annualized expected increase in home prices for each the next ten years fell below the 1-year expectations for the first time in 2013.

The rate of growth in home prices in both counties fluctuated between 2015 and 2020. In Orange County, growth varied between 1.6 percent and 7.7 percent. Middlesex county saw

appreciation range between 2.3 percent and 6.8 percent during the six-year period. Actual, one and ten-year and one-year expect home price changes were closely in synch. Prices in all four counties soared in 2021. Orange County prices jumped 16.8 percent from a year earlier and Middlesex County prices surged 17.4 percent. Alameda (18.4%) and Milwaukee (14.5%) also saw prices jump in 2021. All counties vastly underestimated the change in prices over the coming year. Why such steep price gains occurred in the midst of the Covid-19 pandemic is a question we will try to begin to answer later in this paper.

IV. Short-Term Expectations Continue to Be Largely Rational, though Hyporeactive

We can test whether the expectations of our homebuyers were rational by regressing actual home price changes on the expected changes. The coefficient of expected changes should be close to one and the constant term zero. With our present data set we can do this only for the 1-year expectations, since we have limited 10 years of subsequent price data. The majority of the surveys in each year were returned in the second quarter, so we calculated the actual price change in each metro area as the percentage change in the S&P/CoreLogic/Case-Shiller Home Price Index for that area from one second quarter to the next. Under traditional rational expectations theory, the constant term in these regressions should be zero, and the slope coefficient should equal +1.

The top panel of table 5 reports the results. In all four survey locations the slope coefficients are statistically significant and have the right sign, but they are always greater than one. (The constant term is always negative, reflecting a necessary correction for the mean when the slope coefficient is greater than one.) This may be interpreted as implying that homeowners had information that was relevant to the forecast but were not aggressive enough in their forecasts. While the significance and sign of our results here concur with our 2012 results, there are differences in magnitude. The previous R-squared values were much higher across all locations

and the constants and slopes were lower. This can be explained in part by the reduction in outliers over the past decade.

Table 5. Regressions Testing for Rational Expectations of One-Year Change in Home Prices^a

	Survey Location				
	Alameda County	Middlesex County	Milwaukee County	Orange County	All
<i>Using S&P/CoreLogic/Case Shiller Home Prices Indexes</i>					
Constant	-4.64 (6.41)	-2.39 (2.91)	-2.24 (2.88)	-6.68 (3.73)	-4.87 (1.94)
Trimmed-Mean Own-City Expected 12-Month Change (Q6)	1.84 (1.02)	1.57 (0.70)	1.32 (0.67)	2.64 (0.64)	2.07 (0.37)
Nobs	18	18	18	18	72
R Squared	0.17	0.24	0.19	0.51	0.31
<i>Using FHFA home price data^b</i>					
Constant	-2.07 (4.18)	-1.87 (2.87)	-2.09 (3.40)	-5.88 (3.45)	-3.91 (1.62)
Trimmed-Mean Own-City Expected 12-Month Change (Q6)	1.38 (0.67)	1.41 (0.70)	1.31 (0.79)	2.56 (0.59)	1.89 (0.31)
Nobs	18	18	18	18	72
R Squared	0.21	0.20	0.15	0.54	0.34

Source: Authors' regressions using data from S&P/CoreLogic/Case-Shiller and FHFA Home Price Indices 2004–2021 and data from our surveys 2003–2020.

a. Each column in each panel reports results of a single regression for a location.

The dependent variable is the actual percentage home price change in the city from the second quarter of the year to the second quarter of the following (future) year.

The independent variable is the expected future 12-month price change (10% trimmed mean) from our surveys in the current year. Standard errors are shown in parentheses.

b. All FHFA transactions were used in the 2012 version of this paper. The FHFA Index here is limited to purchases only transactions.

Contrary to what one might expect from popular stories about bubble mentality, then, the 1-year expectations of homebuyers were not *overreacting* to information, but rather *underreacting* to it. However, this is not necessarily inconsistent with the presence of a bubble. Certainly, the longer-term expectations, whose rationality is harder to judge, seem likely to have been more in line with information in the early years of our sample when they were predicting appreciation of over 8 percent a year for the next 10 years.

The above results do not depend on using the S&P/Case-Shiller Home Price Indexes to measure actual price changes. Substituting the home price indexes of the Federal Housing Finance Agency (FHFA, formerly the Office of Federal Housing Enterprise Oversight,

OFHEO) Purchase Only Index yields rather similar results (bottom panel of table 5).

Scatter diagrams of actual against expected 1-year price changes for the four metro areas (figure 3a) and four different time periods (figure 3b) convey how far individuals misjudged the absolute magnitude of home price movements. This is true both on the down side and the up side. While individuals in all areas underestimated price movements, Alameda and Orange counties stand out in terms of the scale of misestimation.

Examining these relationships over time reveals that the degree of miscalculation on the upside was largest from 2003 to 2006, when actual price changes greatly exceeded expectations. Not surprisingly, on the downside this occurred between 2007 and 2011. Although prices were plummeting, few expected them to decline at all, and certainly not to the degree that they did. The outliers from 2012 to 2016 occurred primarily in 2012 and 2013. Respondents were cautious coming out of the market collapse but prices rebounded, especially in Alameda and Orange counties. The 2017 to 2021 extremes all occurred over the last year. The double-digit 2020-2021 jump in home prices that occurred during the pandemic across all four metros and nationwide came as a surprise to almost all of our respondents.

Figure 3a. Expected versus Actual One-Year Change in Home Prices, 2003-2020^a

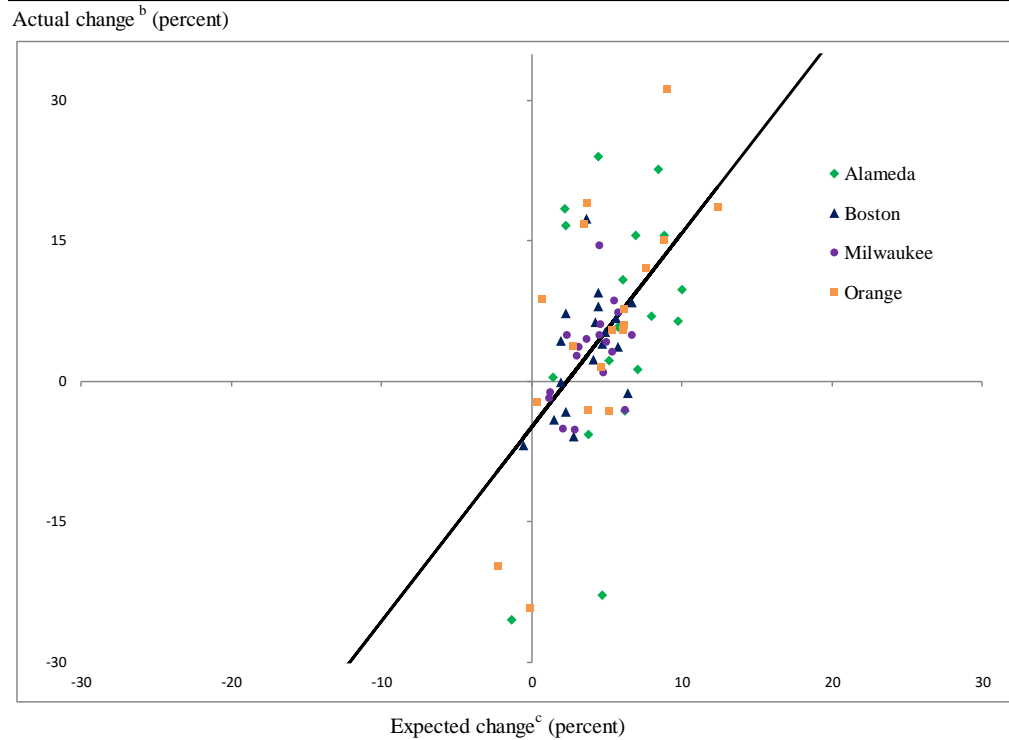
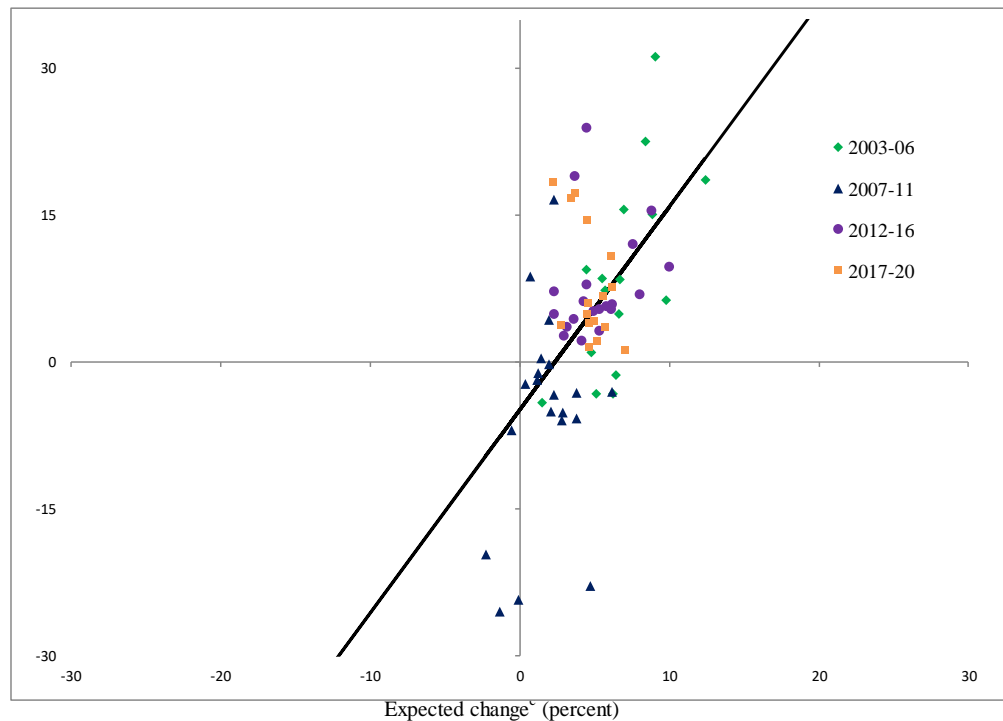


Figure 3b. Expected versus Actual One-Year Change in Home Prices, 2003-2020^a



Source: S&P/Case-Shiller, and authors' calculations from survey data.

a. Each observation represents one of the four survey locations in a single year.

b. Actual change in metro-area home prices from the second quarter of the survey year to the second quarter of the next year.

c. Trimmed mean of respondents' expected change in home prices for the next year.

We can test the rational expectations hypothesis further by adding to the regression other

variables reflecting information available to homebuyers when their expectations were recorded. These other variables should have a coefficient of zero if their expectations were rational. We tried two such variables: the actual lagged 12-month price change in the same metro area and the actual lagged 12-month price change for the United States as a whole, as measured by the S&P/Case-Shiller 10-City Home Price Index. Rational expectations would imply that the coefficient of the one-year expectation should remain at 1.00 and the other variables and constant term should be zero. As table 6 reports, both of these variables' are insignificant. This is consistent with the rational expectations hypothesis for the 1-year forecasts: respondents are not missing this other information in making their forecasts.

Table 6: Regressions Testing for Rational Expectations of the One-Year Change in Home Prices with Additional Information Variables^a

<i>Independent Variable</i>	<i>All Cities</i>
Constant	-5.15 (2.78)
Own-City 12-month price change (percent) ^b	2.17 (0.73)
Lagged own-city 12-month price change (percent)	-0.03 (0.23)
Lagged national (10-City) actual 12-month price change (percent)	-0.01 (0.21)
Number of observations	72
R Squared	0.30

Source: Authors' regressions using S&P/Case-Shiller Home Price Index 2004–2021 and data from our surveys 2003–20.

a. The dependent variable is the actual percentage home price change in the city from the second quarter of the year to the second quarter of the following (future) year. The first independent variable is the expected future 12-month price change from our surveys, the second is past actual annual price change from the same city, and the third is the past annual U.S. national home price change (S&P/Case-Shiller 10-City Index). Standard errors are in parentheses.

b. Trimmed mean of responses to question 6 of the homebuyers survey.

Table 7 reports results of regressions in which the actual and expected price changes switch

sides in the equation and the time lag is reversed: we regress the 1-year expectation on the lagged actual 1-year price change. This allows us to see whether there is a simple structure to expectations. The R^2 s in these regressions are substantial and in line with our previous work, ranging between 0.67 and 0.84. Of course, the slope coefficient is less than 1, because as we have noted, expectations are less volatile than actual price changes.

Table 7. Regression of Expected One-Year Change in Home Prices on Lagged Actual Price Changes^a, 2003-2021

Independent Variable	Survey location				All
	Alameda County	Boston County	Milwaukee County	Orange County	
Constant	4.53 (0.44)	2.85 (0.31)	3.25 (0.27)	3.20 (0.37)	3.49 (0.18)
Lagged Own-City Actual 12-Month Home Price Change (%)	0.18 (0.03)	0.25 (0.04)	0.27 (0.04)	0.24 (0.03)	0.22 (0.02)
Nobs	19	19	19	19	76
R Squared	0.67	0.67	0.71	0.84	0.72

Source: Authors' regressions using S&P/Case-Shiller Home Price Index 2003–2021 and data from the homebuyers surveys 2003–21

a. Each column reports results of a single regression. The dependent variable is the trimmed mean of the expected 1-year change in home values in the indicated location.

Thus, the 1-year expectations are fairly well described as attenuated versions of lagged actual 1-year price changes, and yet we know from table 6 that they also contain significant information about future price changes beyond what is contained in the lagged actual price change. This conclusion does not mean, however, that any story of feedback in determining price should be modeled in rational terms. Long-term expectations also matter importantly for demand for housing, because as previously noted, they are important to people's decisions about whether to buy a home at all.

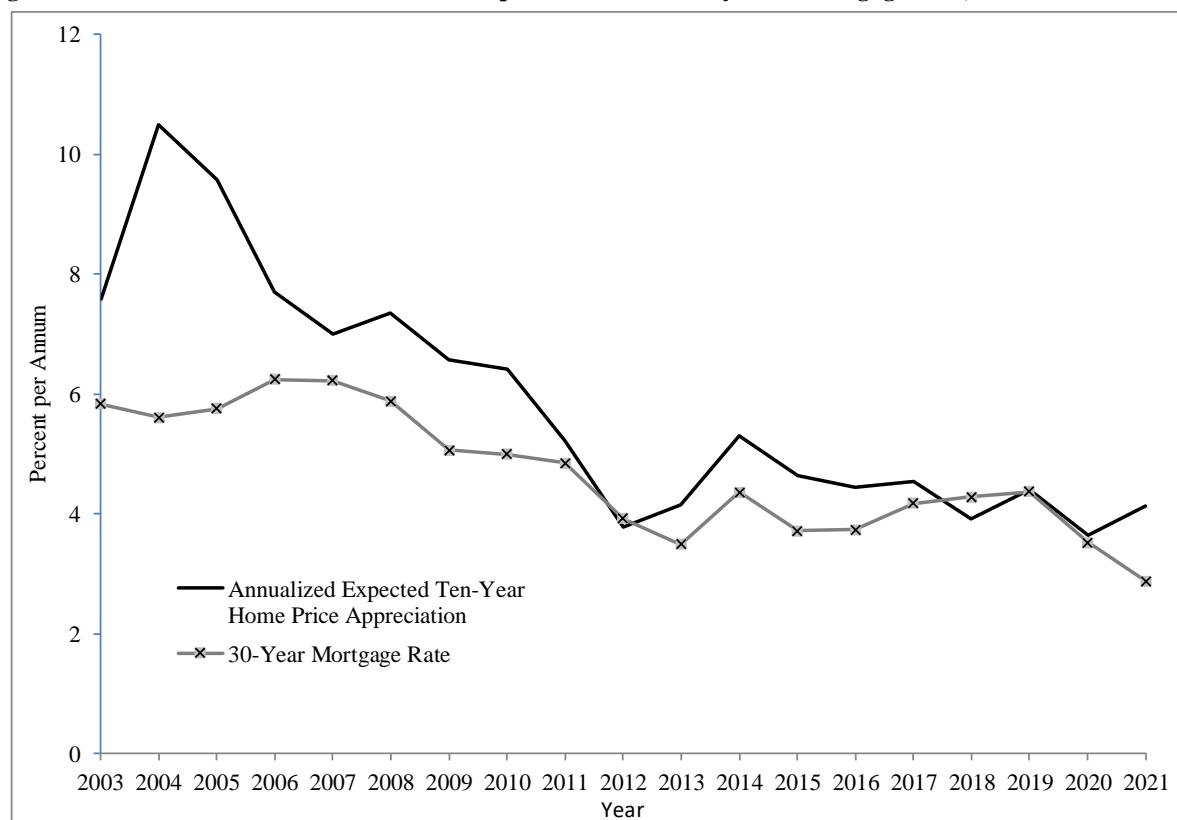
As John Maynard Keynes suggested in his 1936 *General Theory of Employment, Interest and Money*, it is long-term expectations that may be the real driver of speculative booms, even though these expectations are not normally the focus of economic forecasters. It may be a general expectation about the vague and distant future that helps explain why people behaved in

the 2000s as if they thought that home prices could never fall: perhaps they thought so only about the long run, as our 10-year expectations data seem to confirm.

Figure 4 shows annualized 10-year expectations of home price appreciation from our survey, averaged across our four locations, along with the national-average 30-year mortgage rate, from 2003 to 2021. These two series are roughly matched in term, since the average actual duration of a mortgage in the United States, before a move or a refinancing or the like, is about 7½ years, not the contractual 30 years. As the figure shows, these expectations, if they could have been trusted, implied enormous profit opportunities in buying a home around 2004: the spread between the two series was roughly 5 percentage points. Leveraging their investment 10 to 1 (as one does when taking out a standard conventional mortgage), our homebuyers in 2004 would have expected to multiply that 5-percentage-point spread by 10 (after taking the other expenses of homeownership into account). This helps explain the bubble enthusiasm of that time.

After 2004, however, long-term expectations fell faster than mortgage rates, so that this expected profit opportunity narrowed, sharply at first and then more gradually. Neither monetary stimulus nor the other policy measures applied in the wake of the financial crisis—neither lower interest rates, the federal conservatorship of Fannie Mae and Freddie Mac, the Public-Private Investment Program, quantitative easing, nor Operation Twist—succeeded in lowering mortgage interest rates by anything like the decline in expectations.

Figure 4: Ten-Year Annualized Home Price Expectations and Thirty-Year Mortgage Rate, 2003-21



Source: Authors' calculations annualized ten-year expectation is trimmed mean of responses to question in authors' survey. Average of trimmed means for all survey respondents. Freddie Mac's Primary Mortgage Market Survey.

By 2012, as figure 4 shows, long-term expectations had fallen to a level practically equal to the mortgage rate, suggesting that homebuyers no longer perceived a long-term profit opportunity in investing in a home. This has not changed much over the past decade. Both long-term expectations for home price increases and mortgage rates have been relatively stable. Since a sample consisting only of homebuyers is likely to be upwardly biased in terms of expectations relative to the population as a whole, the perceived investment opportunity among the general population may be even lower. A survey of professional forecasters conducted by Pulsenomics LLC suggests that these professionals are less optimistic than our respondents. Their average expectation for annual home price appreciation for 2012–16, reported in the June 2012 Pulsenomics survey, was 1.94 percent, about half the 10-year expectation of the homebuyers in our 2012 survey. Their average expectation for annual home price appreciation

for 2014-18 in their fourth-quarter 2014 survey was 3.64 percent, closer to, but still below, the 10-year expectation of homebuyers in our 2014 survey. The fourth-quarter 2018 survey included average annual expected price change through 2023. In 2020 and 2021 the average was 2.48 percent, below the annualized 3.9 percent rate predicted by homebuyers and far lower than the actual change in the S&P/CoreLogic Case-Shiller 10-city Index where annual growth averaged 9.9 percent in 2020 and 2021.

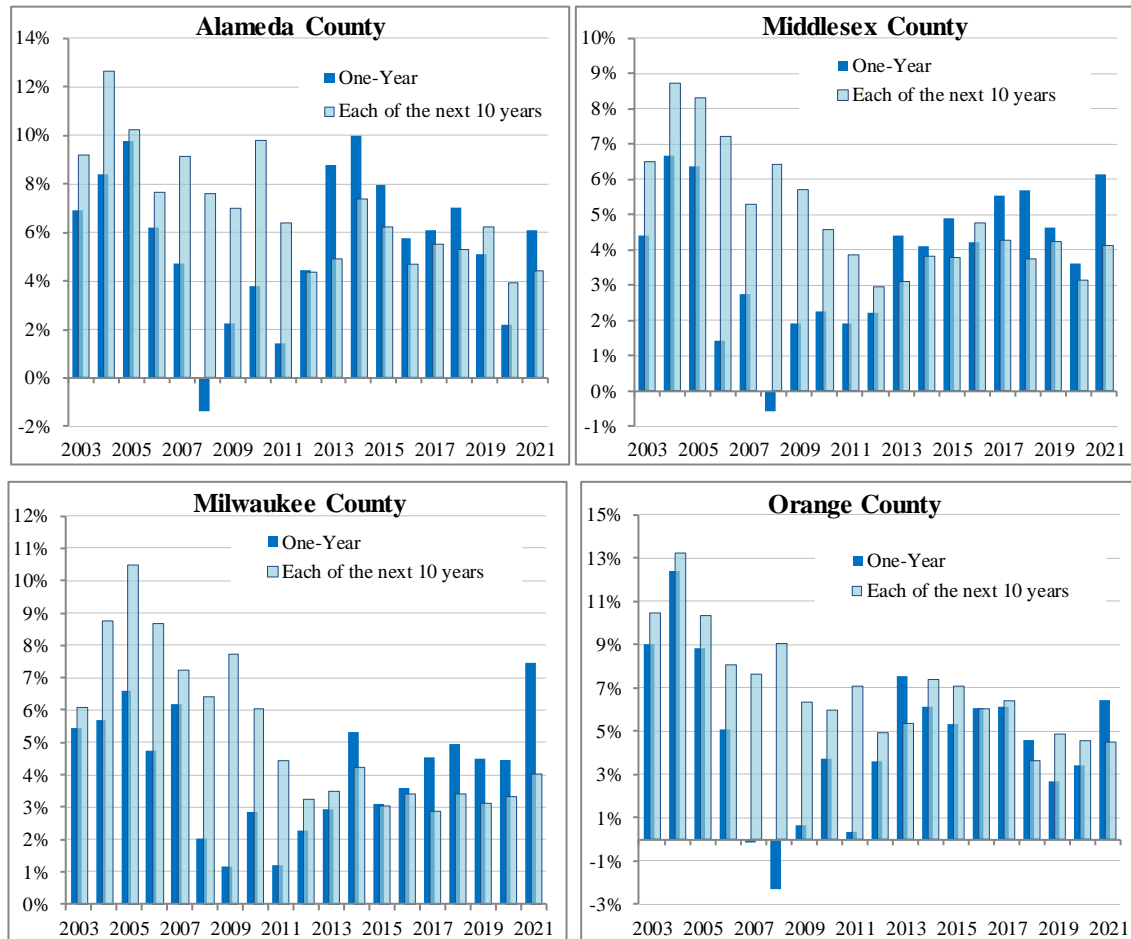
Why were home price expectations so high relative to interest rates around 2004? Some simple stories come to mind but cannot be proved or disproved with any data that we know of. One is that these long-term expectations were formed over many decades during which home prices more or less consistently rose. Another is that money illusion plays a role: people may fail to consider that with lower overall inflation today than in past decades, home price increases are likely to be smaller than in the past.

Notably, the peak in expectations during the 2000s boom occurred 2 years before prices began to fall, 3 years before the beginnings of the subprime crisis, and 4 years before the most intense phase of the crisis in late 2008. This, together with the fact that the decline in expectations was fairly steadily downward between 2004 and 2012, show that the crisis cannot be the cause. Perhaps that should not be altogether surprising, for the crisis was presented to the public as just that—something short-term. It was associated with an economic recession, and all recessions in recent decades have been short. So perhaps it was not so much the crisis itself, as its surprising duration that gradually contributed to bringing expectations further down.

People's expectations have certainly moderated over the past eight years. Short term expectations, remained below the annualized ten-year level in nearly every county and year during the boom, bust and initial years of the recovery. More recently, short term expectations have mostly surpassed the annualized long-term projections. In addition, the magnitude of these

differences has dwindled. This may indicate that the irrational exuberance that was common during the boom, thus leading to a market collapse is less likely this time around. Only time will tell if this is really the case.

Figure 5: Expected One-Year and Annualized Ten-Year Value Change by County



V. The Housing Bubble Narrative Has Weakened since the 2007-2009 Financial Crisis

Our sample period includes two major turning points in the housing market, the sudden, historic end of the housing bubble in 2006, and the ten-year upswing in the market that began in 2012.

Understanding these turning points is central to our objectives. Unfortunately, we observe only two such events in our sample period. But we do have some qualitative information.

There was the turning point in home prices, some time between 2004 and 2007, when long-term home price expectations dropped 3.5 percentage points. Fernando Ferreira and Joseph

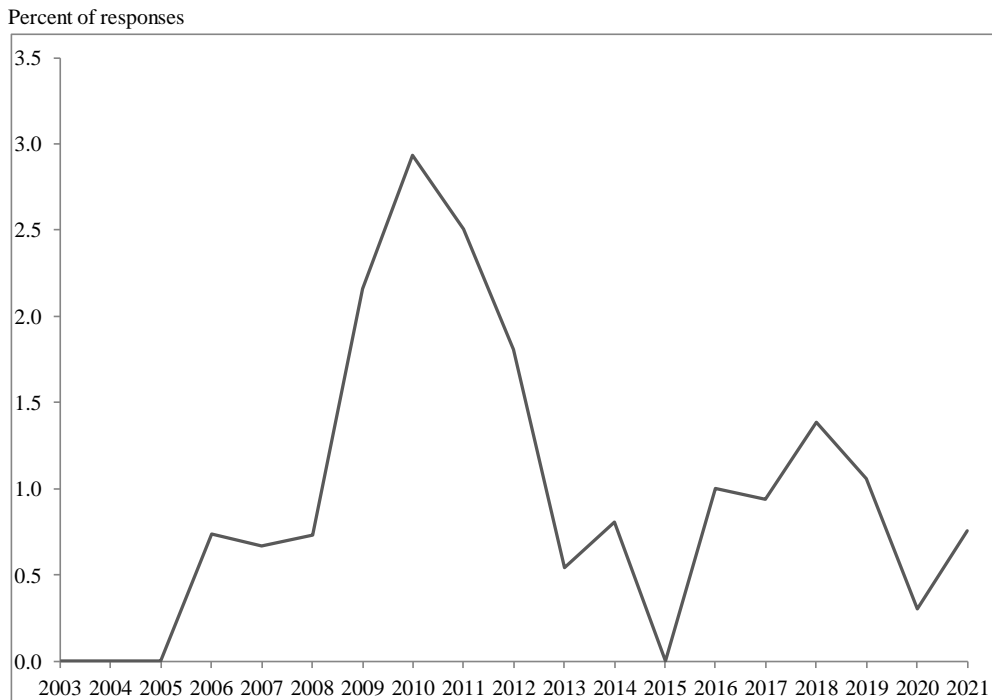
Gyourko (2011) found that while the beginning of the real estate boom took place at different times in different regions, in all regions the end came at roughly the same time, by 2006. The common themes in 2004 included a “shortage of houses,” a large number of “immigrants,” “scarcity of land,” “lack of building space,” “too many people,” and “the desire to have it all.” These answers are mostly consistent with perceptions of a shortage of supply. Only occasionally did respondents mention in 2004 that affordability might be an issue. By 2006 the optimistic themes of 2004 were still in evidence but were less prevalent. The most common theme in 2006 was “rising interest rates.” Some themes were mentioned repeatedly, in different forms, as suggested by answers such as the following: “high prices,” “no equivalent rise in wages,” “overvalued homes,” “numerous newspapers & media articles speculating on/or reporting on slowing sales,” and “astronomical price spikes of previous 2 years simply cannot be sustained.”

While the tone of responses went from positive to negative between 2004 and 2007, the opposite occurred between 2009 and 2013. The most common theme in 2009 was the economic downturn and recession, with nearly 25 percent of respondents mentioning this problem. Other common themes in 2009 were “rising unemployment,” “foreclosures,” “banking crisis,” “stock market decline” and “sub-prime loans”. In 2013, the improving economy was mentioned by more than 25 percent of respondents. Other common responses in 2013 included: “fewer foreclosures,” “rising consumer confidence,” “low interest rates,” “low inventory” and “investors”.

As figure 6 shows, the phrase “housing bubble” did not appear in a single handwritten response in 2004, although one respondent used the term in 2003. By 2006, however, the word was being volunteered by a few respondents. As time went on after the crisis, the percentage mentioning “housing bubble” rose, until by 2010 over 3 percent of the respondents were using the term. It fell back in 2011 and between 2013 and 2015, “housing bubble” appeared in fewer

than 1 percent of responses. The phrase reappeared in 2016 and continued to be used through our 2021 survey. In all of these cases respondents were anticipating a coming bubble, not referring to the financial crisis. The 2010 first-time homebuyer tax credit was frequently mentioned that year. Alongside this credit there was a sharp increase in the percent of respondents that mentioned they preferred not to rent. This share has remained above 15 percent since that point.

Figure 6: Appearance of "Housing Bubble" in Homebuyers Survey Responses, 2003-21^a



Source: Authors' calculations from homebuyer survey data.

a. Share of respondents who used the words "housing bubble" anywhere in their answers to the homebuyer survey.

VI. Comparing the Boom that led to the Financial Crisis 2007-9 with the Boom since 2012

There was a real flight of fantasy in home price expectations in the years leading up to the financial crisis of 2007-2009. This is confirmed by the ProQuest search shown in figure 7. A “house flipping” narrative took hold, many stories of fortunes being made by amateur buyers of houses who resell in a matter of months to win great profits. We see that attention to flipping took hold in 2004, alongside the boom and crested in early 2007, following the 2006 peak in the U.S. housing market. Narratives from before the crisis made some flippers into mini-celebrities.

There is a new name for this in the Internet age, “going viral” which likens the progress of a narrative to a disease epidemic.

In the runup to the home price market peak in 2006, there were some viral economic narratives. For example, the reality television show *Flip This House* (2004-13) on A&E, made heroes out of people who get rich buying, fixing up, and quickly reselling houses. One of these people was Armando Montelongo, who was a real estate speculator and motivational speaker. He published a book “*Flip and Grow Rich: The Heart and Mind of Real Estate Investing*, 2008. The title was a parody of Napoleon Hill’s 1937 classic self-help book, *Think and Grow Rich*. Montelongo was depicted on television as decisive, tough, manly, a fighter, but at the same time down to earth. Many viewers of the TV show could identify with him. This show appeared at almost the same time as *The Apprentice* starring Donald Trump, (NBC 2004-2013) which had a similar theme and personality and the idolizing of authors of self-help books.

The attention to house flipping faded away for a few years during the 2007-09 financial crisis, and the sudden takeoff from when home prices increase was in negative territory. It began to rise again in 2012. A number of new reality television shows sprouted up during the following years. Among these were: *Property Wars*, which debut on the Discovery Channel in 2012; *Flip or Flop* (2013) and *Masters of Flip* (2015) on HGTV. During this flipping revival a number of shows focusing on metropolitan areas were also introduced. Our data also show that expectations for future home price increases also rose in 2012, following the same feedback response to actual price increases that we observed in the first version of this paper, as shown for short-term expectations in table 7.

Celebrities like Montelongo were still trying to cash in on investor excitement that was so strong in the years before the 2007-9 financial crises. In his 2013 edition of *Flip and Grow Rich* Montelongo wrote, “Housing prices are hitting all-time lows, and this will be the greatest time to

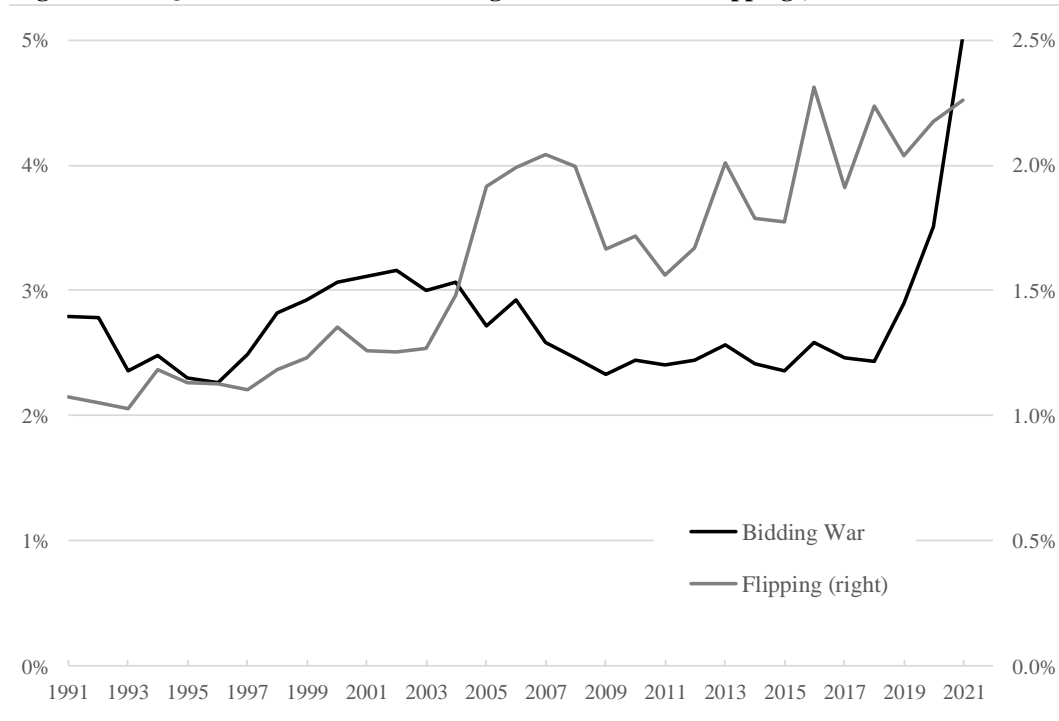
make money for the next 40 years. Imagine making more money in 24 months than in the next four decades.” He was factually wrong in saying that housing prices were hitting historic lows, but he was right about how to entice people into speculating in real estate.

These stories, and others like them, have been very much on the minds of the general public, in contrast to the rarer references to institutional investors. People in the television show production business will say that narratives about brilliant professionals may not be “aspirational” meaning that they do not feed most viewers’ imaginations on how they themselves could really achieve on a high level and ultimately win more respect.

In the 2020s there has been a lot of talk in the news media about institutional investors who are massively investing in homes they will rent out. But these narratives are not going to have the same currency as those of the flippers. They do not stir emotions among people who have never tried to imagine themselves as institutional investors.

Few homebuyers flip houses, instead they are buying a place to live in. But in making the decision to offer a large sum of money, and tying themselves into a large stream of future mortgage payments, they can imagine themselves as like those flippers.

Figure 7: ProQuest Web Search for Bidding War^a and House Flipping^b, 1991-2021



Source: <http://www.proquest.com>: ((home* or hous*) and (real estate*))

a. and (bid* war*)

b. and flip*

Most Americans have very little experience with bidding wars. The bulk of purchases are retail, at a price which is nonnegotiable, ever since the 19th century when department stores like Bon Marché and Wanamaker's began to advertise that they demand exactly the asking prices to all customers; prices were strictly nonnegotiable.

The idea of bidding wars in real estate, where multiple interested parties make offers on the same property, rose during the late 1990s and early 2000s before slipping toward the end of the housing boom. Today, bidding wars are a prevalent phenomenon in real estate. An average of just 2.5 percent of housing and real estate articles mentioned bidding wars between 1991 and 2019. In 2020 it rose to 3.5 percent and surged to 5.0 percent in 2021.

Prior to listing a property, sellers are guided by real estate agents and, increasingly, by Internet searches on how to price their home⁷. In a tight market, this often includes strategies to induce a

⁷ See for example <https://www.zillow.com/sellers-guide/how-to-price-home-to-sell/>

bidding war⁸. Many home buyers, particularly those new to home ownership, face a steep learning curve. Bidding wars are an unfamiliar experience for many at the beginning of their home search, but frequently a familiar one by the time they close on a home.

As with sellers, buyers often turn to realtors and the Internet for home buying tips. The media is flooded with articles on the best strategies to use to increase a buyer's chance of winning a bidding war⁹. You might even think that asking prices should be irrelevant, since actual sales prices occur both below and above the asking price. But they are not irrelevant, since a substantial fraction of sales are exactly at the asking price (Han and Strange, 2016). There is an inscrutable psychological game developing in the housing market, that may increasingly favor speculative impulses¹⁰.

Redfin reports bidding war rates based on offer competition. Among Redfin realtors, the rate has increased dramatically since they began compiling this information. In April 2020, near the start of the Covid-19 crisis, a seasonally adjusted 33 percent of Redfin offers faced competition. By January 2021 this rate had risen to 61 percent and in January 2022 it reached 70 percent. One can't help but wonder whether growth in bidding wars is a contributing cause to the rise in home prices during the pandemic.

VII. The Expected vs. Actual Impact of the Coronavirus

The first confirmed case of the novel coronavirus in the US was reported on January 21, 2020. The virus spread in the US and abroad and on March 13, 2020 the US declared a Covid-19 national emergency. By the summer the epidemic looked much worse.

The 2020 Homebuyer Survey was sent out in early July, to those who closed on a home in the first quarter of the year. Thus, most of these home buyers had purchased their home before the

⁸ See for example https://www.brickunderground.com/blog/2014/05/managing_bidding_war

⁹ See for example <https://realestate.usnews.com/real-estate/articles/how-to-win-a-bidding-war-on-a-house>

¹⁰ <https://www.theglobeandmail.com/real-estate/picking-a-price-can-be-perilous/article711489/>

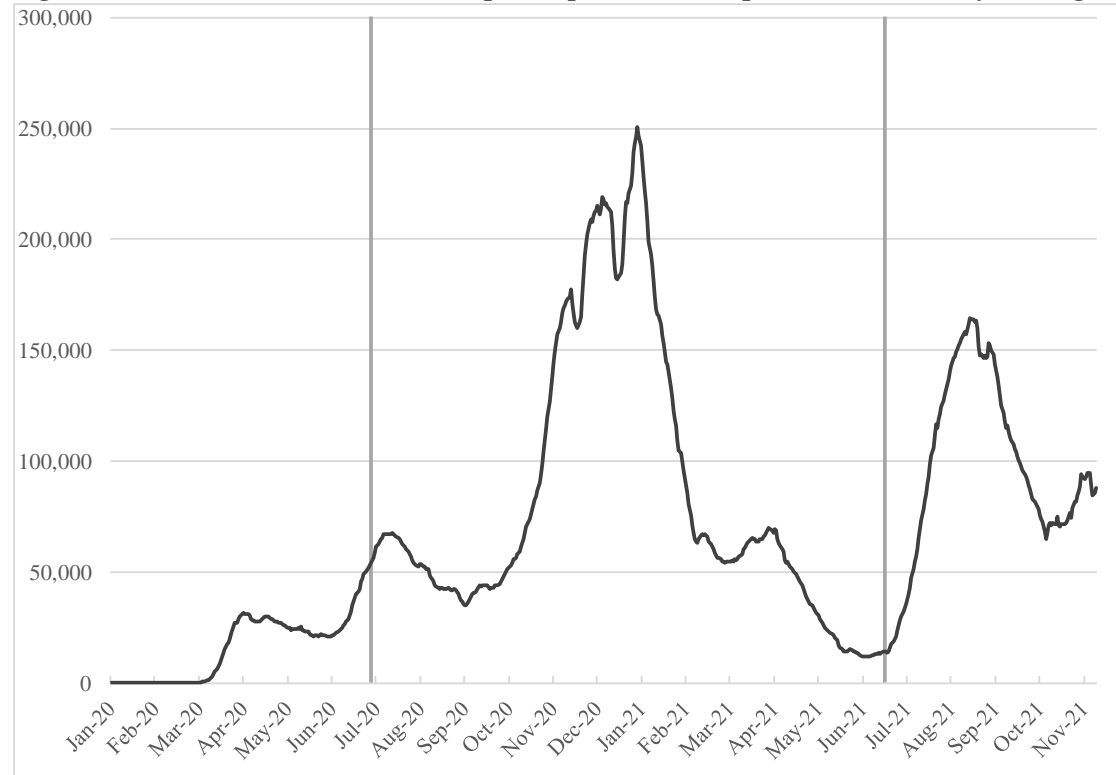
national coronavirus emergency was declared, but after a huge amount of attention in the media was paid to the coronavirus.

Google Trends search for “coronavirus” shows a sharp peak in March. This was a panic time, with a 33.9% drop in the S&P500 in just over a month from February 19 to March 23, 2020, and an increase in the unemployment rate to 14.7% in March 2020, the highest since the Great Depression. A search of ProQuest News & Newspapers shows that the phrase “since the great depression” was used 3,368 times in April and May 2020 alone, invariably making a comparison between then and now of unemployment or other indicators of the economy. The newspapers’ reporting of these comparisons appears to be motivated to give a dramatic interpretation to current events, when in fact the Great Depression and the pandemic were really two very different things.

On the very day of the end of the stock market debacle, March 23, 2020, The Federal Open Market Committee of the Federal Reserve came to the rescue with an announcement of aggressive steps that would be taken to stimulate the economy. The announcement, which even said measures would be taken “in the amounts needed to support the smooth functioning of markets.”, called to mind some famous words of Mario Draghi, of the European Central Bank. During the European Union’s Euro Crisis on July 26, 2012, Draghi said that the bank would do “[whatever it takes](#)” to save the Euro. Newspaper reports on this statement were numerous.

Figure 8 shows the count of Covid-19 cases and the weeks the surveys were mailed. In 2020, Covid-19 cases were rising sharply prior to the mailing. By the summer, just as our respondents were completing the survey, fear and uncertainty about the pandemic’s full impact was intense. Due to a new wave of virus cases across the country, we chose to add a few questions at the end of our survey in 2020 to gauge whether the spreading coronavirus had altered respondent’s perspectives.

Figure 8: Number of Covid-19 Cases Reported per 100,000 Population^a and Survey Mailing Dates



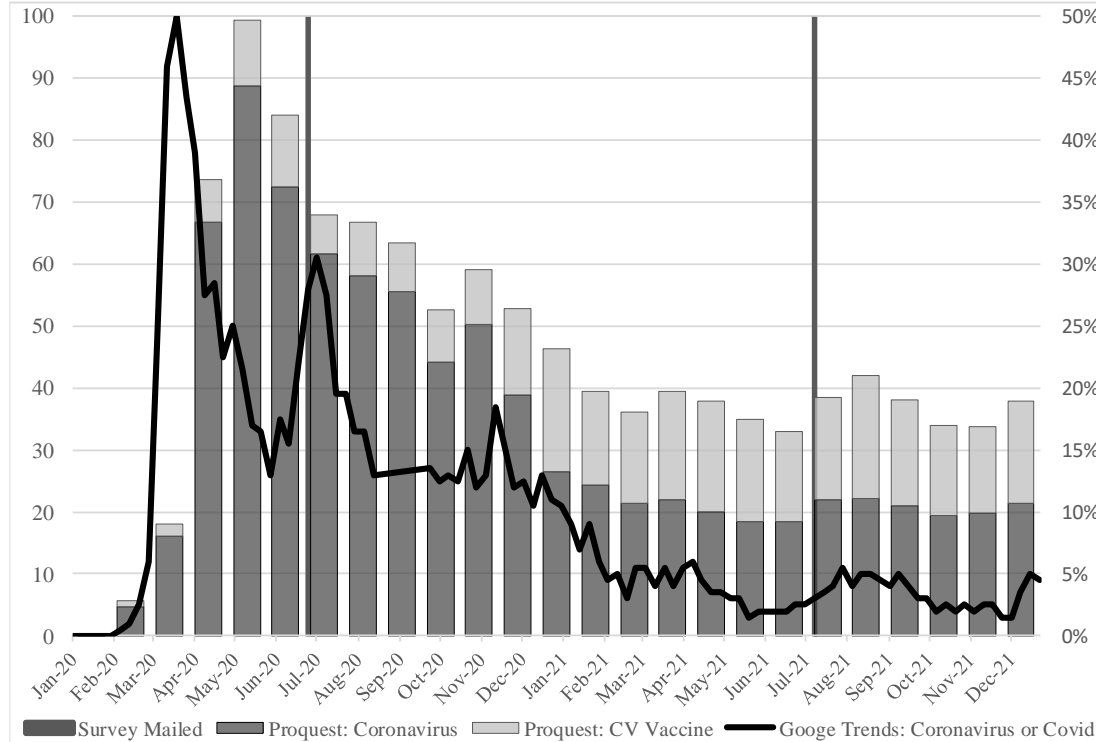
Source: US Centers for Disease Control and Prevention

a. 7-day moving average

Public attention to the coronavirus does not correspond closely to the actual path of the epidemic. A Google Trends search of “coronavirus” or “Covid” shows continued strength of the narrative not closely related to waves in the counts of new cases. There were separate waves of public attention to the coronavirus, following their own epidemic curves, contagion of the narrative only intermittently supported by waves of actual Covid-19 cases.

A similar ProQuest search of U.S. newspapers, blogs, podcasts and websites showed a similar pattern. In April 2020, nearly 50 percent of these media articles mentioned Covid or coronavirus. A separate search which required the addition of “vaccine*” showed that relatively few of the early articles discussed vaccines, but by the end of 2020 vaccines were mentioned in over 40 percent of these articles.

Figure 9: Google Trends Index of Searches and ProQuest Share of Searches for "Coronavirus" or "Covid"
 Google Trends^a March 22-28, 2020 (peak=100)
 ProQuest^b March 2020 (share =50%)



a: Google Trends (<https://trends.google.com/trends/explore?date=all&geo=US&q=coronavirus%20or%20covid-19>)

b: ProQuest (<https://www.proquest.com> (coronavirus* or covid*) / (coronavirus* or covid*) and (vaccine*))

Responses to the 2020 survey indicate that Covid-19 had certainly affected buyers outlook and the major theme was trepidation about the impact it would have on the housing market and the economy. This was evident not only in the questions added in 2020, but in significant changes in responses to previously asked questions. When asked if any event had changed the trend in home prices over the past two years, 34 percent mentioned the words “covid,” “coronavirus,” or “pandemic.” While Covid-19 was frequently mentioned, however, there wasn’t a consensus on the type of impact it would have. Some expected it to drive prices up, but the majority anticipated it would lead prices to fall. A separate question asked respondents what is behind what was going on in terms of recent changes in home prices. Covid-19 or coronavirus was again a common response with 15 percent mentioning it. Other common themes in both questions were low mortgage or low interest rates, shortage of supply and high demand. Respondents were also asked what they

thought would cause current trends to stop. While some were skeptical that the pandemic would continue to hurt the economy, many were optimistic that the development of a vaccine would help the economy to recover.

The 3.4 percent expected one-year change in home values reported in our 2020 survey was the lowest level since 2012. These expectations were significantly below the 19.8 percent increase in the S&P/CoreLogic/Case-Shiller National Home Price Index over the year ending in July 2021. Between the second quarter of 2020 and 2021, prices shot up 19.3 percent in Alameda County. Survey respondents in Alameda were also the least optimistic, anticipating a 2.2 percent gain in prices over the year, merely 11 percent of the actual price change. In Middlesex (17.4% vs. 3.6%) and Orange counties (17.4% vs 3.4%), price gains were five times expectations. Milwaukee homebuyers projected prices would increase 4.5 percent over the year, compared to the 14.5 percent increase that occurred. While the 3.6 percent ten-year annualized expected appreciation for all counties was not as low as the one-year, it was the lowest reported since the start of the survey.

When asked in 2020 whether their “outlook on the economy has worsened since I/we purchased this home,” 55 percent of homebuyers answered yes. Their view of Covid-19s impact on the housing market was less severe, with 15 percent reporting their “expectations for the housing market have worsened since I/we purchased this home.” Answers to many other questions reveal the fear that home buyers were experiencing in the early days of Covid-19. While prices had tracked steadily higher since 2012, an eight-year low of just 36 percent agreed “Housing prices are booming; unless I buy now, I won’t be able to afford a home later.”

Another eight-year low of just 26 percent of respondents perceived home prices as rising rapidly recently. They also kept a close eye on information sources to help determine the price they were willing to pay. A record 92 percent of buyers relied on the Internet, MLS and newspapers to decide on their offer price.

These homebuyers also expected the impact of the coronavirus on the economy to be long lasting. Nearly 69 percent expected it to continue beyond fall 2020 and 89 percent believed the impact would persist for two or more years. They had purchased a home before Covid-19 had taken hold in the U.S. and many had closed on their homes before the first case of the virus was reported here. They received the homebuyer survey as the economy was tumbling into recession. Over a third expected the recession would wreak havoc on the economy. More than three-million Covid-19 cases in the United States had been reported and fatalities were increasing. Businesses were closing and mass layoffs were taking place. The unemployment rate had jumped from 4.4% to 14.7% over the month of March. While it fell back to 10.2% by July, it remained above the 10.0% Great Recession 2007-9 peak. The S&P500 remained below the peak on February 19, and home prices were flat. Clearly, 2020 homebuyers were justifiably apprehensive about what havoc the coronavirus might heap on them, their friends and family, the value of their homes, their investments and the country as a whole.

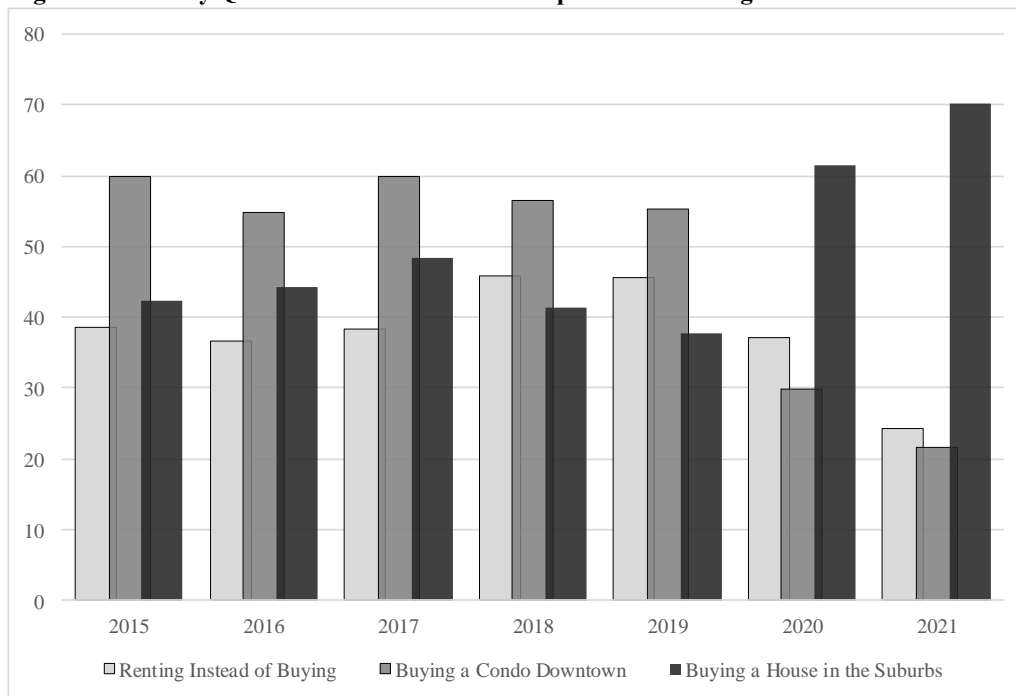
When the survey was mailed out in July 2021, the country had endured over a year-long battle with Covid-19. While some homebuyers' year-earlier fears had come to pass, most had not. The outlook was relatively rosy. Coronavirus cases had receded to the lowest level since the start of the pandemic, vaccinations were widely available and the Delta variant had yet to emerge. At the end of the second quarter 2021, the S&P/CoreLogic/Case-Shiller National Home Price Index was up over 17 percent from a year earlier and 5 percent over the quarter. The S&P500 had soared nearly 40 percent over the year and 7.5 percent, 300 points, in the second quarter. At 5.4 percent, the unemployment rate was nearly half its previous-year level. While many schools and businesses remained physically closed, working from home had become the norm with the aid of ZOOM. The country was adapting to a new normal.

Changes in homebuyer's perceptions and expectations between 2020 and 2021 were justifiably

stark. The major exception being their view on locational preference. In 2015 we asked whether people were becoming (more/less/unchanged) favorable to buying a house in the (suburbs/condo) or renting. We added these questions as the downtown market appeared to be growing in popularity, many believed that retirees would downsize and relocate to the city. While this appeared to be the case through 2019, it changed dramatically with the onset of Covid-19.

Figure 10 shows a slight uptick in the favorability of purchasing a home in the suburbs from 2015 to 2017, followed by a downturn over the following two years. In 2020, preference for buying suburban homes rose nearly 25 percent, while purchasing a downtown condo fell over 25 percent. This trend continued in 2021. Respondents perceived 70 percent of people were amicable to purchasing a suburban home, just 22 percent buying a condo downtown and 24 percent renting.

Figure 10: Survey Questions 33-35 "I Think People are Becoming More Favorable to"...



Source: Authors' surveys Questions 33-35.

We supplemented our 2021 survey with additional questions regarding the pandemic. One of which was: “Why do you think home prices have risen so much despite the coronavirus?” While many of the replies mirrored those discussed above, there were additional insights into what drove

prices up. The most frequent response to this question was that high wage, white collar and tech jobs weren't impacted much by Covid-19. Other common threads were that people wanted extra space and/or home offices because they had been living in cramped quarters during quarantine. Over 87 percent replied it had become more important to have "A home with one or more office/work rooms." The desire to relocate to the suburbs and change from renting to owning a home were both frequently mentioned. In fact, a record 60 percent were first-time home buyers. In 2020, 28 percent of those replying were age 35-44. This age cohort jumped to record 35 percent in 2021, over 50 percent of whom reported income of \$225,000 or more.

Many noted their spending had slowed during lockdown and/or they had benefitted from stimulus dollars and thus were able to save money for a down payment. Figure 11 shows growth in savings was typical during 2020. The personal savings rate, the percentage of disposable income that people save, averaged 16.3 percent in 2020, nearly double the average over the previous fifty years. Therefore, when working from home became the norm, many could afford to purchase their first home or upgrade.

Figure 11: Personal Savings Rate, Percent, Monthly, Seasonally Adjusted Annual Rate



Source: U.S. Bureau of Economic Analysis

When asked why sellers often get multiple offers above the asking price on the day the homes are listed, a record 72.4 percent attributed this to panic buying that caused prices to become irrelevant. These home buyers were getting caught in bidding wars. During their search for a home, a record 50 percent had offered more than the asking price and 52 percent settled on a price above the asking price. In 2018, we began asking if buyers had their offers rejected because someone offered more. In 2021, just 46 percent had their first offer accepted, the remainder had placed bids on other properties that were rejected, and 16 percent had four or more offers rejected before buying their home.

The general vibe in the market had transitioned sharply over the year 2020-2021. The real estate market was hot in 2021 and buyers were well-aware of it with 84 percent describing home prices in the area as rising rapidly. Still, their projected one-year increase in value was just 6.3 percent. In 2021, prices rose 17.0 percent nationally, 9.4 percent in the second half of the year alone. While growth in home prices may moderate in the future, there is little evidence that we are in for a major correction.

VIII. Conclusion

Our analysis of the surveys of homebuyers 1988 and 2003-2021 that we have collected shows that homebuyers' expectations are fairly rooted in reality for the short run, even underreacting to recent trends, but given to flights of fantasy for the longer run. The shorter-run expectations were pretty much on target throughout the period. This is not really a surprise for, looking at plots of the data like those in Figures 1a-1d, we see that home prices are quite smooth through time, and hence easily forecastable by simple extrapolation for a short time after the survey, in sharp contrast to stock prices which resemble random walks. But forecasting the longer run presents a real challenge and tends sometimes go to extremes that are at odds with reality.

Since the strong uptrend in home prices that started in 2012 and strengthened with the

COVID-19 pandemic in 2020 is not associated with high ten-year expectations for price increase, and since homebuyers mostly stay in their homes for years or decades, we would not call the experience a bubble, at least not in the classic sense.

But it resembles a bubble in the sense that it is driven by a kind of excitement or fear of missing out (FOMO in today's Internet lingo). The excitement is associated with having to deal with bidding wars and worries about being outbid if one does not bid aggressively enough. The public mood among those actively bidding is one of fear of being jilted, losing a house you may have fallen in love with to a more aggressive competitor.

Forecasting house prices at this point in history is not a just a matter of judging the progress of a hypothetical bubble. While the rapid increase in home prices is a cause for concern, forecasters must go beyond simple models and to such things as forecasting the COVID-19 epidemic and its future variants, or forecasting international tensions such as those raised by the Russian invasion of Ukraine in February 2022 and Vladimir Putin's veiled threats to use atomic weapons against nations who support Ukraine. They must also consider the change in supply of housing and in communications technology, and in the changing geographical distribution of business activity, and to the evolution of popular narratives about these things.

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Boston Area (Middlesex County) Questionnaire 2021

PLEASE ANSWER ALL OF THE QUESTIONS
FEEL FREE TO WRITE COMMENTS ANYWHERE ON THE QUESTIONNAIRE
Thank you very much for your help with our research

1. A. What type of property did you purchase? [Please circle one number]

1. Single family home	3. Condominium or cooperative
2. Duplex	4. Other: _____

- B. What type of mortgage did you get? [Please circle one number]

1. Conventional fixed rate for _____ years
2. Adjustable rate (ARM), initial fixed rate period _____ year(s)
3. Other _____
4. No mortgage

2. Why did you buy the home that you did? [Please circle one number]

1. To live in as a primary residence.
2. To live in part of the time as a second residence without renting it to others.
3. As a second residence that you will also rent out.
4. Only to rent out to others.
5. For some other reason: _____

3. Circle the number that best describes your reason for buying a home at this time:

1. Changing residence because of a job change.
2. Moving due to a change in family circumstances such as a marriage, divorce, birth of a child, etc.
3. Trading up (buying a better property than I lived in before).
4. Buying strictly for investment purposes.
5. For some other reason: _____

4. Are you a first-time home buyer? [Please circle one number]

1. Yes	2. No
--------	-------

5. Do you think that home prices in the Boston Area will increase or decrease over the next several years?
[Please circle one number]

1. INCREASE	2. DECREASE
-------------	-------------

6. How much of a change do you expect there to be in the value of your home over the next 12 months?
(Fill in number and circle 1. or 2.)

_____% (Percent Change)	1. INCREASE	2. DECREASE
-------------------------	-------------	-------------

7. On average over the next ten years how much do you expect the value of your property to change each year? (Fill in number and circle 1. or 2.)

_____ % (Percent Change)	1. INCREASE	2. DECREASE
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8. In deciding how much you were willing to pay for this house to what extent did you rely on information obtained from the following sources. [Please check one box for each question A through F]

1. Heavily	2. Somewhat	3. Not at all	
			A. Advice from or appraisals by real estate agents.
			B. First or second-hand knowledge of comparable sales prices.
			C. Stories about the real estate market in the media: Internet, newspapers, magazines, TV or radio.
			D. Internet, MLS or newspaper listings of other properties for sale.
			E. Listings of other properties that had sold.
			F. Knowledge of recent changes in your state's economy.

9. Was your first offer on the property that you purchased: [Please circle one number]

1. Above the asking price
2. Below the asking price
3. Equal to the asking price

10. Did you finally settle on a price that was: [Please circle one number]

1. Above the asking price
2. Below the asking price
3. Equal to the asking price

11. Did you place an offer on any other property that was rejected because someone offered more? [Please circle one number]

1. No. This was the first and only property I/we placed an offer on.
2. One other offer was rejected.
3. Two or three other offers were rejected.
4. Four or more other offers were rejected.

12. In deciding to buy your property, did you think of the purchase as an investment: [Please circle one number]

1. Not at all
2. In part
3. It was a major consideration

13. Which of the following best describes the trend in home prices in the Boston Area in recent months:

[Please circle one number]

1. Rising rapidly
2. Rising slowly
3. Not changing
4. Falling rapidly
5. Falling slowly

Q13. Comments:

14. Roughly how long had the trend you have observed when you purchased your home been going on:

Since: (month [MM]) _____
(year [YYYY]) _____

15. Was there any event or events in the last two years that you think changed the trend in home prices?

16. What do you think explains recent changes in housing prices in the Boston Area? What, ultimately is behind what is going on?

17. Which of the following better describes your theory about recent trends in Boston Area home prices?

1. It is a theory about the psychology of home buyers and sellers.
2. It is a theory about economic or demographic conditions such as population changes, changes in interest rates or employment growth (decline).

18. How long do you think that present housing price trends will continue?

_____ (Number of months)

19. If you think that present trends will **not** continue forever, what do you think will cause them to stop?

20. In conversations with friends and associates over the last few months, conditions in the housing market were discussed: (circle the one which best applies)

1. Frequently	2. Sometimes	3. Seldom	4. Never
---------------	--------------	-----------	----------

21. Buying a home in the Boston Area today involves:

(Please circle the one which best applies):

1. A great deal of risk
2. Some risk
3. Little or no risk

22. Does the following describe your feelings? "I bought now because I felt that I had to even though I might have done better financially if I had waited."

1. Yes	2. No
--------	-------

23. Immediately prior to buying this home, did you sell or try to sell another home?

1. Yes	2. No
--------	-------

IF YOU ANSWERED YES TO QUESTION 23, PLEASE ANSWER Q23a and Q23b, OTHERWISE SKIP TO Q24.

23a. If you tried to sell another home, what is the current status of that other property?

1. It was sold
2. It is still for sale
3. Other: _____

23b. When you set the initial asking price, did you set it above, below, or equal to what you thought the property was realistically worth?

1. Above	2. Below	3. Equal
----------	----------	----------

24. There has been a good deal of excitement surrounding recent housing price changes. I sometimes think that I may have been influenced by it.

1. Yes	2. No
--------	-------

25. In a "hot" real estate market, sellers often get more than one offer on the day they list their properties. Some are even over the asking price. There are also stories about people waiting in line to make offers. Which is the better explanation?

1. There is panic buying, and price becomes irrelevant.
2. Asking prices have adjusted slowly or sluggishly to increasing demand.

26. For each of the following, indicate whether you have heard the statement recently and whether or not you agree with it: [Please check first column if heard this **and also** whether you agree or disagree]

1.Heard	2.Agree	3.Disagree	
			A. Since housing prices are unlikely to drop very much, the best strategy in a slow market is to hold on until you get what you want for a property.
			B. Housing prices have boomed in the Boston Area because lots of people want to live here.
			C. The real problem in the Boston Area is that there is just not enough land available.
			D. Housing prices are booming; unless I buy now, I won't be able to afford a home later.
			E. It's a good time to buy a home because housing prices are likely to rise in the future.
			F. It's a good time to buy a home because interest rates are relatively low and are likely to rise in the future.
			G. It's not a good time to buy a home because housing prices are likely to decline in the future.
			H. It's not a good time to buy a home because interest rates are likely to fall in the future.
			I. When interest rates rise, homes become less affordable, and it is just a matter of time before home prices drop.
			J. One major problem in the Boston Area is that there is a shortage of homes available for sale.
			K. Many homes in the Boston Area are purchased by builders or investors planning to renovate or replace them then put them up for sale.

27. Do you agree with the following statement: "Real estate is the best investment for long-term holders, who can just buy and hold through the ups and downs of the market."

[Please circle one number on scale from 1 to 5]

Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
1	2	3	4	5

28. Do you agree with the following statement: "The stock market is the best investment for long-term holders, who can just buy and hold through the ups and downs of the market."

[Please circle one number on scale from 1 to 5]

Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
1	2	3	4	5

Comments:

29. Before you bought this house, did you actively think of not buying any house at all, staying out of real estate ownership?

1. Yes	2. No
--------	-------

30. If you answered yes, what factors were on your mind when you thought about NOT buying, and what made you finally buy?

31. Have you been thinking of buying yet another house, keeping the one you just bought and owning two (or more) houses?

1. Yes	2. No
--------	-------

32. What factors were on your mind when you have thought about buying yet another house?

33. I think that people are becoming [1. More, 2. Less, 3. Unchanged] favorable to buying a house in the suburbs for the long term: [Please circle one number]

1. More
2. Less
3. Unchanged

34. I think that people are becoming [1. More, 2. Less, 3. Unchanged] favorable to buying a condo downtown in a city for the long term: [Please circle one number]

1. More
2. Less
3. Unchanged

35. I think that people are becoming [1. More, 2. Less, 3. Unchanged] favorable to renting, instead of buying, their homes for the long term: [Please circle one number]

1. More
2. Less
3. Unchanged

36. What is the approximate square footage of:

- a. Your current home? _____ square feet
- b. Your previous residence? _____ square feet

37. How long, in years, have you lived in the Boston Area? _____ years

38. What best describes the home you purchased?

1. New
2. Built within the past five years.
3. Renovated extensively within the past two years (e.g. kitchen/bath/addition).
4. Unaltered

39. Do you have any major renovations (kitchen/bath/other) or additions planned for the home?

1. Yes	2. No
--------	-------

40. What was the purchase price of your home? [Please circle one number]

1. Less than \$100,000
2. \$100,000 - \$175,000
3. \$175,000 - \$250,000
4. \$250,000 - \$350,000
5. \$350,000 - \$500,000
6. \$500,000 - \$650,000
7. \$650,000 - \$800,000
8. \$800,000 - \$1.0 million
9. \$1.0 - \$1.5 million
10. Over \$1.5 million

41. Into which age cohort does the head of your household fall? [Please circle one number]

1. Under 25 Years
2. 25-34 Years
3. 35-44 Years
4. 45-54 Years
5. 55-64 Years
6. 65+ Years

42. What best describes your household [Please circle one number]

1. One adult - no children at home
2. Two adults - no children at home
3. One adult - one or more children at home
4. Two adults - one or more children at home
5. Other

43. What is your approximate household income? [Please circle one number]

1. Under \$40,000
2. \$40,000 - \$60,000
3. \$60,000 - \$80,000
4. \$80,000 - \$100,000
5. \$100,000 - \$125,000
6. \$125,000 - \$150,000
7. \$150,000 - \$175,000
8. \$175,000 - \$225,000
9. \$225,000 - \$300,000
10. Over \$300,000

44. The following questions attempt to gauge whether the coronavirus pandemic has altered your perspective. [Please check one box for each question A through J]

1. Agree Strongly	2. Agree Somewhat	3. Do Not Agree	
			A. I/we chose to purchase a home further from the city center due to the Covid-19 pandemic.
			B. The pandemic of the past year made me/us seek solace by purchasing a home, to live normally.
			C. My/our outlook on the economy has worsened since I/we purchased this home.
			D. My/our expectations for the housing market have worsened since I/we purchased this home.
			E. The impact of the coronavirus on the economy will be short lived with a recovery beginning by fall.
			F. The effects of the coronavirus on the economy will continue for two or more years.
			G. Among the general population, the desire to work from home is unlikely to go away.
			H. Among the general population, the desire for social distancing won't go away for many years.
			I. The coronavirus experience will raise suburban or rural home values relative to center-city values.
			J. Fewer homes were on the market and potential sellers were reluctant to have people enter their homes to view them.

45. The outbreak of the coronavirus had a significant impact on everyday life over the past year. Please indicate whether you believe these property attributes have become more or less important among the general public as a consequence of the pandemic. [Please check one box for each question A through H]

1. More Important	2. Same Importance	3. Less Important	
			A. A larger home with more open living space.
			B. A larger home with more rooms.
			C. A home with one or more office/work rooms.
			D. A home in a quiet living environment.
			E. A home with a large yard.
			F. A home close to family, friends and acquaintances.
			G. A home close to work.
			H. A home close to stores, restaurants and cultural amenities.

46. Why do you think home prices have risen so much despite the coronavirus?

47. As the coronavirus pandemic fades, some of the changes that have occurred over the past year may diminish or continue. [Please check one box for each question A through J]

1. Agree Strongly	2. Agree Somewhat	3. Do Not Agree	
			A. Households preference for homes with separate work space are here for the long term.
			B. The preference for living further from the city center will persist.
			C. Commuting DISTANCE will be less important.
			D. Commuting TIME will be less important.
			E. Households that relocated out of state or beyond reasonable commuting distance during the pandemic will remain in their new locations.
			F. Given the option, workers who worked from home during the pandemic will continue to work from home full time.
			G. Given the option, workers who worked from home during the pandemic will choose to return to the office full time.
			H. Given the option, workers who worked from home during the pandemic will prefer a balance of home and office (2-3 days/wk) work.
			I. Workers will have leverage with their employers in terms of work/life balance.

48. If you were given the option to respond to this survey online rather than by regular mail, would you have preferred (or chosen) that method? (Please note: the survey would still be sent to you via regular mail, and your anonymity would still be preserved). [Please circle one number]

1. Respond Online
2. Respond via Regular Mail

Please use this space for general comments/suggestions: