General Discussion: Understanding Recent Trends in House Prices and Homeownership

Chair: Otmar Issing

Mr. Issing: When I come across a German word in an English text, this normally indicates problems. In Bob Shiller's paper, it is "zeitgeist." When English-speaking people use the word "zeitgeist," it signals something irrational. This is exactly the essence of Bob Shiller's paper.

I think Chart 1 of his paper indicates we have problems to explain with our traditional economic tools what has gone on in markets. The question is obvious then. Chris Mayer has already referred to it. What can we expect from sociological and psychological explanations? What value can they add? Is it an alternative to traditional economics, or is it probably an approach that can be combined? Is it really either/or? Or can we combine insights from behavioral economics with our traditional and more fundamental economic explanations? I think these could be the topics for the discussion.

Mr. Muellbauer: I would like to comment on Chart 6 in Bob Shiller's paper. I sympathize very much with the psychological explanations that Bob puts forward, but, as Christopher Mayer has argued, the economic fundamentals are really rather important in telling the story of what happened in London, as illustrated in Chart 6.

We have a regional model that explains regional house price developments in the United Kingdom.[1] This model was estimated up

to 2003. The episode that Bob Shiller talked about occurs later, but the model tracks what has happened since 2003 very accurately. The first thing you need to know about housing in the United Kingdom is how few houses are built. The United Kingdom builds one-fifth or less of the number of houses per head of population than Spain or Ireland. Lack of supply is an important ingredient in house price appreciation in the United Kingdom.

Demand grew strongly from the combination of population growth through immigration, income growth, interest rates, and credit market liberalization. Incidentally, in our paper, we find that nominal interest rates, as well as real interest rates, matter for house price. Financial liberalization has shifted the relative role of nominal and real rates in a way that Chairman Bernanke alluded to, as front-end loading (or "tilt") has diminished. That means real interest rates are now more important than they were before. Interest rates rose from the end of 2003 to the end of 2004.

In London, in particular, the other factor that is important is the equity market. London is the financial center of Europe. Our work suggests that the economic health of the city of London is very important for London house prices. Much of the appreciation shown in Bob Shiller's Chart 6 since 2004-05 is due to what has been happening in the equity market—rising share prices and increased merger and acquisitions activity. Hence, an implication is that current events in the financial markets will have effects on London prices. There will be some fall in London prices. Economics is more important than psychology in understanding what happened and will happen to house prices in the United Kingdom.

Mr. Hatzius: I wanted to ask about the practical differences in the two approaches that you put forth. The first approach is to understand the increase in house prices, basically via price dynamics and price expectations following house price appreciation. The second one is really more centered on the role of the credit market in boosting house prices. I wonder whether, in practice, the difference between those two approaches may be a little smaller in terms of what it might mean for house prices going forward. It might be a little smaller than perhaps the philosophical differences.

If you think about the extrapolation story, you have higher prices feeding into higher expectations of future price increases feeding into more demand feeding back into higher prices. The risk is of that starting to run in reverse. In the credit story, you have higher prices, triggered presumably by lower interest rates initially, but then higher prices, improving the backdrop for credit quality because, in a rising price environment, it is easier to refinance or sell your way out of trouble if you are financially challenged. So, you have lower defaults and you have higher credit availability because the financial markets become more willing to extend credit to more questionable borrowers that boost homeownership, boost demand. This feeds back into higher prices, and the cycle starts anew. Again, this is a cycle that could run in reverse for quite a while.

My question more to Professor Mayer would be, How large do you think the difference in practice for the home price outlook between your approach and Professor Shiller's approach might be?

Mr. Barnes: My question is for Bob Shiller. It seems to be that bubbles don't start as bubbles. They start as a rise in asset prices that is rooted in some positive fundamentals. Kindleberger and others have emphasized this. It is only much later in the cycle where one can call it a bubble and the speculative fevers that you talk about become the driving force. So, if you don't think low interest rates played a big role, I would be very interested, Professor Shiller, in what you think then was the underlying fundamental cause that started out the rise in home prices.

The second part would be to ask your opinion of a very controversial question that has come up here before at Jackson Hole. It was whether central banks should intervene when a rise in asset prices starts to look to the vast majorities as if it has become a bubble.

Mr. Cotis: I found Professor Shiller's paper fascinating, and there is probably a lot of truth in it. Nonetheless, I felt his views on the epidemic hypothesis were hard to falsify. Basically, when long price upswings are followed by substantial downswings, it is said to be a proof of the magnitude of social epidemics and conversely, as in the London case, when we have a strong upswing only followed by a modest and

temporary fall, it is said to be a proof of how entrenched the epidemic is. So, whatever the final outcome, it has to be an epidemic.

To really test the epidemic hypothesis, what would be needed in the London case, for instance, and that we miss is a counterfactual that features the fundamental determinants of housing prices like nominal and real interest rates, liberalization of mortgage markets, and also the very inelastic supply due to zoning laws.

Mr. Shiller: First of all, to Chris Mayer, the reason I slighted interest rates is I have another paper on interest rates and asset prices, which is going to be presented at the Brookings panel, and it is embargoed until Sept. 6. (I have heard Chris before, and I am responding by writing another paper about it.) If everyone is rational, and they should be when long rates go down, they should discount the rents at a lower rate, and prices should go up. But that model certainly is complicated.

If they are rational, it should be the real long-term rate that they use. We don't even know what real long rates are in most countries because they have only a vestigial, very weak, indexed debt market. If you look at the United States and the United Kingdom, the real rates in those two countries since 1997 have behaved rather differently. Yet, the stock market and housing market have behaved similarly.

One thing I get from behavioral economics is that people are not thinking like economists, and they put things in different mental compartments. You might say, "Yes, they should be looking at interest rates and doing a correction for inflation and then rediscounting."

But that is not the way most people think. In fact, what I showed in my Brookings paper is that people don't even know the term "real interest rate." I did a count to see how much it is used in the media. The term "real interest rate" is a 1970s-80s phenomenon, and it is almost totally forgotten. The public doesn't know what it means. Some used to know, but they have forgotten.

There is some truth to the interest rate story, but it is a Modigliani-Cohn story. It operates through money illusion. I am not completely

unsympathetic to what Chris says, but it doesn't really explain the current boom anyway.

Regarding John Muellbauer, very briefly, I don't know about your regional housing market for the United Kingdom. I can't claim to have done as careful a job of studying the United Kingdom. Let me just say that London right now is maybe the world's financial center, but Amsterdam was the world's financial center in 1650. If you look at Eicholtz's Amsterdam index, it hasn't gone up since those days. So, there is mean reversion. I don't know what your model says, but I still feel that mean reversion is an outlook for London and for Chris Mayer's superstar cities as well.

Jan Hatzius, I am not sure what you were asking about distinguishing a credit market story and a psyche story. Even the credit market phenomenon is not unrelated. You have to ask why there is a credit market problem. The recent behavior of credit markets seems to show psychology to me.

The origin of the subprime crisis: He points out that it was in states like California where it dominated. These are the same as highest-expectation states. So, it is all interrelated. I don't know if that answers your question.

Mr. Barnes asked about what started this bubble. You said Kindleberger says bubbles start with some fundamental and then they are carried along. I have a long discourse on that in the second edition of my book, *Irrational Exuberance*. For me, it is all zeitgeist. (I love that word "zeitgeist." It is one of my favorite words.) We just think differently in different times of our lives. There are lots of elements to the current zeitgeist. I will just mention the perceptions of China and India.

When I was writing this paper, my neighbor came by and interrupted me for something. Then she mentioned China and India, within 10 seconds of starting the conversation. I think it is on everybody's mind. We somehow think the world is growing really fast now. It seems intuitive that prices should be soaring. In fact, if you look at data on world real growth rates, the International Monetary Fund data are consistent over the last 50 years. They are only a little higher

now. The public has gotten some distorted optical illusion about what is going on now. That ultimately is what started the bubble.

Also, it is a continuation of the stock market bubble. I don't have any fundamental. The stock market bubble got to almost everyone. I am more willing than most economists to say things like, "It got everyone excited about investing, and their self-esteem started to be built around being good investors."

I am not sure I can answer your other question. It seems like the liberalization of mortgages is a fundamental innovation that is a good thing and that we are going to see benefits from it. It is not just social epidemics. It is indeed financial innovation, as you were saying.

I didn't emphasize this in this paper, but it is also something I very much believe. Financial innovation brings with it temporary problems because we are not used to the innovations and we learn about them. We have to accept some of this as growing pains. For example, in the collateralized debt obligation crisis, they weren't assessed properly by the rating agencies. But we are learning, right? This kind of turmoil is not altogether bad in the longer run.

Mr. Mayer: I just wanted to make a couple of general comments that respond to many of the questions and also to Bob's recent comments. While I am not sure people are sophisticated enough to write down a good user cost model and precisely know what real interest rates are, that doesn't mean they don't pay attention to economic fundamentals.

Households could follow a pretty simple rule of thumb. First, they look at long-term mortgage rates, which is what households typically take out in the United States. In the data, long-term mortgage rates correlate much more strongly with house prices than short-term rates. Second, suppose that households are more optimistic about appreciation in superstar markets like the Bay Area where, for 55 years, house prices have gone up faster than in the rest of the country.

So, if households are more optimistic about appreciation in those markets, they might be willing to stretch a little more to buy a house in superstar cities. This hypothesis is consistent with the evidence we have on the behavior of consumers in these markets. With these two

factors, long-term interest rates and expected appreciation, they pretty much get the user cost model right. It is also hard to argue that households don't think about taxes in making their purchase decision.

That rule of thumb, in which households look at the after-tax cost of the mortgage and are more optimistic about future appreciation in long-term appreciation rate markets, is pretty similar to what I write down in a user cost model. You can fit that user cost model to the data—and it is really important not to just look at aggregate U.S. data because U.S. data don't give you any variation in expected appreciation. When running the user cost model cross-sectionally on different markets, understanding that Chicago, Boston, and Houston are enormously different places with rationally very different expected appreciation based on local land and other kinds of constraints, you find it fits the data reasonably well.

This claim is based on forthcoming work with Todd Sinai that we will present at a Boston Fed conference next month that Professor Shiller will have the opportunity to comment on. The user cost model certainly helps explain why volatility is different across markets. Also equally importantly, you can try to embed lagged appreciation in the user cost model. This approach can help address the question of "How do you falsify such a hypothesis of irrational exuberance, backward-looking expectations, or inflation illusion?" It turns out that you can write down some kind of distributed lag on house price appreciation and throw it into the user cost model. Similarly, you can also use nominal instead of real terms to look at things like inflation illusion.

To preview what we are going to say at that conference next month, we find that the user cost model still does a better job than backward-looking expectations and especially inflation illusion, where you get almost no explanatory power whatsoever. It might be that, even by putting interest rates in there, I am missing the boat on what is going on, as Professor Shiller seems to suggest. I can't go along with that view. There is good work to be done embedding some of these psychological models into testable frameworks that one can think about. This is certainly the subject both of that next paper, as well as future research that Todd Sinai and I are working on.

Mr. Sinai: Bob, if I could make a suggestion on the interest rate versus expectations-driven story on housing prices to you, and I mean it constructively, I don't think you want to downgrade decades of research on the role of interest rates in housing and housing finance in quite so casual a fashion. I don't think you mean that. You are trying to make a very significant and interesting point, which I am very sympathetic with, which is, in business cycles and in asset pricing, the role of psychology and zeitgeist is extraordinarily important. In the profession, we have not integrated that well formally in our thinking about what happens in the nonlinearities that show up in these situations.

Now, I do have a quick question. I want to be sure I have the main part of your paper right. Are you saying in your paper that "a" or "the" principal reason for the extraordinary rise in home prices in recent years has been unrealistic expectations of future price rises—essentially an expectations-driven demand for residential real estate and its rising prices?

If you are saying this, as those expectations are disappointed and they are being disappointed now, and revised to the downside, will the reverse in those expectations effects occur in housing prices over time? Will we just keep going down and overshoot on the downside?

Then another question is on quantitative evidence for the psychological effects; if you can, offer us some references to quantitative evidence on the relative strength of the fundamentals, one of which you are pointing out as the price expectations effects.

Mr. Tracy: Chris, you stressed long-term real interests as a fundamental determinant. I was wondering what your view is on trend productivity, especially the revision and the outlook for labor productivity that was happening in the mid- to late 1990s and the tendency for the returns to higher productivity to go disproportionately to workers who are high-income and are located in these more supply-constrained cities that you mentioned.

Mr. Shiller: First, to Allen Sinai. I guess I am saying that expectations appear to drive a substantial part, but I don't want to put it in just those terms. That is an "economist" term, not a "psychological"

term. George Katona, who wrote the book *Psychological Economics* in 1975, stressed people don't have expectations. You ask them, "What is the expected inflation?" and they react with panic, and they think, "I'd better come up with a number to please this economist; he's questioning me."

In fact, there are other things. Just pure attention drives housing markets. Everyone is talking about it. You can't short the market. The only thing you can do is buy. That sounds crazy, but crazy things happen. It is also our sense of identity and self-esteem—I really sound like a psychologist here. I didn't mean to demean economic research. I always try to go for what is different.

We have to listen to these other things, like interest rates, that Chris talked about. Obviously, you are right. We have to meld these two. It is very difficult to meld the psychological wisdom in with the economics, but that is something we all have to do.

Joe Tracy brought up something, which I thought I understood to say that income inequality is getting worse, maybe because of the bias in technical progress toward educated people and that sort of thing. It does seem to go the wrong way in the recent boom because the high-priced homes have been appreciating less than the low-priced homes. It is more a subprime phenomenon than a wealthy phenomenon.

Mr. Mayer: A couple of quick comments. I would also say, Bob, that, in the fun of being up here together, I would not mean to imply that psychology has no effect. I just think that psychology plays a role in a more limited set of markets and times than you suggest. This may speak to your point, Allen.

The second thing is to Joe Tracy's point. There is lots of evidence the changes in the income distribution matter for house prices. The changes in the income distribution certainly may have been tied to the productivity changes in the 1990s, although I am not an expert in labor markets. The income distribution changes actually go back much further, as work by Emmanuel Saez and others has shown, and our work demonstrates that these changes have shown up in housing markets, both within and across cities for decades.

In superstar cities, we document that you can tie relative price appreciation in superstar cities to the right tail of the income distribution. In addition, you can also tie the prices of superstar suburbs to the right tail of the metropolitan statistical area income distribution as well as to the national income distribution. One of the undiscussed points that often comes up—and when you think about it intuitively, it really shouldn't be surprising—that if you believe that land is a constraint and that wealthy, high-income people want to live together, either for productivity reasons or preference reasons (again the preference reasons have been much less discussed), it would be shocking if we didn't see changes in the income distribution being capitalized into housing prices. As soon as you have an inelastic supply curve, anything that affects demand can be capitalized into prices. I do think that inelastic supply is an important issue. If one looks at sociologists and what they have been commenting about, they have been commenting for decades about the reduction in racial inequality and the growth in income inequality in where people live. That growth in income inequality of residence is very much tied to income trends being capitalized into housing prices. Within cities and across cities, our paper on superstar cities suggests that labor markets are important factors in driving prices.

Endnote

[1]Cameron, Gavin, John Muellbauer, and Anthony Murphy. 2006. "Was There a British House Price Bubble? Evidence from a Regional Panel." CEPR Discussion Paper 5619.