

IN THIS ISSUE

- The Link Between Foreclosures and House Prices
- Understanding Bank Runs
- Derivatives Markets for Home Prices
- Unemployment Insurance Provides Needed Liquidity
- What Drives Retail Price Movements?

The Link Between Foreclosures and House Prices

Rising foreclosures will not cause U.S. home values to plunge, despite widespread concerns to the contrary. That's the conclusion of a new and first-of-its-kind study, **The Foreclosure-House Price Nexus: Lessons from the 2007–2008 Housing Turmoil** (forthcoming as an NBER Working Paper) by **Charles Calomiris, Stanley Longhofer, and William Miles**. Although the authors recognize that other factors not captured by their analysis could weigh on home prices, the effects of foreclosure shocks—which promise to grow over the next several months, and which have been a source of worry to homeowners and economists—seem to be smaller than many have feared. Even under their most extreme scenario, in which foreclosure rates would substantially exceed current forecasts, the resulting average drop in home prices between the national peak in the second quarter of 2007 and the fourth quarter of 2009 would be less than 6 percent.

The authors emphasize that house-price declines vary across states and argue that headlines pointing to extreme circumstances in a few states can be misleading about the United States as a whole. Despite increased foreclosure rates throughout the country, only 12 states are projected to see foreclosure-induced price declines of 6 percent or more through 2009, led by Nevada, Florida, California, and Arizona. “This suggests that home prices are quite sticky, and that fears of a major fall in house prices, with all of its attendant negative macroeconomic consequences, typically are not warranted even in extreme foreclosure circumstances,” they write.

Part of the reason that foreclosure shocks

have small effects on house prices is that these shocks tend to occur late in the housing cycle, after housing starts have declined and the supply of existing homes on the market has fallen sharply. These effects largely offset the price consequences of a supply surge caused by foreclosures.

“House-price declines vary across states and... headlines pointing to extreme circumstances in a few states can be misleading about the United States as a whole. Despite increased foreclosure rates throughout the country, only 12 states are projected to see price declines of 6 percent or more through 2009.”

Another contributing factor to the observed stability of house prices is the measure of price change chosen by the authors. The authors argue that it is appropriate to focus on a house price measure related to the prime conforming segment of the mortgage market (which accounts for more than three quarters of American homes). The authors seek to measure foreclosure effects on the values of homes sold by typical sellers, not the declines in prices of homes undergoing foreclosure-induced distress sales. They argue, therefore, that the house price index from the Office of Federal Housing Enterprise Oversight (OFHEO)—which does not include subprime home sales—is the most reliable and useful dataset for their purposes.

Using quarterly data for each state going back to 1981, the authors model the dynamic linkages among five variables: foreclosures, home prices, employment, permits issued for single-family homes, and existing home sales. Using state-level data makes it possible to measure linkages using the frequent and significant ups and downs that occur in

state and regional housing markets. In contrast to the aggregate national market, individual states have seen larger and more volatile swings in foreclosures and house prices since the 1980s. By concentrating on the states, the authors also can take into account the effects of widely varying employment growth dur-

ing that period—an effect that continues to define important regional differences, in particular between housing trends in the Rust Belt and the West.

One limitation of the authors' model is that it assumes that rising foreclosure rates have the same incremental effect on house prices regardless of whether the foreclosure rate is high or low. In fact, the incremental effect of increases in foreclosures on prices is much larger when foreclosure rates are high than when they are low. The authors adjust their model to account for this by increasing their assumed foreclosure forecasts for 2008–9 by 53 percent. To test the sensitivity of their results to even greater foreclosure risks, they also build an “extreme-shock” scenario and boost the foreclosure projections by 75 percent. These two scenarios create modest downdrafts in home prices that average 4.7 and 5.5 percent, respectively, through 2009.

“We do not have a crystal ball,” the authors conclude. “Our estimates are based on relationships among house prices, foreclosures, and other variables observed in the

past. It is conceivable that unusually tight consumer credit conditions, or other factors, could weigh on the housing market and produce more price decline than we estimate.” But

“based on the past experience of the housing cycle, even when one proverbially bends over backwards to inflate estimated foreclosures and take account of...their effects on house

prices, there is no reasonable basis...for believing (as many commentators do) that the housing wealth of consumers has fallen or will fall by much more than 5 percent,” they write.

— Laurent Belsie

Understanding Bank Runs

The image of long queues of agitated customers clamoring to withdraw their deposits from failing banks traditionally has been associated with the Great Depression—that is, until the very recent bank runs in the United States (Countrywide, IndyMac), Britain (Northern Rock), and India (ICICI Bank). In their timely study, **Understanding Bank Runs: The Importance of Depositor-Bank Relationships and Networks** (NBER Working Paper No. 14280), **Rajkamal Iyer** and **Manju Puri** analyze a unique database of minute-by-minute withdrawal activity at a besieged bank in India. Their analysis not only determines factors that propelled the bank run, but also points to policies that may help to mitigate the predilection for a bank run.

Iyer and Puri accessed customer activity information at a local bank in the Indian state of Gujarat following revelations in 2001 of a massive loan fraud perpetrated by the largest cooperative bank in the region. When the major bank collapsed, smaller cooperative banks experienced runs by panicked depositors. The bank in Iyer and Puri’s study had no connection to the collapsed bank and in fact was quite solvent, but as the authors note, “depositors can run even in anticipation of a run.”

Iyer and Puri moreover found a phenomenon they call the “contagion effects of bank run behavior,” something akin to the spread of a disease. The researchers in fact applied methodologies designed for the study of how epidemics spread to analyze the behavior of the depositors. Just as a person might contract a

disease via contact with an infected neighbor, so too is a depositor likely to withdraw money from the bank because of such activity in his or her social network. Iyer and Puri’s minute-by-minute withdrawal data show that

“The longer customers have had their money in a bank, the less likely they are to join the stampede to withdraw their funds.”

community networks are important. They use various measures of such networks, such as one’s neighborhood, similar ethnicity in the neighborhood, and networks based on links through the introducer who helped open the bank account. In all cases, they find, if people in your network run, you are more likely to run.

Equally significant are the factors the researchers find that can mitigate the propensity to make a run on the bank. Deposit insurance helps, but only partially. An intriguing finding is that the length and depth of bank-depositor relationships are highly significant. The longer customers have had their money in a bank, the less likely they are to join the stampede to withdraw their funds. Similarly, if the customers have taken loans from the bank in the past, they are less likely to run in response to rumors about the bank’s solvency. Even given the important influence of one’s social network, Iyer and Puri find that the length and depth of a customer’s relationships with the bank act as a dampening factor on the depositor’s inclination to run.

From the bank’s point of view, these results highlight the importance of relation-

ships with a bank in influencing depositors’ incentives to run. This suggests that one rationale to encourage cross-selling of deposits and loans to depositors is not simply to enhance revenues, but also to help protect the bank by

acting as a complementary insurance mechanism. Moreover, the results of this study imply that allowing banks to provide an umbrella of products could strengthen the relationship with the depositor, which in turn could help reduce fragility.

These findings on the importance of bank-depositor relationships are provocative. Previous studies indicated that small banks generally supply more credit to small borrowers and give better terms. Iyer and Puri say that a side benefit of such lending is a reduction in the vulnerability to runs. Similarly, banks tend to give better terms to depositors who borrow from them. Iyer and Puri say this makes sense because such lending acts as a complementary insurance mechanism.

One important question that has not been addressed in prior literature is whether bank runs have long-lasting effects, even if the banks remain solvent. Iyer and Puri’s analysis finds that most depositors who run do not return to the bank, suggesting that the effects of bank runs are indeed long lasting.

— Matt Nesvisky

Derivatives Markets for Home Prices

The near absence of derivatives markets for real estate, particularly single-family homes, is a striking anomaly that cries out for

explanation, according to NBER Research Associate **Robert Shiller**. In the United States alone, the value of real estate held by house-

holds is about \$20 trillion, which rivals the stock market. And yet the kinds of derivative instruments available for real estate are

miniscule compared to those for stocks. In **Derivatives Markets for Home Prices** (NBER Working Paper No. 13962), Shiller talks about why we need such a market, how it might be designed, and why past efforts in the United Kingdom and, to a lesser extent, the United States have not been completely successful.

Two theories have been proposed to explain the lack of a derivatives market for housing: “the regret theory” and “the lack-of-hedging theory.” The regret theory assumes that homeowners are reluctant to realize a loss on their house, so in a declining market, they delay selling. They may also avoid hedging their risks, for that too would force them to acknowledge the losses they already made. The lack-of-hedging theory, in its simplest form, means that people generally expect to live in a house forever, and if they don’t plan to sell their property, then the price it might attain in the market is irrelevant to them. If that is the case, then hedging their home-price risks (as with derivative securities) might actually *create* problems, rather than solving them:

if home prices should rise, then a homeowner who had shorted the market with derivatives would have to come up with the money to pay on the risk-management contract.

“The principal problem [with] the market for real estate derivatives...[is] liquidity... institutional investors... observed relatively large bid-ask spreads and only small positions offered.”

Neither of these theories is the primary reason for the slow growth of the derivative markets for real estate, Shiller believes. The regret theory does not seem powerful enough to be a long-term obstacle to hedging housing market risk. During a housing downturn, the decline in the volume of sales in the cash market for homes is typically no more than 40 percent. If one were to apply that ratio to the volume of trade in single-family home derivatives in the present market, it would suggest that there still should be a huge market for these securities.

The lack-of-hedging theory doesn’t seem powerful enough either, Shiller feels, especially at present, when talk about the real estate mar-

ket is everywhere, and when a “subprime crisis” fundamentally related to the real estate market has been described as the biggest risk facing the national economy. Instead, Shiller believes

that there are inherent problems in getting any new market started, problems that are heightened when the new market is very unusual.

The principal problem, Shiller concludes, is that the market for real estate derivatives does not yet have enough liquidity. He reports that he spoke to institutional investors who considered placing orders in these derivatives but decided to wait a year, at least, because they observed relatively large bid-ask spreads and only small positions offered. Shiller suggests that “the liquidity of the futures and options market may be enhanced as other derivatives, such as index-linked notes, forwards, and swaps take hold.”

— Lester Picker

Unemployment Insurance Provides Needed Liquidity

One of the classic findings in public finance is that generous unemployment insurance (UI) benefits reduce labor supplied by those who are eligible for these benefits. Traditionally, this finding has been interpreted as evidence that UI reduces the net wage associated with finding a new job; it also makes leisure relatively more attractive than working, which reduces economic efficiency and welfare. But in **Moral Hazard vs. Liquidity and Optimal Unemployment Insurance** (NBER Working Paper No. 13967), NBER Research Associate **Raj Chetty** questions whether the link between unemployment benefits and the duration of unemployment is attributable only to this traditional net wage effect, or whether it might depend on the cash-on-hand available to unemployed individuals (or, what we call liquidity). Nearly half of job losers in the United States report no liquid wealth at the time they lose their job, suggesting that many households may be unable to weather even a temporary shock to their income. Indeed, Chetty finds that the majority of the increase in the duration of unemployment that is

caused by UI benefits actually is attributable to the liquidity effect, which he links to cash on hand at the time of job loss, rather than to the net wage effect. Unlike the net wage effect, the liquidity effect improves economic

“The majority of the increase in the duration of unemployment that is caused by UI benefits actually is attributable to the liquidity effect, which he links to cash on hand at the time of job loss, rather than to the net wage effect.”

welfare; therefore, the unemployment insurance program may create a substantial benefit by providing households with much needed liquidity while unemployed.

Using a dataset of more than 4,500 unemployment spells, Chetty first shows that increases in UI benefits have much larger effects on the duration of unemployment for liquidity-constrained households (that is, households with low levels of liquid wealth) than for other households. Then, using data from two surveys that Mathematica conducted for the Department of Labor, he finds that lump-sum severance payments also increase the duration of unemployment sub-

stantially among liquidity-constrained households. Because lump-sum severance payments are cash grants that do not distort the individual’s net wage, this constitutes direct evidence that liquidity effects are large. Combining the

two sets of estimates, Chetty concludes that 60 percent of the increase in unemployment duration caused by UI benefits is attributable to the liquidity effect. Finally, Chetty uses this estimate to show that the UI program yields significant welfare gains by providing liquidity, despite reducing efficiency by making work less attractive.

Although Chetty focuses on unemployment, the theoretical approach that he develops in this paper may have broader applicability, such as in calculating the welfare gains from other social and private insurance policies. For example, one could calculate the value of a health insurance program by esti-

mating the extent to which an individual's medical expenditures would differ if he were paid a lump sum rather than an indemnity benefit that would cover his health expenses. This method does not require data on the

outcomes of insurance provision—such as health, consumption, or job match quality—which historically have proved to be difficult to measure. More generally, Chetty suggests that developing identification strategies

similar to his to analyze optimal policy in contexts beyond insurance should be a high priority for further research.

—Lester Picker

What Drives Retail Price Movements?

Recent research shows that retail prices vary enormously over short time periods—within a year, the price of a typical grocery product can vary by 20–30 percent. These movements are large relative to the factors that economists usually think of as driving prices, such as wages and firm productivity.

In **Pass-Through in Retail and Wholesale** (NBER Working Paper No. 13965), NBER Faculty Research Fellow **Emi Nakamura** studies how prices co-move across products, firms, and locations to understand what drives these large price movements. Nakamura finds that only 16 percent of price variation is common across all stores selling an identical product, while 65 percent of price variation is common to stores within a particular retail chain (but not across chains), and 17 percent of variation is completely idiosyncratic to the individual store and product. In other words, when the price drops on Diet Coke at the 125th street Pathmark store, chances are that the price will not drop at the Fairway market down the street.

For her analysis, Nakamura uses a new dataset from A.C. Nielson that consists of weekly price and quantity series throughout 2004 for about 7,000 grocery stores across the United States. These stores encompass 33 chains in 50 major cities, for 100 bar-coded (Universal Product Code) items, totaling some 50 million observations.

Price movements such as those she

observes do not arise from manufacturer demand or supply shocks, Nakamura argues, because those factors presumably would lead to common price movements across all stores. Furthermore, she finds that only a small frac-

“Only 16 percent of price variation is common across all stores selling an identical product, while 65 percent of price variation is common to stores within a particular retail chain (but not across chains), and 17 percent of variation is completely idiosyncratic to the individual store and product.”

tion (19 percent) of price variation is common to all products in a category at a given retail store. In other words, when the price of Diet Coke drops at the Pathmark, chances are that price of the Pepsi Max down the aisle will not change. Therefore, Nakamura argues, retail demand and supply shocks are not the likely “drivers” of the observed price movements: if most price movements for Diet Coke arise from changes in supermarket costs or demand, then the resulting price movements should be common across different soft drinks—and this isn't the case in the data.

These patterns suggest that retail prices vary largely as a consequence of dynamic pricing strategies on the part of retailers or manufacturers, rather than current demand and supply conditions. Not surprisingly, temporary sales play an important role in this price variation, accounting for a large fraction of the observed price movements. Furthermore, products with many temporary sales, such

as soft drinks, also have a disproportionately large fraction of price variability that is entirely idiosyncratic to both the store (for example, Pathmark) and product (for example, Diet Coke).

The large amount of idiosyncratic movement in prices implies that average price series for a particular UPC—that is, averaged across retailers—behave very differently from the underlying store-specific prices. Following an individual product over time week by week, Nakamura finds that prices are highly variable, with frequent price movements on the order of 10–15 percent, and also highly transitory, so that a low price this week says little about whether prices will be low the next week. But, taking the same data for a given UPC and averaging over stores and *within* months leads to a price series that is far smoother—the variability of prices drops by two-thirds—and far more persistent. While individual price series seem dizzyingly complex, the lower volatility and greater persistence of the nationwide averages seems to leave greater scope for a link to standard economic factors such as wages, productivity, and exchange rates.

—Matt Nesvisky

NBER

The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:

James M. Poterba—President and Chief Executive Officer

Elizabeth E. Bailey—Chairman

John S. Clarkeson—Vice Chairman

The NBER Digest summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision. The Digest is issued for similar informational purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the Digest

has been reviewed by the Board of Directors of the NBER.

The Digest is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.

Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside of the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. To order, call the Publications Department at (617) 868-3900 or visit www.nber.org/papers. Please have the Working Paper Number(s) ready.

Subscriptions to the full NBER Working Paper series include all 700 or more papers published each year.

Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$6500; for academic libraries and faculty members, \$5360. Higher rates apply for foreign orders. The on-line standard rate for a full subscription is \$1800 and the on-line academic rate is \$750.

Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

Requests for Digest subscriptions, changes of address, and cancellations should be sent to Digest, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.