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Fed Policy in the Financial Crisis: Arresting the Adverse Feedback Loop

by Danielle DiMartino Booth and Jessica J. Renier

The Fed has taken a series of actions—many unprecedented—that may have finally positioned the economy for growth.

An adverse feedback loop takes hold when a weakening financial system and a slowing economy feed off each other. A crisis or shock curtails lending, hobbling the real economy; the more production and employment falter, the more lending contracts, causing further harm to the economy. The result is a downward spiral of business and financial activity.

The Federal Open Market Committee (FOMC) warned of the danger in late January 2008, when few analysts recognized that a recession had begun the previous month. It noted "the especially worrisome possibility of an adverse feedback loop; that is, a situation in which a tightening of credit conditions could depress investment and consumer spending, which, in turn, could feed back to a further tightening of credit conditions."[1]

The financial crisis validated the FOMC's concern, igniting what has become the worst post-World War II economic downturn in terms of length and, by some measures, depth and breadth. Housing market troubles began in 2006 and deepened well into 2009. As the economy sank into recession, an October 2008 Fed survey found that two-thirds of banks had tightened standards for the highest-quality residential mortgages and over three-quarters had reined in business lending. The credit contraction sent spending down and unemployment up, exacerbating threats to the financial sector and dimming prospects for stability in housing.

Arresting the adverse feedback loop could prove to be the seminal challenge of early 21st century monetary policymaking. Since sounding the alarm in January 2008, the Fed has taken a series of actions—many unprecedented—to prevent additional damage to financial markets and restore lending activity. These policies have had some success in loosening the grip of the adverse feedback loop and may have finally positioned the economy for growth. Still, doubts linger. The risk remains that the actions may prove insufficient to put the economy on a clear path to rising employment and stable prices.

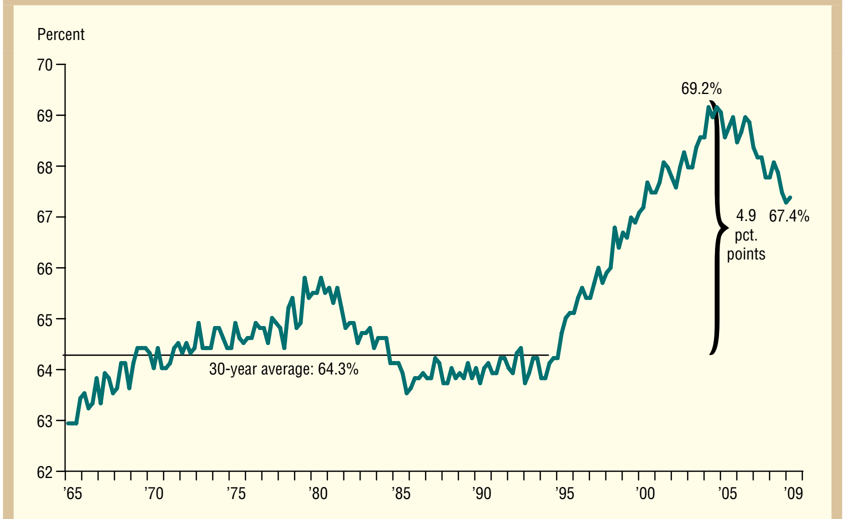
Knocked for a Loop

An adverse feedback loop's seeds are often planted in good times. As the U.S. economy emerged from the 2000–01 recession, lax lending standards and excessive borrowing led to an unprecedented housing boom. Easy credit prompted many Americans to become first-time homeowners, putting upward pressure on housing prices and emboldening builders to borrow to meet the leverage-fueled demand.

The surge in risky lending couldn't have occurred without the pooling of loans for sale to investors as securities. Feeding these securitization markets was the rapidly growing, $11 trillion shadow banking system, a catchall term for nonbank financial institutions such as investment banks and hedge funds.

By late 2008, mortgages and home equity loans accounted for 109 percent of disposable personal income, up from 65 percent in 1995. In the fourth quarter of 2005, real estate investment in new homes hit a 54-year high of 6.3 percent of gross domestic product (GDP), well above the 5.7 percent average of the six housing construction-cycle peaks since 1955. Homeownership rates crested at 69.2 percent in late 2004, nearly 5 percentage points above the long-term average of 64.3 percent (*Chart 1*).

Chart 1
Housing Boom Drives Up U.S. Homeownership Rate



SOURCE: Census Bureau.

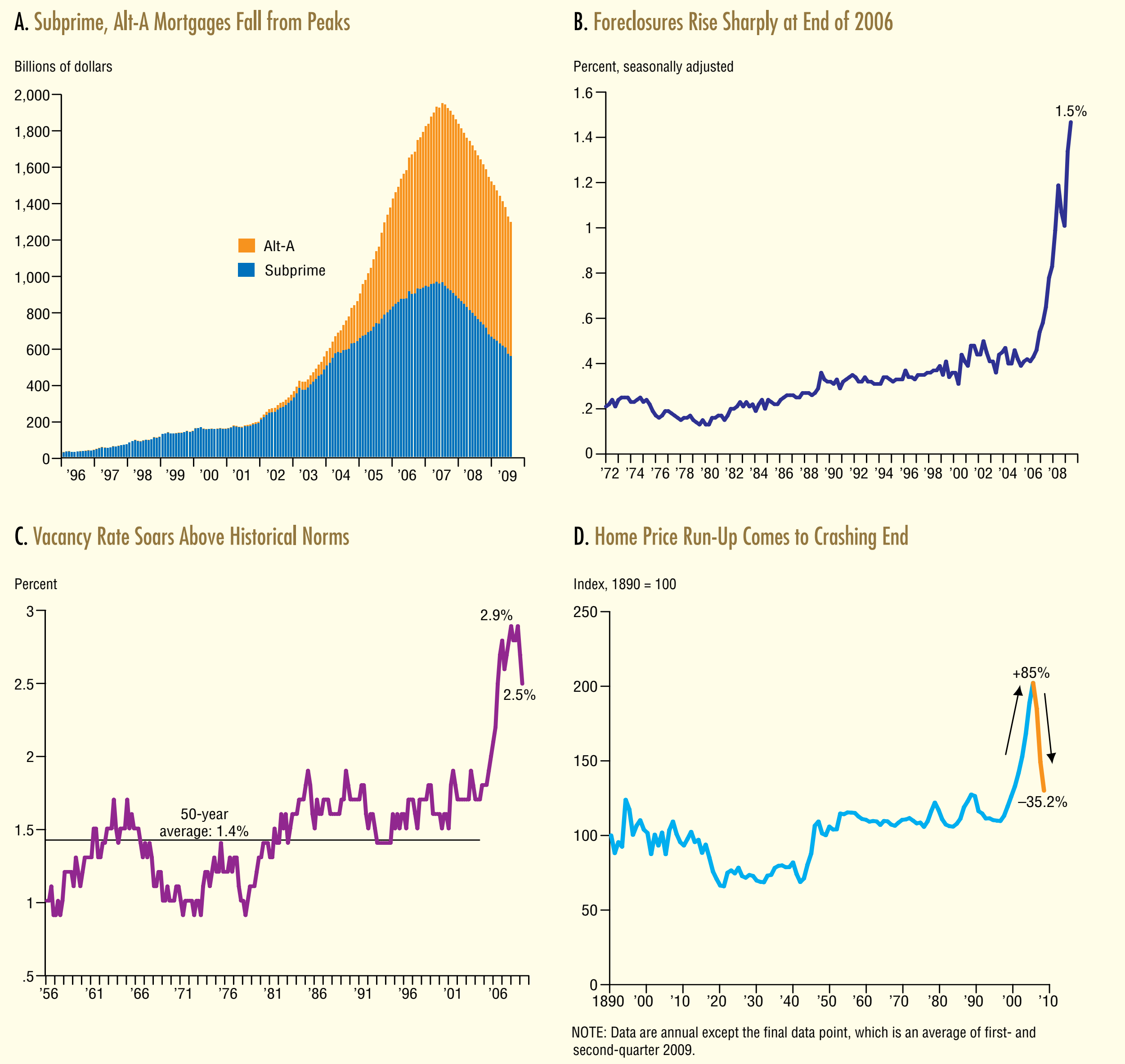
The housing boom ended abruptly in late 2005, sending homeownership rates back down. Several factors were at work. First, a choking off of lending exiled the marginal buyers who had fueled the market. Second, delinquencies rose sharply as adjustable-rate loans reset to higher interest rates, sending shock waves through credit markets. Third, supply began to overwhelm demand, putting downward pressure on housing prices.

Key housing indicators went into full-fledged retreat. As lenders grew wary of risk and securitization markets turned balky, mortgage credit evaporated, particularly for the riskier segments that had been driving housing demand. Subprime mortgages fell from a peak of nearly $1 trillion in May 2007—a 10th of the U.S. mortgage market—to $560 billion in August 2009 (*Chart 2A*). The Alt-A market, which surpassed the subprime market in May 2007, dwindled from its peak of $1 trillion in August 2007 to $740 billion in August 2009.[2]

The quarterly rate of new foreclosures first broke prior cycles' records in the last three months of 2006 (*Chart 2B*). A forecast by the housing research firm Zelman & Associates calls for 3.51 million U.S. households to receive foreclosure notices in 2009 and for about 2.25 million of those to result in lost homes. In the four years through 2012, the forecast is for 10.7 million households to default and 6.5 million to lose their homes.

Problems have been acute for adjustable-rate mortgages (ARMs), which surpassed fixed-rate loans as a share of new issues near the housing boom's height in March 2005. Even

Chart 2
Tracking the Housing Market Collapse



SOURCES: Moody's Economy.com; Mortgage Bankers Association; Census Bureau; *Irrational Exuberance,* 2nd ed., by Robert J. Shiller, Princeton, N.J.: Princeton University Press, 2005, as updated.

so, ARMs made up only 6.8 percent of total U.S. mortgages in the third quarter of 2007, but their rapid deterioration had a large impact. Some 43 percent of foreclosures started during the quarter were attached to subprime ARMs.[3]

Waning enthusiasm for high-risk mortgages curtailed housing demand. Meanwhile, rising foreclosures added to supply at a time when home builders hadn't yet heeded signals to cut new construction.

Vacant homes for sale, a measure that excludes occupied houses that could be pulled from the market, helps gauge overbuilding. After running at 1.4 percent for 50 years, the vacancy rate began to rise in late 2005, hitting a peak of 2.9 percent at the end of 2008 (*Chart 2C*). The rate has since declined to 2.5 percent, but the overhang still means supply exceeds demand by more than 830,000 homes.

When the housing troubles began, home prices hadn't fallen nationally since the Great Depression. So the confluence of tighter mortgage credit, rising delinquencies and excess supply produced a result that could only be regarded as extraordinary. The greatest home price appreciation in U.S. history—an 85 percent run-up in six years—gave way to a 35 percent plunge from the peak in 2006 (*Chart 2D*). Declining home prices remains the biggest challenge to arresting the adverse feedback loop.

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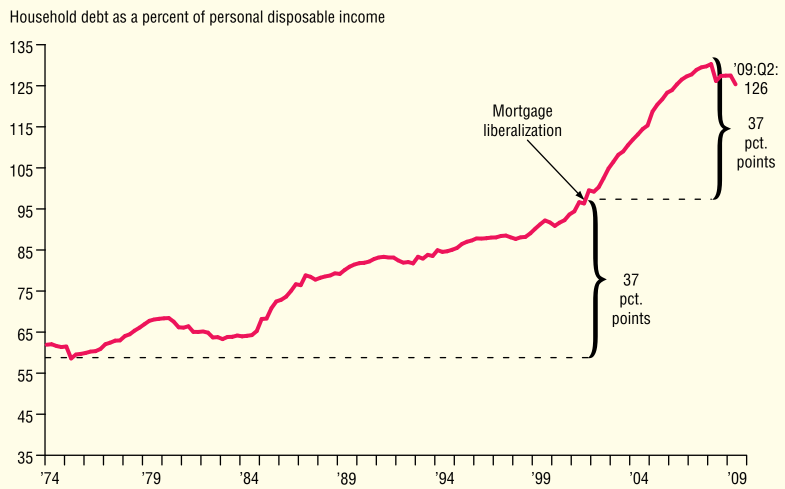
The Pain Spreads

As housing prices started to tumble in early 2007, debate centered on whether the damage would be limited to the housing sector or spread to the wider economy. By the end of 2008, the housing bust began to affect consumer spending, employment and borrowing. It was clear the adverse feedback loop the Fed feared had arrived.

A key factor was debt, which had piled up during the housing boom as rapidly rising home prices emboldened consumers to spend beyond their means. In the seven years leading up to 2008, U.S. households accumulated the same amount of debt as they did in the previous 26 years (*Chart 3*).

Chart 3
Household Debt Burden Rises Sharply



SOURCES: Federal Reserve Board; Bureau of Economic Analysis.

Throughout the 2000–01 recession, Americans continued to increase spending. This time around, a tightening vise of debt and credit forced households to pull back, leading to the nation's first consumption decline since the fourth quarter of 1991. Wary consumers cut into companies' sales and profits, adding troubled businesses to the economy's downward spiral.

Businesses faced another obstacle—tightening credit markets. Even the largest corporations with the strongest credit standings had to pay higher interest rates to access working capital. Small businesses, which often rely on credit cards to pay operating expenses, faced even more severe restrictions. By the second half of 2008, a National Small Business Association survey found that 69 percent of companies were battling tighter terms on their credit cards.[4]

Falling revenues and constrained credit proved a toxic combination for many employers. Nearly 7 million American workers lost their jobs between the recession's start in December 2007 and August 2009—the biggest percentage drop in employment in any economic slump since 1949. By the conventional barometer, unemployment rose to 9.7 percent. A broader measure shows even greater pain. Effective unemployment, which includes those working part time for economic reasons and those who've given up looking for jobs, rose to 16.8 percent in August—its highest mark since the series began in 1994.[5]

Mortgage delinquencies initially gained momentum without a rise in the jobless rate, a phenomenon not seen in previous housing downturns. After the recession began, higher unemployment led to a feedback loop, providing a secondary spur to push delinquencies higher and extending troubles to even the most creditworthy homeowners.

In the 12 months ending June 2009, prime borrowers' share of fixed-rate conventional loans in arrears or foreclosure grew faster than any other mortgage market segment, doubling to 6.6 percent. Making matters worse was the increased number of ARMs that reset to higher interest rates. The adjustment is far from over. About $1.1 trillion in mortgages will reset over the next three years, including many of the more exotic Alt-A, jumbo, option-ARM and interest-only mortgages underwritten during the boom years.[6]

The feedback loop spiraled further down as untenable mortgage payments made it harder for households to meet other obligations. Credit card and auto loan charge-offs then climbed to record levels. So did delinquencies on home-equity loans.

For many, the debt burdens became too heavy. Personal bankruptcy filings per day have soared 136 percent since 2006, approaching levels last seen in 2005, before a new law made filing more arduous.[7] Business bankruptcy filings have risen at an even faster pace recently, a further indication of constrained credit's adverse feedback into the real economy.

Borrowers' mounting troubles led banks to tighten lending policies beyond the mortgage market. For example, lenders began reducing credit card lines for households and small businesses. Issuers cut $500 billion of credit card lines in the last three months of 2008, with predictions for an additional $2.7 trillion by the end of 2010.[8]

Borrowers were pulling back at the same time, further evidence of a growing reluctance to spend. By February 2009, American consumers had done something unprecedented. They reduced their credit card use and pushed balances below year-earlier levels—the first interruption of rising U.S. indebtedness on record (*Chart 4*). Automobile loans have also been declining, but at a slower rate. Overall, consumer credit outstanding has fallen $110 billion from its July 2008 peak—a 4.2 percent annualized rate.

The unrelenting cycle of contracting credit bleeding into the real economy has severely hampered the housing market's ability to recover. In some cases, lenders appear to be holding foreclosed homes off the market, hoping for a rebound that would save them from posting losses. A four-state analysis by consultant RealtyTrac, made public in January, found that real estate listings included only a third of the foreclosures it had in its database.[9] The other two-thirds—the shadow inventory of homes—helps explain why foreclosure filings flowing into the pipeline haven't caused even larger price declines.

Over the past two years, the initial troubles in housing have spilled over to the broader economy, causing a downward cycle of distress in consumer spending, employment and credit markets and creating greater risks for the housing sector. Fears that continued deterioration in housing would lead to further losses led to Fed

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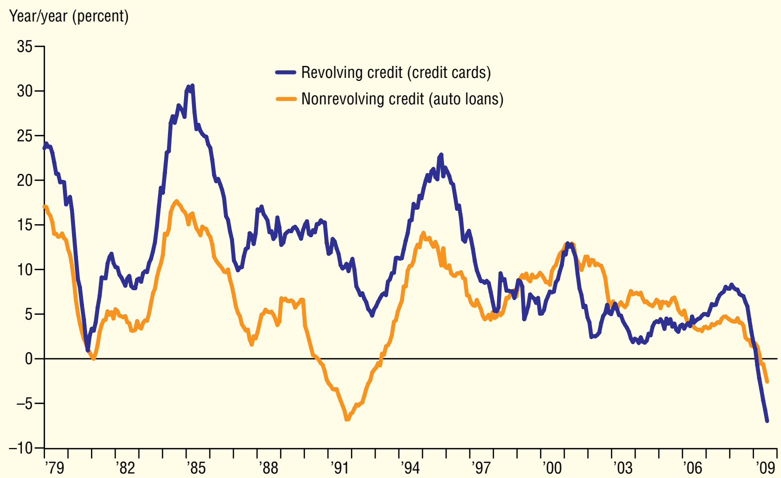
Chart 4
Net Credit Card Borrowing Turns Negative



SOURCE: Federal Reserve Board.

actions aimed at arresting the adverse feedback loop.

The Fed Takes Action

Early on, the Fed saw the possibility of an adverse feedback loop, and it has marshaled a combination of conventional and unconventional policies in an attempt to avert and then break the downward spiral. As the financial crisis sapped lending in 2008, the central bank acted to increase credit availability, or at least to reduce its cost, by aggressively cutting the federal funds rate, its primary policy tool for influencing borrowing costs. By December 2008, rates were close to zero, their lower limit.

Financial market troubles deepened in the fall of 2008, prompting the Fed to take initiatives that might be characterized as credit easing.

While it was cutting rates, the Fed introduced programs to auction collateralized long-term loans to banks, extend discount window operations to primary dealers and create a lending facility to allow money market funds direct access to collateralized loans.

Financial market troubles deepened in the fall of 2008, prompting the Fed to take its response to another level with initiatives that might be characterized as credit easing for the broad economy. Some initiatives sought to mitigate collateral damage to the real economy stemming from the credit crisis. Others targeted falling home prices by addressing obstacles to residential mortgage lending.

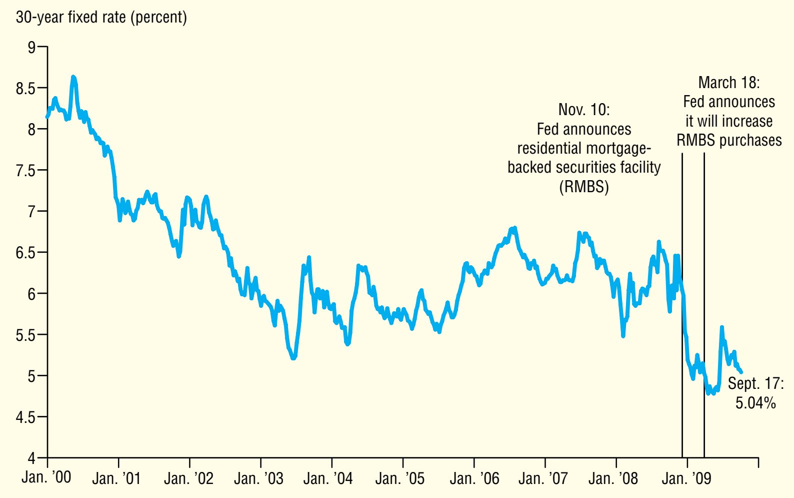
Many business operations were hampered by the squeeze on short-term financing, a key source of working capital needed to prevent deeper reductions in inventories, jobs and wages. To this end, the Fed funded purchases of top-rated commercial paper through the commercial paper funding facility, announced in October 2008. Since then, commercial paper markets have seen wider issuance and narrower spreads—both signs of a return to normalcy.[10]

Unfreezing consumer lending beyond mortgages came into play with the term asset-backed securities loan facility, or TALF, announced in November 2008.[11] The TALF's first phase injected liquidity into the securitization markets for credit card, automobile and small business lending. Its second phase provided financing to the commercial real estate market, a sector that has increasingly threatened to destabilize banks' capital positions through a fresh wave of write-downs and losses.

In November 2008, the Fed made a direct assault on troubled housing markets through the purchase of residential mortgage-backed securities, a program expanded in March 2009. Since the program began, mortgage interest rates have generally declined, encouraging homebuying and refinancing (*Chart 5*). Refinancing activity has doubled since last year, saving many homeowners from foreclosure and preventing further additions to the shadow inventory of homes for sale.

In some parts of the country, lower home prices are bringing demand and supply into sync. In California, distressed sales have helped pull prices down to much more affordable levels in a relatively short time. After surging to nearly $600,000 during the boom,

Chart 5
Fed Actions Help Reduce Mortgage Interest Rates



SOURCES: Bloomberg; Freddie Mac.

California's median home price fell below $250,000 in early 2009 (*Chart 6*). It then rose for five consecutive months through July 2009, a sign that the market has pulled out of its tailspin. Renewed demand at a lower price point pushed inventories to a 3.9-month supply, the lowest in three and a half years.

In 2009, the Fed has continued to pursue policies aimed at breaking the adverse feedback loop. With the federal funds rate near zero, the Fed still tried to inject added buying power into the economy through quantitative easing, a seldom-used policy tool that seeks to spur bank lending by increasing the money supply through direct purchases of securities. On March 18, the Fed said it would buy $300 billion in Treasury securities to push their interest yields down, hoping to encourage banks to lend more freely.[12]

Dangers Still Loom

The Fed attacked the adverse feedback loop aggressively, using a broad range of innovative policies to break the downward momentum at several points. Toward the end of summer 2009, the pace of the economy's decline had slowed and positive signs were showing up in financial markets, housing and manufacturing.

These bits of good news are heartening, but dangers still lurk. The global financial system has taken an estimated $1.6 trillion in losses since the crisis erupted. Even so, a lot more bad debt remains on balance sheets, hindering ability and willingness to lend. Institutions have yet to absorb the traditional losses that flow from recession.

A majority of U.S. consumers responding to University of Michigan surveys have said they expect high unemployment to persist over the next several years, a mindset that could pose challenges for policymakers. The worries will continue to put downward pressure on consumer spending and company revenues. Struggling employers will be reluctant to add jobs and could even impose further cuts, which would continue to feed delinquencies and pressure home prices, making it more difficult to arrest the adverse feedback loop.

Housing's road to recovery may contain potholes. For example, loan modifications may simply forestall eventual foreclosures. Recent Boston Fed research found that nearly half of renegotiated mortgages fall delinquent again within six months.[13] No doubt, more foreclosures will increase the downward pressure on prices and add to the excess supply of homes on the market.

The unsold homes that clog bank balance sheets will hit the market at some point. Including the shadow inventory increases the supply of existing homes for sale from 9.4 months to 12 months as of July.[14]

High foreclosure rates perpetuate the adverse feedback loop, but they may be a necessary price to pay to unravel the housing market's excesses. By forcing home prices to more sustainable levels, foreclosures play an important role in clearing markets. Affordability is critical to a lasting

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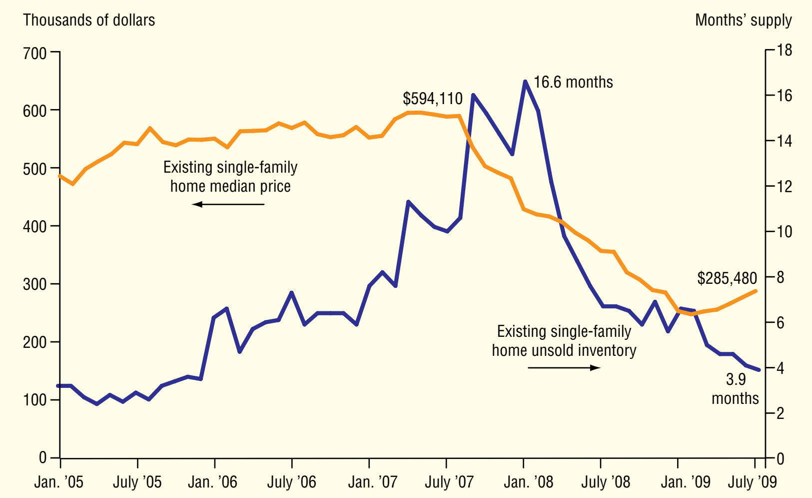
Chart 6
California Housing Market Moves Toward Clearing Level



SOURCE: California Association of Realtors.

recovery in the housing market and, by extension, the broader economy.

The strategy for arresting the adverse feedback loop is to interrupt the downward spiral at several points, not just in the housing and financial markets that started it all. The economy's recent trends are encouraging, but the potential dangers suggest it's too soon to conclude that the adverse feedback loop has been broken.

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Notes

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[1] See the FOMC's minutes for Jan. 29–30, 2008, www.federalreserve.gov/monetarypolicy/fomcminutes20080130.htm.

[2] Alternative-A, or Alt-A, mortgages—alternatives to A, or prime, mortgages—typically went to borrowers who had higher credit scores than subprime borrowers but had no proof of income, high debt-to-income ratios or excess loan-to-value ratios. See "Accounting for Changes in the Homeownership Rate," by Matthew Chambers, Carlos Garriga and Don E. Schlagenhauf, Federal Reserve Bank of Atlanta, Working Paper no. 2007-21, September 2007, www.frbatlanta.org/filelegacydocs/wp0721.pdf.

[3] Borrowers weren't using ARMs due to historically high mortgage rates; instead, housing prices were high, and buyers couldn't afford homes without the loans' ultra-low teaser rates. Most subprime ARMs underwritten during the boom carried a two-year lock before resetting to higher rates.

[4] See "2009 Small Business Credit Card Survey," National Small Business Association, www.nsba.biz/docs/09CCSurvey.pdf.

[5] Effective unemployment, a Bureau of Labor Statistics measure known as the U-6, is calculated by adding total employed workers in the labor force, plus all marginally attached workers, plus workers who are employed part time for economic reasons, expressed as a percentage of the sum of the civilian labor force and all marginally attached workers. Marginally attached workers are those who are not in the labor force but have searched for work, are available for work and want a job now.

[6] The figure is based on calculations by financial services firm Credit Suisse.

[7] Data are from American Bankruptcy Institute statistics. For more on the subject, see "Bankruptcy Filings Return to Pre-Reform-Law Pace," by Martin Merzer, CreditCards.com, July 20, 2009, www.creditcards.com/credit-card-news/bankruptcy-filings-back-to-pre-reform-levels-1282.php.

[8] This is the payback for consumer debt growing faster than GDP (or income) on a sustained basis. The readjustment to reality (or mean reversion), unless financed by the rest of the world, is likely to take several years. See "Credit Cards Are the Next Credit Crunch," by Meredith Whitney, *Wall Street Journal*, March 11, 2009.

[9] See "Flood of Foreclosures: It's Worse Than You Think," by Les Christie, CNNMoney.com, Jan. 23, 2009.

[10] For a full discussion of the commercial paper funding facility and other Federal Reserve policy tools, see "Fed Confronts Financial Crisis by Expanding Its Role as Lender of Last Resort," by John V. Duca, Danielle DiMartino and Jessica J. Renier, Federal Reserve Bank of Dallas *Economic Letter*, vol. 4, no. 2, 2009.

[11] The Fed announced the TALF in November 2008, but the program didn't begin operations until March 2009.

[12] The $300 billion commitment is minimal in the context of the $7.4 trillion in Treasury debt held by the public. The Fed has since indicated this program will wind up in October without breaching the $300 billion ceiling.

[13] See "Why Don't Lenders Renegotiate More Home Mortgages? Redefaults, Self-Cures and Securitization," by Manuel Adelino, Kristopher Gerardi and Paul S. Willen, Federal Reserve Bank of Boston, Public Policy Discussion Papers no. 09-4, July 6, 2009, www.bos.frb.org/economic/ppdp/2009/ppdp0904.pdf.

[14] Data are from the research report "Afternoon Tea with Dave: Market Musings & Data Deciphering," by David Rosenberg, Gluskin Sheff + Associates, Aug. 24, 2009.

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