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HOUSING, CREDIT MARKETS AND THE BUSINESS CYCLE

Martin S. Feldstein

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1050 Massachusetts Avenue

Cambridge, MA 02138

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ABSTRACT

The housing sector is now (September 2007) at the root of three distinct but related problems: (1) a sharp decline in house prices and the related fall in home building; (2) a subprime mortgage problem that has triggered a substantial widening of all credit spreads and the freezing of much of the credit markets; and (3) a decline in home equity loans and mortgage refinancing that could cause greater declines in consumer spending. Each of these could by itself be powerful enough to cause an economic downturn. The combination could cause a very serious recession unless there are other offsetting forces. In this paper, I discuss each of these and then comment on the implications for monetary policy.

Martin S. Feldstein
President and Chief Executive Officer
NBER
1050 Massachusetts Avenue
Cambridge, MA 02138-5398
msfeldst@nber.org

Housing, Credit Markets and the Business Cycle

Martin Feldstein*

The housing sector is now (September 2007) at the root of three distinct but related problems: (1) a sharp decline in house prices and the related fall in home building ; (2) a subprime mortgage problem that has triggered a substantial widening of all credit spreads and the freezing of much of the credit markets; and (3) a decline in home equity loans and mortgage refinancing that could cause greater declines in consumer spending. Each of these could by itself be powerful enough to cause an economic downturn. The combination could cause a very serious recession unless there are other offsetting forces. In this paper, I discuss each of these and then comment on the implications for monetary policy .

Falling House Prices

Robert Shiller (2007) presents evidence of a sharp surge in house prices after the year 2000. More specifically, national indexes of real house prices., real rents and real construction costs moved together for 25 years until the year 2000. After that, while construction costs and rents continued to move in parallel, real house prices then rose rapidly so that by 2006 they were 70 percent higher than equivalent rents., driven in part by a widespread popular belief that houses were an irresistible investment opportunity. How else could an average American family buy an asset appreciating at 9 percent a year , with 80 percent of that investment financed by a mortgage with a tax deductible interest rate of 6 percent, implying an annual rate of return on the initial equity of more than 25 percent?

*Professor of Economics, Harvard University and President of the National Bureau of Economic Research. This text is based on remarks that were presented as a final summary and personal commentary at the Jackson Hole conference of the Federal Reserve Bank of Kansas City on Housing, Housing Finance and Monetary Policy, September 1, 2007. All 2007 references in this paper are to the papers in the conference volume that is available on the web site of the Federal Reserve Bank of Kansas City.

But at a certain point home owners recognized that house prices – really the price of land – wouldn't keep rising so rapidly and may decline. That fall has now begun, with a 3.4 percent decline in housing prices over the past 12 months and an estimated 9 percent annual rate of decline in the most recent month for which data are available (a Goldman-Sachs estimate for June 2007.) The decline in house prices accelerates offers to sell and slows home buying, causing a rise in the inventory of unsold homes and a decision by home builders to slow the rate of construction. Home building has now collapsed, down 20 percent from a year ago, to the lowest level in a decade.

Edward Leamer (2007) explained that such declines in housing construction were a precursor to 8 of the past 10 recessions. Moreover, major falls in home building were followed by a recession in every case except when the Korean and Vietnam wars provided an offsetting stimulus to demand..

Why did home prices surge in the past 5 years? While a frenzy of irrational house price expectations may have contributed, there were also fundamental reasons. Credit became both cheap and relatively easy to obtain. When the Fed worried about deflation it cut the Fed funds rate to one percent in 2003 and promised that it would rise only very slowly. That caused medium term rates to fall, inducing a drop in mortgage rates and a widespread promotion of mortgages with very low temporary “teaser” rates.

Mortgage money also became more abundant as a result of various institutional changes as Ben Bernanke (2007), Ned Gramlich (2007) , and Richard Green and Susan Wachter (2007) explained. Subprime mortgages were the result of legislative changes (especially the Community Reinvestment Act) and of the widespread use of statistical risk assessment models by lenders,. In addition, securitization induced a lowering of standards by lenders who did not hold the mortgages they created. Mortgage brokers came to replace banks and thrifts as the primary mortgage originators. All of this had been developing since the 1990s but these developments contributed to the current mortgage problems when rates fell after 2000.

If house prices now decline enough to reestablish the traditional price-rent relation¹ ,

¹Shiller(2007) commented that a 50 percent decline in real house prices is “entirely possible”. A Goldman-Sachs US Economic Research Report (August 29, 2007) concluded that

there will be serious losses of household wealth and resulting declines in consumer spending. Since housing wealth is now about \$21 trillion, even a 20 percent nominal decline would cut wealth by some \$4 trillion and might cut consumer spending by \$200 billion or about 1.5 percent of GDP. The multiplier consequences of this could easily push the economy into recession.

A 20 percent national decline would mean smaller declines in some places and larger declines in others. A homeowner with a loan to value ratio today of 80 percent could eventually find himself with a loan that exceeds the value of his house by 20 percent or more. Since mortgages are effectively non-recourse loans, borrowers can walk away with no burden on future incomes. While experience shows that most homeowners continue to service their mortgages even when the loan balances slightly exceed the value of their homes, it is not clear how they would behave if the difference is substantially greater. The decision to default would be more likely if house prices are expected to fall further. .

Once defaults became widespread, the process could snowball, putting more homes on the market and driving prices down further. Some banks and other holders of mortgages could see their highly leveraged portfolios greatly impaired. Problems of illiquidity of financial institutions could become problems of insolvency.

Widening Credit Spreads

I turn now to the second way in which the housing sector is affecting our economy: the impact of subprime mortgages on credit spreads and credit availability.

For several years now, informed observers have concluded that risk was underpriced in the sense that the differences in interest rates between U.S. Treasury bonds and riskier assets (i.e., the credit spreads) were very much smaller than they had been historically.

Some market participants rationalized these low credit spreads by saying that financial markets had become less risky. Better monetary policies around the world have reduced inflation and contributed to smaller real volatility. Securitization and the use of credit derivatives were thought to disperse risk in ways that reduced overall risk levels. Most emerging market governments now avoid overvalued exchange rates and protect themselves with large foreign

“nominal house prices will likely need to fall by 15-30% ... over the next several years.”

exchange reserves. There was also the hope based on experience that the Federal Reserve would respond to any financial market problems by an easing of monetary policy.

Many of us were nevertheless skeptical that risk had really been reduced to the extent implied by existing credit spreads. It looked instead like the very low interest rates on high grade bonds were incenting investors to buy riskier assets in the pursuit of yield. Many portfolio managers were enhancing the return on their portfolios by selling credit insurance – i.e., by using credit derivatives to assume more risk – and by using credit to leverage their investment portfolios on the false assumption that the basic portfolio had relatively small risk. Investors took comfort from the apparent risk transfer in structured products. And less sophisticated investors were buying such structured products without actually recognizing the extent of the risk.

Most of the institutional investors who thought that risk was mispriced were nevertheless reluctant to invest based on that view because of the cost of carrying that trade. Since virtually all such institutional investors are agents and not principals, they could not afford to take a position that involved a series of short term losses. They would appear to be better investment managers by focusing on the short term gains that could be achieved by going with the herd to enhance yield by assuming increased credit risk.

But these investors also shared a widespread feeling that the day would come when it would be appropriate to switch sides, selling high risk bonds and reversing their credit derivative positions to become sellers of risk. No one knew just what would signal the time to change.

It was the crisis in the subprime mortgage market that provided the shock that started the wider shift in credit spreads and credit availability.

Subprime mortgages are mortgage loans to high risk borrowers with low or uncertain incomes, high ratios of debt to income, and poor credit histories. These are generally floating rate mortgages, frequently with high loan-to-value ratios and very low initial “teaser” rates. A realistic assessment would imply that the borrowers would have trouble meeting the monthly payments once the initial teaser rate period ended and the interest rate rose to a significant premium over the rates charged to prime (i.e., low risk) borrowers.

Borrowers with subprime credit ratings nevertheless took these adjustable rate loans with low teaser rates because they wanted to get in on the house price boom that was sweeping the

country. Some of them hoped on the basis of recent experience that market prices would rise enough by the time that they had to face higher interest rates that they could refinance with a lower loan to value ration and therefore a lower interest rate. Many of those who originated the loans were mortgage brokers who sold them almost immediately at a profit to the financial market and therefore did not care about the ability of the borrowers to service their debt..

The sophisticated buyers of the subprime loans could then bundle them into large pools of mortgages and sell participation in that pool. Often the pool was “tranching” to offer different degrees of risk to different buyers. In a simple case, the highest risk tranche might represent the first 10 percent of the mortgages to default and would carry a correspondingly high interest rate. Buyers of the next tranche would incur losses only if more than 10 percent of the mortgages defaulted. The highest quality tranche, which would incur losses only after 90 percent of the mortgages had defaulted, was regarded as so safe that the rating agencies would give it a better than AAA rating even though all of the underlying assets were subprime mortgages.

In retrospect, the riskiness of individual tranches was often underestimated by the rating agencies and by those who bought the participation in the risk pool.² These were nevertheless combined with other more traditional bonds and commercial paper in structured notes and even in money market mutual funds that had high ratings and attractive yields.

This was clearly an accident waiting to happen. The subprime problem unfolded quickly with very high default rates on subprime loans.

Because subprime mortgages are a relatively small fraction of the total mortgage market and therefore an even smaller fraction of the total global credit market, many experts and government officials initially claimed that the subprime problem would have only a very limited effect on capital markets and the economy.

But the subprime defaults and the dramatic widening of credit spreads in that market triggered a widespread flight from risk, widening credit spreads more generally and causing price declines for all risky assets. When those risky assets were held in leveraged accounts or

²This reflected in part the use of data on borrower experience in recent years in which house prices were rising and interest rates declining.

when investors had sold risk insurance through credit derivatives, losses were substantial.

As credit spreads widened, investors and lenders became concerned that they did not know how to value complex risky assets. Credit ratings came under suspicion when failures exceeded levels associated with those official credit ratings. A result was a drying up of credit for risky investments, including private equity acquisitions.

Loans to support private equity deals that were already in the pipeline could not be syndicated, forcing the commercial banks and investment banks to hold those loans on their own books. Banks are also being forced to honor credit guarantees to previously off-balance-sheet conduits and other back-up credit lines. These developments are reducing the capital available to support credit of all types. One result has been that hedge funds have been forced to sell stocks (or buy back short positions) because they could not obtain credit to maintain their portfolios.

It will of course be a good thing to have credit spreads that correctly reflect the actual risks of different assets. But the process of transition may be very costly to the overall economy.

Declining Mortgage Credit for Consumer Spending

This brings me to the third way in which the housing sector now contributes to the adverse outlook of the American economy: the potential for a substantial decline in consumption in response to lower home equity withdrawals through home equity loans and mortgage refinancing. This channel is in addition to the effect of reduced wealth caused by a fall in house prices.

An important feature of the US mortgage system is that most borrowers can repay at any time without penalty. When interest rates fall, the borrower can replace the existing mortgage with a new one at a lower interest rate. If the value of the property has increased since the existing mortgage was obtained, refinancing also provides an opportunity to withdraw cash – the so-called mortgage equity withdrawal (or MEW).

Starting in 2001, the combination of lower mortgage rates and the rapid rise in house prices led to widespread refinancing with equity withdrawals, a practice heavily promoted by banks and mortgage brokers. Someone who obtained a mortgage at 7.7 percent in 1997 could refinance at a 5.8 percent rate in 2003 and extract substantial cash at the same time.

A massive amount of such refinancing and equity withdrawal occurred. In 2005, 40 percent of existing mortgages were refinanced. The Flow of Funds data imply that mortgage equity withdrawals between 1997 and 2006 totaled more than \$9 trillion, an amount equal to more than 90 percent of disposable personal income in 2006.

This new borrowing was used to pay down other non-mortgage debts, to invest in financial assets, and importantly to finance additional consumer spending.

There is a vigorous professional debate about the extent to which MEWs did lead to additional consumer spending, (Frederick Mishkin (2007) , John Muellbauer (2007)). Alan Greenspan and James Kennedy (2004) , in Federal Reserve Bank research paper, concluded from an analysis of survey data that substantial fractions of the MEW funds were used to finance home improvements or general consumption. It is significant in this context that home improvements would generally be treated in the national income accounts as a form of consumer spending rather than investment.

Mishkin and others are skeptical about the effect of mortgage equity withdrawals on consumer expenditures, pointing out that individuals may choose to undertake mortgage refinancing simply because they want to increase their spending or undertake home improvements. While that may be true in some cases, I believe that the combination of rapidly rising home prices that more than doubled the value of owner occupied housing between 1999 and 2006 – an increase of more than \$10 trillion dollars – and the substantial fall in interest rates were the primary drivers of the large rise in mortgage equity withdrawals. I believe that it was the availability and low cost of mortgage equity withdrawals that caused the increased consumer outlays.

Muellbauer notes that the relatively long time series evidence on the relation between mortgage equity withdrawals and consumer spending is inconclusive, with some studies pointing to substantial effects of mortgage equity withdrawal and others the opposite. I am quite skeptical about the relevance of this evidence because variations in national home values only became substantial after the year 2000.

Some economists argue on theoretical grounds that MEW should not change consumer spending, since consumption should be a function only of income (including expected future income), wealth, and the rate of interest. If so, the transformation of housing wealth into cash

should not affect consumption but should be used only to reduce debt or invest in financial assets. I'm not convinced for two reasons. First, as Mullbauer notes, individuals who are liquidity constrained will consume more in response to an increased opportunity to borrow. Second, consumers can regard the increased spending on home improvements and major consumer durables as a form of investment that will provide services for years to come even though the national income accounts classify these outlays as consumer spending.

The recently revised national income accounts show that personal saving fell sharply from 2.1 percent of disposable income in 2003 and 2004 to less than 0.5 percent in 2005 and 2006, a decline equal to about a \$160 billion annual rate. I believe that a substantial part of that decline and the relative increase in consumer spending was due to the concurrent rise in MEW that resulted from low mortgage interest rates and increasing home prices.

The potential implication of this for the future is clear. A decline in house prices and a rise in mortgage interest rates should shrink MEW and cause the household saving rate to rise to a more normal level. This is clearly good in the long term, permitting increased investment in plant and equipment and reducing our dependence on capital from abroad. But in the short run a rapid rise in the saving rate and a decline in consumer spending would mean less aggregate demand. Whether this would be big enough to push the economy into recession depends on the magnitude and speed of the adjustment in mortgage equity withdrawals, on the impact of the MEWs on consumer spending, and on the state of aggregate demand as this occurs.

The volume of mortgage refinancing has recently begun to decline and the level of revolving home equity loans has been declining since the beginning of the year. The household saving rate has also started to rise. We will have to wait to see the impact of the sharp reduction in available mortgage credit that occurred in recent weeks.

Possible Implications for Economic Policy

The three housing sector problems that I have discussed point to a potentially serious decline in aggregate demand and economic activity. What are the possible implications for current Federal Reserve policy?

It is widely agreed that neither the Federal Reserve nor the government should bail out individual borrowers or lenders whose past mistakes have created losses. Doing so would

simply encourage more reckless behavior in the future. But it is also widely agreed that it would be a mistake to permit a serious economic downturn just in order to punish those market participants.

But what should be done about the frozen credit markets and the possible insolvencies that could result from mortgage defaults? The Fed and other central banks have stressed their roles as lenders of last resort, providing liquidity to member banks against good collateral (although not collateral of the highest quality) at rates that exceed the federal funds rate. There are of course many important financial institutions – including the investment banks and large hedge funds – that do not have access to the Fed’s discount window. The Fed has encouraged the commercial banks to lend to them against suitable collateral with the ability to rediscount that collateral at the Federal Reserve.

It is not clear whether this will succeed, since much of the credit market problem reflects more than a lack of liquidity: a lack of trust, an inability to value securities, and a concern about counterparty risks. The inability of credit markets to function adequately will weaken the overall economy over the coming months. And even when the credit market crisis has passed, the wider credit spreads and increased risk aversion will be a damper on future economic activity.

Even with the best of policies to increase liquidity, future aggregate demand is likely to be depressed by weak housing construction, depressed consumer spending, and the impaired credit markets. Although lower interest rates cannot solve the specific problems facing credit markets, lower interest rates now would help by stimulating the demand for housing, autos and other consumer durables, by encouraging a more competitive dollar to stimulate increased net exports, by raising share prices that increased both business investment and consumer spending, and by freeing up spendable cash for homeowners with adjustable rate mortgages.

But the Fed also has a responsibility to focus on inflation. There now remains a significant risk of rising inflation because of slowing productivity growth (unit labor costs are up 4.5 percent from the second quarter of 2006 to the second quarter of 2007), the falling dollar, and higher food prices that have pushed market based consumer prices up at a 4.6 percent rate in the most recent quarter.) How should the Fed now balance these two goals?

We know that there is no long-run trade-off between price stability and achieving full

employment and growth. But how should policy makers deal with the short run relation between price stability and employment?

One view is that monetary policy should focus exclusively on achieving price stability because that is the best way to achieve full employment and maximum sustainable growth as rapidly as possible. If that view is correct, there is no reason to change current monetary policy. The existing 5.25 percent nominal federal funds rate is relatively tight in comparison to the historic average real fed funds rate of about two percent. The housing and credit market problems that I have discussed will simply reinforce this tight monetary policy and speed the decline in inflation.

But there is an alternative and more widely held view that the Federal Reserve should give explicit weight to unemployment or unused capacity in the short run as well as to inflation. That is the view that underlies all variants of the Taylor rule. If that view is accepted, there are two reasons for a major reduction now in the federal funds rate – possibly by as much as 100 basis points.

First, experience suggests that the dramatic decline in residential construction provides an early warning of a coming recession. The likelihood of a recession is increased by what is happening in credit markets and in mortgage borrowing. Most of these forces are inadequately captured by the formal macroeconomic models used by the Federal Reserve and other macro forecasters.

Second, even if all of the evidence does not add up to a high probability of an unacceptable decline in economic activity, the Fed could adopt the risk-based “decision theory” approach in responding to the current economic environment. If the triple threat from the housing sector materializes with full force, the economy could suffer a very serious downturn. A sharp reduction in the interest rate – in addition to a vigorous lender of last resort policy – would attenuate that very bad outcome.

But what if the outcome in the absence of a substantial rate cut would be more benign and yet the Fed nevertheless cuts the federal funds rate? The result would be a stronger economy with higher inflation than the Fed desires, an unwelcome outcome but one that might be judged to be the lesser of two evils. If that happens, the Fed would have to engineer a longer period of slower growth to bring the inflation rate back to its desired level. How well it would

succeed in doing this would depend on its ability to persuade the market that a risk-based approach in the current context is not an abrogation of its fundamental pursuit of price stability.

Cambridge, MA

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