

Credit and the Real Business Cycle

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I am delighted to be back in Buenos Aires and to participate in this important conference.

I was particularly pleased when Martin Redrado asked me to speak about the relation between credit and the real business cycle. Historically, credit contractions and expansions have been important drivers of the contractions and expansions of the real economy. But in the United States today we are facing a very strong pressure in the opposite direction, with developments in the real economy – and especially in the housing sector – having a powerful effect on credit conditions. The resulting two-way connection between credit and the real economy creates the risk of a mutually reinforcing negative spiral of economic activity in the United States and potentially in the global economy.

I will begin my remarks by commenting on the traditional channel linking credit conditions to the real economy. Although I will focus on the experience in the United States, I think my comments apply to other industrial countries as well. I will then turn to the very different process that is currently at work in the United States in which changes in the real economy have created serious problems for the credit markets. These problems raise a question about the appropriateness of the Federal Reserve's easy money policy in the early part of this decade and more generally about what has come to be called the "risk based" approach to monetary policy.

Monetary Tightening and Economic Cycles

The United States has had four recessions in the past three decades. Although the detailed conditions differed among them, a common feature has been that a tightening of monetary policy to prevent or reverse rising inflation preceded each recession. The Federal Reserve raised the rate of interest and that led to a decline in economic activity. A principal channel by which the higher interest rate reduced aggregate demand was by reducing mortgage lending and home construction. Other channels included a negative impact on equity prices (and therefore household wealth and the cost of capital) and a rise in the value of the dollar that reduced net exports.

When the central bank was confident that it had achieved its anti-inflationary goal, it eased monetary conditions, allowing the short-term interest rate to decline.

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This reversed the contractionary process, leading to increased housing construction, business investment, consumer spending, and net exports.

Since this process linking monetary adjustment and the business cycle is well known, I will not spend more time on this but will turn to the very different nature of the current situation in the United States and the way in which the real economy and the credit markets are contributing to our economic problems.

The Current Relation of U.S. Credit Conditions and the Real Economy

The United States is currently in the midst of a financial crisis and a general decline in economic activity. Virtually all of the key monthly indicators of economic activity are lower now (i.e., according to the official statistics for July 2008) than they were when the year began, including employment, industrial production, construction, real incomes, and consumer spending.

This downturn is different from the previous recessions. It was not caused by the Federal Reserve raising the real short-term “federal funds” interest rate to a high level in order to reduce inflation. As a result, the Federal Reserve’s policy this year of sharply reducing the short-term interest rate has not been successful in reversing the slowdown. In my judgment, monetary policy will continue to lack the ability to strengthen the economy because of the unusual conditions in the housing sector and the credit markets.

The current financial crisis and economic slowdown were caused by a spontaneous correction of the serious mispricing of all kinds of risks and by the collapse of the house price bubble that had developed in the first half of this decade. Until 2007, the yields on all types of risky assets were inappropriately low. Even investors who recognized this mispricing of risk continued to hold the overpriced risky assets because they were seeking yield in an environment of very low interest rates and because they expected that they would be able to unwind their position quickly when yields on risky assets began to rise and the prices of those assets began to fall, an expectation that turned out to be excessively optimistic.

The rise in the yield on risky assets began with sub-prime mortgages, i.e., the residential mortgage loans to individuals with weak earnings and poor credit ratings. As defaults on these sub-prime mortgages exceeded expectations, the prices of existing subprime mortgages in the secondary market and of the mortgage-backed securities based on those sub-prime mortgages fell substantially.

What started as a problem for houses with subprime mortgages has now spread to residential mortgages more generally as well as to other asset classes. This residential mortgage problem is contributing to the financial crisis and the financial crisis is reducing the credit supply needed to sustain economic activity.

Residential mortgage problems are important because mortgage backed securities and the derivatives based on those securities are the primary assets that are weakening financial institutions. The falling value of the mortgage-backed securities reduces the capital and the liquidity of banks and other financial institutions.

The uncertain value of the mortgage-backed securities and of the associated derivatives means that the financial institutions cannot have confidence in the liquidity or the solvency of potential counterparties or even in the value of their own capital. Without such confidence, credit will not flow and economic activity will be constrained. The collapse of the Bear Stearns investment bank was an extreme example of the way in which uncertainty about counterparty liquidity and solvency could cause a run on a financial institution.

The financial crisis is getting worse because of the downward spiral of house prices. During the most recent 12 months for which data are available, the average house price in the United States fell by 16 percent. House prices are down from their peak in mid-2006 by more than 20 percent. These price declines are unwinding a house price bubble that began in the early part of the decade and drove the level of house prices to some 60 percent above the long-term trend.

The rapid decline in house prices is being driven by the excess supply of unsold homes and the expectation that house prices will continue to decline. Since housing starts have fallen sharply – down about 40 percent from a year ago -- the excess supply of homes reflects not only construction but also the homes that are put on the market by banks that have foreclosed those properties because the homeowner had stopped making payments on his mortgage.

The number of such homes in which defaulting on the mortgage (i.e., the failure to make mortgage payments) has led to foreclosure of the property has risen dramatically over the past year and can be expected to go on rising. Some defaults occur because individuals have lost their job and cannot afford to make their monthly payments. Other homeowners have defaulted because the interest payments on their adjustable rate mortgages rose sharply when a temporary low initial interest rate expired.

But the most important cause of defaults and foreclosures is the increasing number of homes with negative equity, i.e., with substantial mortgage debt in excess of home values. Negative equity is significant because mortgages in the United States are generally “no recourse” loans. If a homeowner defaults, the terms of a “no recourse” mortgage allow creditors to take the house but prevent them from taking other property or taking part of income to make up any unpaid balance. Even in those states where mortgages are not “no recourse” loans, creditors generally do not pursue the assets or income of individuals who default.

As house prices decline, the number of negative equity mortgages will rise and the extent of the excess mortgage debt will increase. We cannot be sure about how much further house prices will fall. Experts say another 15 percent fall is required just to get the level of house prices back to the pre-bubble price path. But there is nothing to stop the decline at that point. Just as house prices rose by 60 percent above the sustainable path during the housing bubble, they could fall substantially below that sustainable path.

The growing gap between the mortgage debts and the house prices will continue to increase the rate of defaults. Many homeowners who can afford to make their mortgage payments will choose to default, move to rental housing, and wait to purchase a new home until some later year when house prices have declined further.

As homeowners with large negative equity default, the foreclosed homes contribute to the excess supply that drives prices down further. And the lower prices lead to more negative equity and therefore to more defaults and foreclosures. It is not clear what will stop this self-reinforcing process.

As I have already noted, declining house prices are the key to the financial crisis and to the outlook for the economy because mortgage backed securities are the primary assets that are driving down the capital and liquidity of financial institutions. Until house prices stabilize, the mortgage-backed securities cannot be valued with any confidence. Because the uncertain values of those securities reduce the willingness to supply credit, they are a major impediment to economic expansion.

The decline in the values of mortgage-backed securities has eroded the capital of financial institutions. They must either raise new capital or reduce the extent to which they have provided credit. The shortage of credit is therefore exacerbated by the need of financial institutions to deleverage. Since raising capital is difficult and costly, they are deleveraging by lending less.

The macroeconomic weakness in the United States now goes beyond the decreased supply of credit. Falling house prices reduce household wealth and therefore consumer spending. Falling employment lowers wage and salary incomes. The higher prices of food and energy depress real incomes further. And declining economic activity in the rest of the world is lowering the demand for U.S. exports.

The Federal Reserve has, in my judgment, responded to these conditions appropriately in 2008 by reducing the federal funds interest rate sharply and creating a variety of new credit facilities. The low interest rate helped by making the dollar more competitive but, other than that, monetary policy appears to have lost traction because of the condition of the housing sector and the dysfunctional state of the credit markets.

The U.S. Congress and the Administration enacted a \$100 billion tax rebate in an attempt to stimulate consumer spending. Those of us who supported this policy generally knew that past experience and economic theory both implied that such one-time fiscal transfers have little effect. We nevertheless hoped that this time might be different. Our support was, in the words of Samuel Johnson, a triumph of hope over experience.

In the end, our hopes were frustrated. The official national income account data for the second quarter are now available and they show that the rebates did very little to stimulate spending. More than 80 percent of the rebate dollars were saved or used to pay down debt. Very little was added to current spending.

So that is where the U.S. economy is now: in the middle of a financial crisis, with the economy sliding into recession, with monetary policy already at maximum easing, and with fiscal transfers impotent.

An economic expansion will have to wait until credit conditions improve. That in turn depends on what happens in the real economy and on the behavior of house prices in particular.

The Risk Based Approach to Monetary Policy

A major contributor to the housing price bubble was the very low interest rates that prevailed earlier in the decade. The Federal Reserve lowered the short-term “federal funds” interest rate to less than two percent in 2001 and promised that the rate would only be raised very slowly. This was a deliberate attempt to lower medium term interest rates on which mortgages interest rates are based. It succeeded in doing that and also encouraged mortgage lenders to offer very low “teaser” rates that would remain low for a period of years.

Many economists at the time noted that the Federal Reserve had depressed the federal funds interest rate to a level that is substantially less than a Taylor Rule calculation would imply. Although the Taylor Rule implied that the low rate of inflation at the time called for a low interest rate, it did not imply a rate as low as the Fed chose or a policy of keeping rates very low.

Alan Greenspan explained the rationale for this extremely low rate of interest in terms of what has come to be known as a Risk Based approach to monetary policy. This approach is essentially an application of the traditional statistical decision theory approach to decisions under uncertainty. Instead of focusing on the most likely situation or using expected values (as implied by the linear quadratic decision approach) the statistical decision theorist considers the different possible “states of nature” and the outcomes that would result from different policies under each of those states of nature. The different states of nature are weighted by the decision maker’s subjective probability and the optimal policy is the one that has the

highest expected payoff. This can be very different than the policy that has the highest payoff under the most likely state of nature or the expected state of nature.

Here is how that general theory translated into the choice of a super-low interest rate policy in the economic context at the beginning of the decade. At that time, there was a concern that the economy might slide into a recession combined with a negative inflation rate as had happened in Japan. With a negative inflation rate, even a zero nominal interest rate would imply a positive real interest rate. That positive real rate could depress activity and cause an even faster rate of deflation. Although this might be a very low probability condition, the adverse economic effect would be very large. Statistical decision theory – i.e., the risk based approach to monetary policy -- implied that it could be optimal to choose a very low federal funds interest rate to prevent that outcome even if doing so increased the risk of a higher rate of inflation.

While the higher rate of inflation would be an undesirable outcome, it could be seen as a less harmful outcome than the combination of recession and deflation because the Federal Reserve could always reduce the inflation by a higher nominal interest rate while it would be unable to reverse the combination of deflation and recession.

Economists can of course differ about the probability of deflation, about the costs of allowing inflation to rise, and about the damage that would occur if the feared combination of deflation and recession were to occur. While lower interest rates might be impotent when prices are declining, various forms of fiscal policy might have been capable of ending a recession under those circumstances. The debate about risk based monetary policy was too narrowly focused in treating monetary policy as the only macroeconomic instrument.

Nevertheless, the easy money policy derived from the risk-based approach to monetary policy may well have prevented a painful period of deflation. There was moreover no burst of high inflation as a result of the policy of sustained low interest rates. While it is impossible to know what would have happened with a less easy monetary policy, judged in terms of the traditional trade-off between recession and inflation it can be regarded as a success.

But in a wider sense this risk-based approach to monetary policy was too narrowly conceived. Experience has now taught us that the analysis was wrong to focus on the relative risks of inflation and recession in a Phillips curve framework that ignored the long-run effects of changing asset prices.

Low interest rates raise the value of assets in general and of housing assets in particular. The low interest rates in the early part of the decade reduced the monthly cost of any size mortgage. This increased the willingness of individuals to pay more for any given property. It also increased the willingness of banks to lend larger amounts to individuals based on a comparison of the individuals' incomes

and their monthly mortgage payments. The resulting increase in the demand for houses caused house prices to rise and that attracted more demand from prospective buyers who extrapolated the higher rate of increase of house prices.

The bubble in house prices may not have been a predictable consequence of the very easy monetary policy and the promise to keep rates exceptionally low. But it was certainly a risk that should have been taken into account in analyzing the risks of the low interest policy.

It is clear from the current experience that the adverse consequences of a housing bubble and its eventual bursting can be very severe. It would have been very much in the spirit of risk based policy, with its emphasis on low-probability high-damage outcomes, to consider this possibility of a bubble when deciding whether to drive interest rates to a very low level and promise to keep them there for several years.

This ex ante concern about the possibility of an asset price bubble is very different from the usual argument that it is difficult to know when prices are irrationally high and therefore difficult to shift monetary policy to stop a bubble in progress. Even if that is true, i.e., even if it is not possible to recognize a bubble until it bursts, a risk-based policy should take the possibility of such a bubble into account.

A monetary policy maker who believes that the central bank can recognize a bubble as it develops and can stop it by tight money or by regulatory policies can afford to take a greater risk of creating such a bubble. But a policy maker like Alan Greenspan, who has stressed that asset price bubbles are possible but cannot be recognized until they burst, should have been particularly cautious about an easy money policy that could lead to a bubble.

Thank you.