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Credit, Housing, Commodities, and the Economy[1]

Good morning. I'm delighted to be part of the Northern California Regional Financial Planning conference this year. I'd like to thank the organizers for inviting me and for giving me an opportunity to talk about the U.S. economy and the conduct of monetary policy to such a large and knowledgeable group of professionals. Most, if not all, of you have been first-hand witnesses to one of the most significant economic shocks in our memories—one that is seriously affecting the U.S. outlook. I mean, of course, the events that have been roiling U.S. and global financial markets since midsummer of last year and that have led to the current credit crunch.

In my assessment of the economy, I will also focus on two additional factors that are shaping the outlook—the downturn in housing markets and the unanticipated surge in food, oil, and other commodity prices. These developments have taken a toll on the U.S. economy, resulting in weak growth since late last year. To preview my discussion, I expect that the economy's performance will improve somewhat in the second half of the year. But I am also well aware that the risks surrounding my forecast are large because of uncertainty about how these three factors—the financial turmoil, the housing cycle, and commodity prices—will evolve. Before I begin, let me note, as usual, that these

[1] I am deeply indebted to staff in the Economic Research Department of the Federal Reserve Bank of San Francisco, and in particular to John Judd and Judith Goff, for their support in preparing these remarks and to Laurie Glapa for outstanding research assistance.

remarks reflect my own views and not necessarily those of my colleagues in the Federal Reserve System.

Financial Markets and the Credit Crunch

Let me turn first to the financial market turmoil. From a monetary policy perspective, one of its most important consequences is the serious credit crunch that has developed. Stories about the credit crunch are in the news every day, and they highlight how widespread its effects are. Students are finding it harder to obtain college loans. Households are more often receiving notice that their home equity lines have been capped. Companies report that it is more challenging to secure credit lines from their banks. Some municipal governments and nonprofits have experienced unexpected jumps in interest payments on their debt due to disruptions in their funding markets. Homeowners seeking jumbo mortgages face interest rates that have risen since last summer, even though both short- and long-term Treasury rates have declined substantially. And subprime mortgages are all but unavailable at any price.

How did such a situation come about? To my mind, it represents a rapid and disruptive unwinding of a bubble-like situation that had developed in credit markets over a number of years. At the time, many observers noted that the world appeared to be "awash in liquidity." The "bubble" was characterized by very low long-term real interest rates. Investors seemed willing to accept very modest compensation for the risks they were taking. The abundance of liquidity was reflected in a number of investment strategies. For example, a wave of leveraged buyouts was financed at low interest rates with exceptionally favorable terms. Substantial quantities of funds were also attracted into so-called “carry trades” involving exposure to significant exchange rate risk. And, most importantly, there was a rapid rise in lending on home mortgages in general, and importantly, in the subprime mortgage market, reflecting an exceptionally benign view of the underlying risks.

This benign view may well have been linked, in part, to rapid transformations taking place in our financial system. Securitization and financial engineering fundamentally changed financial markets in a relatively short period of time, appearing to make it possible to slice and dice and spread risk more effectively—indeed, it appeared that these innovations had made the usual terms of the risk-return tradeoff more favorable.[2] The surge in lending occurred as securitization promulgated the originate-to-distribute business model—that is, underlying loans were securitized and sold to investors. Notably, the main compensation of many participants in the securitization chain came in the form of upfront origination fees. Without the strong incentives to maintain underwriting standards that exist when originating institutions keep loans on their own books, the credit quality of many of the securitized loans deteriorated significantly. Subprime mortgages are a good example, as combined loan-to-value ratios and the percentage of low- or “no-doc” loans rose steadily through 2006. And, in any case, even subprime mortgages looked like a good bet, with house prices seeming to be on an ever-upward march.

Furthermore, with the economy booming, investors, including highly leveraged investment banks, hedge funds, and SIVs (structured investment vehicles)—the so-called “shadow banking sector”—were actively seeking projects to finance and willing to increase their leverage. With interest rates so low, they were motivated to reach for

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[2] Rajan (2008)

higher yields on these projects.[3] Many investors found reassurance in getting involved in many of these complex securities by relying on the evaluations given by rating agencies. Unfortunately, these ratings turned out not to be very reliable.

So long as house prices kept soaring, as they did until a couple of years ago, these credit problems did not show up. But once house prices flattened out and then began to fall, it became clear that delinquencies and foreclosures on subprime and other mortgages would be far higher than had been anticipated. This arguably was the trigger of a far broader reappraisal of credit market risks and attitudes.

Clearly, the market discipline that "sophisticated investors" are supposed to provide was lacking. As we saw, even some of the largest, most sophisticated financial institutions inadequately incorporated into their risk-management models the full range of hazards entailed in the originate-to-distribute business and the liquidity risks that would result from a drying up of short-term funding. Also lacking were reliable ratings from the agencies. But financial supervisors and regulators, including the Federal Reserve, were behind the curve, as well. We missed some of the risky developments that were unfolding. Our consumer regulations were unfortunately insufficient to protect households from some egregious and unfair lending practices. And we took too long to ramp up some supervisory policies in the face of mounting risks. On a broader level, the situation exposed holes in the existing regulatory framework for financial services, which allowed some risky activities to flourish, hurting both consumers and financial stability. Significantly, the Fed was compelled to open the discount window to investment banks because of the outsized risks some took and their significant interconnectedness with the

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[3] Adrian and Shin (2008)

financial market infrastructure. Investment banks thus were able to operate with less capital and supervision than such access otherwise entails.

Now that I've taken a broad view of the crisis, let me go into some of the more specific developments that influence my views on the economy and monetary policy. Given the importance of the subprime market in initiating the crisis and its relevance to the broader housing market, I would like to spend a few minutes at the outset reviewing what happened there before returning to the main "story line" concerning the financial turmoil. This market took off after 2001 and, by one estimate, in late 2007 there were over 7 million subprime mortgages outstanding, or about 14 percent of the overall mortgage market. Through late 2005, things seemed to be going well, with subprime delinquencies remarkably low in most areas of the country. But now, close to 20 percent of subprime mortgages are delinquent or in foreclosure nationwide.

Research suggests that it was not so much interest rate resets that triggered the rise in subprime problems, as many expected. Indeed, reductions in short-term interest rates since the onset of the crisis should diminish the danger of foreclosures from such resets going forward. Rather, the single most important determinant of the level and change in subprime delinquency rates has been the pace of house price changes.[4]

The link between house prices and delinquency rates is not surprising. Although delinquencies and foreclosures are often precipitated by life crises, such as illness, divorce, or the loss of a job, the amount of equity in the home affects the ability or willingness of a homeowner to keep current on their mortgage payments when these events occur. In a market in which house prices have been stagnant or declining, a

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[4] Doms, Furlong, and Krainer (2007a, b), Demyanyk and van Hemert (2008), Gerardi, Shapiro, and Willen (2007), and FRBSF *2007 Annual Report* (2008).

borrower with a recent mortgage secured with little or no down payment does not have the flexibility to refinance or to tap into the equity in the house to weather a life event. Even some borrowers who might be able to afford their loans may be unwilling to make the payments if house prices are expected to remain low or decline putting their mortgages underwater. Declining house prices have also affected prime borrowers. While default rates on prime mortgages are lower than for adjustable-rate subprime loans, delinquency rates among all categories are highly correlated with house price declines across regions of the country.

Rising delinquencies on subprime mortgages triggered huge disruptions in the markets for asset-backed securities (ABS) and these problems are central to the emergence of the credit crunch. Because most subprime mortgages were packaged into mortgage backed securities (MBS), and into the more complex collections called collateralized debt obligations, or CDOs, surging credit losses, and prospects for further losses, meant lower values for all of the securities that were based on them. Losses related to the subprime market even inflicted collateral damage on a completely unrelated market—the market for municipal bonds. Some companies that insure these bonds had exposure to the subprime market as well, precipitating downgrades in their credit ratings or the potential for such downgrades in the future.

The problems afflicting mortgage-related ABS spread to some other classes of ABS as well. Many types of underlying loans, including credit card, commercial real estate, auto, business and student loans, had been packaged into such securities. The contagion to these sectors occurred for a variety of reasons, including a general flight to safety by now-risk-averse investors; the recognition that similar, although less pronounced, declines in underwriting standards may have occurred in some other credit areas such as commercial real estate and leveraged lending; widespread concern about the validity of the evaluations of securities that had been issued by the rating agencies; and a drying up of short-term funding for a set of vehicles and institutions that were significant investors in these securities.

Losses from holding asset-backed securities have been suffered by a broad range of investors. As it turns out though, a large share of the exposure resided with commercial banks, with nonbank subsidiaries of financial holding companies, and with the highly leveraged entities in the "shadow banking sector." Write-downs on ABS reduced the equity cushions in all of these firms and increased their leverage at a time when the growing risks in the financial markets made them desire less leverage, not more. Some commercial banks suffered additionally because they had an unanticipated buildup of mortgages and loans related to leveraged buyouts on their balance sheets. Because they were active securitizers themselves, these loans were in the pipeline for securitization but could not be sold. In addition, when SIVs they had sponsored were in danger of failing, some banks decided to rescue them by taking the underlying assets back onto their own balance sheets. All of these factors raised banks' own leverage levels and diminished their capital cushions. Many banks are raising additional capital, but most are also tightening credit terms and restricting availability of loans to many households and businesses. For example, the Federal Reserve's Senior Loan Officers Survey documents a broad-based tightening in terms and reduction in the availability of credit since last summer.

At the same time that availability of bank funding has tightened, new issuance of asset-backed securities has all but disappeared as a viable funding option for several types of borrowing. In particular, the markets for securities backed by private-label mortgages, commercial mortgages, and leveraged loans have all become quite illiquid as a consequence of the turmoil. As leveraged institutions sought to strengthen their balance sheets and, in some cases, meet margin calls, by selling ABS, asset prices declined, exacerbating losses and escalating the market pressures in a vicious cycle, making it almost impossible, in some cases, to determine appropriate prices for the securities.

Illiquidity and higher risk premia have also afflicted the money markets that serve as sources of short-term funding for banks, a further factor reducing their willingness to lend. Banks are accustomed to borrowing in the term interbank markets from one another to manage liquidity. However, many banks that normally borrow and lend to each other, have become reluctant to lend. This presumably reflects recognition of the need to preserve their own liquidity to meet unexpected credit demands and greater uncertainty about the creditworthiness of counterparties.

Even as we move beyond those portions of the credit markets dominated by bank lending and loan securitization, we still see evidence of tighter credit conditions. For example, in the corporate bond market, which is still functioning fairly well, spreads facing all borrowers have risen. Riskier borrowers, issuing low-grade corporate bonds, face higher rates even though a worldwide “flight to safety,” coupled with an easing of monetary policy by the Fed, has contributed to a sharp decline in interest rates on Treasury securities since last June. The increase in spreads presumably reflects both higher risk aversion among investors and heightened perceptions of the possible downside risks to firms that would result from a weaker economy.

At the end of March, the credit market stresses I have described actually escalated to the point where they posed the risk of a systemic meltdown. In particular, the Bear Stearns episode showed how concerns about credit quality and solvency for an intermediary can devolve into liquidity problems. The fear that Bear Stearns would be unable to meet its obligations to its creditors triggered a sudden withdrawal of credit—as in an old- fashioned bank run. Of course, the perceived inability of one institution to meet its obligations is likely to cast doubt on the ability of others to meet theirs, triggering chains of distress and systemic risk.

The Federal Reserve was created precisely to stem such systemic risks by acting as a lender of last resort, although not since the Great Depression has it acted to accomplish it by lending directly through its discount window to an entity other than a depository institution. Had the Fed not intervened, however, Bear Stearns would have been unable to meet the demands of the counterparties in its repurchase agreements and thus intended to file for bankruptcy. Doing so might well have led to widespread fears in the financial markets, with declining prices for asset-backed securities triggering margin calls, forced selling pushing prices down further, and mark-to-market losses triggering reductions in capital and escalating problems in other highly leveraged institutions. The Fed's recent decision to set up a facility to provide credit to other primary dealers reflects the potential of this important group of institutions to create systemic risk with unacceptable consequences for the economy as a whole.

In addition to the actions with respect to Bear Stearns and the Primary Dealer Credit Facility, the Fed has responded in a number of ways to improve and protect market liquidity. We've lowered the spread of the discount rate above the federal funds rate from 100 to 25 basis points; created a new auction facility to make term loans to banks based on a broader range of collateral (the Term Auction Facility); set up another facility to lend Treasury securities in exchange for certain asset-backed securities (the Term Securities Lending Facility); engaged in term repurchase agreements with primary dealers; and approved swaps with the ECB and Swiss National Bank to enable them to increase dollar liquidity to institutions in their markets.

These liquidity-enhancing actions are different from standard monetary policy because they do not involve changes in the federal funds rate—the Fed's monetary policy target—and, unlike open market operations, they do not entail any change in the size of the Federal Reserve's balance sheet. Instead, they involve a change in the composition of the Fed's roughly $800 billion balance sheet away from outright ownership of U.S. Treasury securities and toward, for example, both short-term and term loans backed by a wider range of collateral to both depository institutions and primary dealers.

I believe that the Fed's liquidity operations, combined with its 325-basis-point cut in the federal funds rate—a substantial easing of monetary policy—are having a beneficial effect on financial markets. Although overall financial conditions are still far from normal, there are some rays of hope that the strains may be easing a bit. Over the past couple of months, for example, spreads in the markets for conventional GSE-sponsored securitized mortgages and in corporate borrowing markets have declined. Moreover, credit default swap spreads on many exposed financial institutions, a measure of their perceived chance of default, are down substantially. Treasury rates have moved up, suggesting reduced aversion to risk. And the major stock indexes have regained some ground.

Housing

Now let me turn to the second of the three main factors behind the current economic weakness—namely, the housing cycle. I have mentioned that earlier in this decade when financial markets were "awash in liquidity," bubble-like conditions emerged in many areas of the economy, including housing. During this period, housing construction was very strong and housing prices soared. In fact, the ratio of house prices to rents—a kind of price-dividend ratio for housing—reached historical highs by early 2006, suggesting that house prices might be well above those that could be justified by fundamentals.

Since then, housing markets have "hit the skids." In inflation-adjusted terms, residential construction fell by 13 percent in 2006 and by 14 percent in the first half of last year. Of course, once the financial shock hit last summer, things got even worse, with real residential construction dropping at a 24 percent rate on average since then. And, indicators of conditions in housing markets are pointing lower for the future. Housing starts and permits as well as sales are trending down, and inventories of unsold homes remain at very high levels. These inventories will need to be worked off before construction can begin to rebound.

I've already discussed the precipitous fall in house prices nationally, so it's striking to note that, even with these declines, the ratio of house prices to rents remains quite high by historical standards. That, of course, suggests that further price declines may be needed to bring housing markets into balance. This perspective is reinforced by futures markets for house prices, which expect further declines in a number of metropolitan areas this year. In particular, the Case-Shiller composite index for home prices shows a 15 to 20 percent year-over-year decline in the second half of this year.

The bottom line is that construction spending and house prices seem likely to continue to decline well into 2009.

Commodity Prices

The behavior of commodity prices is the final of the three factors that lie behind our economic troubles. Prices for many commodities, not only crude oil, but also many metals and foods, have risen sharply in recent years. On the demand side, pressure is coming from several quarters. World real GDP growth has been exceptionally robust in recent years, and the strength of demand has been particularly notable in the large emerging economies of China and India. In addition, biofuel production has added to demand for some food commodities, like corn, and this has shifted demands to other foods, raising their prices as well. Finally, some commentators have argued that commodity prices have been pushed up by investors shifting demands to commodities in the face of the current financial turmoil as debt and equity investments appear much riskier. However, if this factor were playing a significant role, I would expect to see big increases in inventories of commodities as investors were expecting to make profits on rising prices. So far, I have not seen the evidence that this is occurring.

Normally, commodity price increases are transitory, in part because they elicit a strong increase in supply that reverses the upward pressure on prices. But today, especially for oil, supplies are increasingly coming from unconventional and more expensive sources, so the supply responses tend to be smaller and to have longer lags. In the case of food, government policies in the U.S. that have stimulated the production of biofuels promise to maintain tight market conditions. Indeed, futures markets and some forecasts—for example, the IMF World Economic Outlook—expect many commodity prices to remain at around their current high levels rather than reverse course.

Outlook for the economy

These three factors—the credit crunch, the deflating housing bubble, and the rising price of commodities—have combined to weigh heavily on demand by both consumers and businesses. Let me start with consumer spending, which is the largest sector of the economy. National surveys show that consumer sentiment has plummeted, an indication of the many hurdles households face. Consumer spending slowed in the first quarter to only 1 percent growth from 2½ percent last year. Falling house prices have reduced household spending by lowering total wealth and the value of mortgage equity. In addition, consumers face constraints due to declines in the stock market and tighter lending terms at depository institutions. The rise in delinquency rates across the spectrum of consumer loans is strongly indicative of the growing strains on households. And, the rise in the prices of energy, food, and other commodity prices have "taxed" the disposable incomes of households and weighed on consumer spending. Yet another negative factor is that labor markets have weakened. In recent months, growth in nonfarm payroll employment slowed sharply, actually falling by 260,000 jobs over the past four months. Job loss will have a negative impact on the disposable income available to households and therefore will provide an additional restraint on consumer spending.

As for business investment in equipment and software, this category registered a decline in the first quarter following years of strong growth, and it would not be surprising to see this weakness continue into next year. Nonresidential investment also dropped in the first quarter and is likely to face more problems as the year progresses since the securitized finance markets used to finance these expenditures have all but dried up.

Fortunately, there are some countervailing factors helping to mitigate the substantial drags on the U.S. economy. U.S. exports have been strong, as foreign real GDP has advanced robustly over the past few years and as the falling dollar has made U.S. goods more competitive in global markets. I expect our net exports to continue to make a positive contribution to U.S. growth. However, this result is not assured, as some countries—especially in Europe—are suffering from the turmoil in financial markets, and the sluggishness in the U.S. economy is likely to have a dampening effect on many economies abroad.

Economic policies in this country are also likely to provide a boost to growth. As I have mentioned, the FOMC has eased the stance of monetary policy substantially in the past six months, and I would expect these actions to contribute most strongly to growth in the second half of this year. Moreover, the fiscal stimulus package signed into law recently is well timed, and I am hopeful that this action will have a substantial stimulatory effect. The rebates to households in 2008 will total more than $100 billion, with more than half of that amount set for distribution in May. Of course, the effects of the program on GDP will depend on the fraction of the money that is spent. In this regard, there is reason for optimism. First, the fact that we are in the midst of a credit crunch means that a higher portion of the population is credit constrained than usual, and this means that more of the rebates are likely to be spent. Second, the design of the program puts emphasis on channeling more of the money to lower-income households who are more likely to be credit constrained in any event. The main effects of the program are likely to hit in the current and next quarters, and they could be substantial.

This brings me to my bottom line for the outlook. The economy slowed starting in the fourth quarter. With stimulus from monetary and fiscal policy, economic performance seems likely to improve later this year. With the unemployment rate currently at 5 percent, it is a little above my estimate of its sustainable level, and the sluggish performance I expect this year is likely to push unemployment up further.

Forecasting is always an uncertain business. But I want to emphasize that we are facing a high degree of uncertainty at the present time. One only has to look at the latest Blue Chip forecasts to see that point. The range between the highest and lowest forecasts for real GDP growth is among the largest on record. The ten most optimistic forecasters are predicting over 2½ percentage points faster growth over the next four quarters than the ten most pessimistic ones.

Outlook for inflation

Now let me turn to inflation. Much of the recent data have been disappointing. Over the past twelve months, the personal consumption expenditures (PCE) price index rose 3.2 percent, up from 2.5 percent over the prior year. An important reason for these disappointing numbers, of course, is the rise in commodity prices that I have discussed. Some of this increase has probably also passed through to core PCE price inflation, which excludes food and energy. This measure has averaged 2.1 percent over the past twelve months, and it is slightly above the range that I consider consistent with price stability.

Under present circumstances, judging future changes in commodity prices is obviously an important part of any inflation forecast. As I noted, future markets generally are expecting these prices to flatten out and remain at around today's very high levels. If this happens, then the effects of commodity prices on inflation will dissipate. In order to continue to put upward pressure on inflation—which, after all, is the *rate of change* of prices—commodity prices would have to do more than remain at today's high levels. They would need to keep on rising.

While this seems unlikely based on experience in recent decades, we can't rule out this possibility. Futures markets have been expecting a leveling out of most commodity prices for several years now, and they keep being surprised by ongoing increases. As I mentioned before, in part, this could reflect growing supply limitations on some commodities, especially oil. However, there also is the possibility that commodity prices could fall in the future as the economic weakness in the U.S. and slowing in Europe could spread to the rest of the world, reining in demand for commodities. I mentioned before that there is an unusually wide spread in Blue Chip forecasts for real GDP growth—well, not surprisingly, the dispersion for inflation forecasts is also unusually large at the present time, perhaps reflecting these divergent possibilities.

Even if the direct influences of commodity prices on inflation eventually dissipate, they could still cause trouble. Some argue that before this happens, higher inflation could become built into inflation expectations and become self-perpetuating. In other words, some fear that the specter of stagflation may rear its ugly head as it did in the 1970s and early 1980s. Stagflation is thought to arise from a cycle of wage and price increases—a wage-price spiral—initiated by a shock such as rising commodity prices—and perpetuated by poor monetary policy credibility and unanchored inflation expectations. In the 1970s and early 1980s, the wage-price spiral was spun from the pass-through of rising food and energy prices to inflation, which was in turn passed along to wages and, then again, through to final goods prices. Fueling the movement were expectations that monetary policy would allow inflation to continue to rise for the foreseeable future.

I see little reason to believe that we have entered, or are about to enter, such a period of stagflation. For one thing, although current data on growth and inflation have departed from desirable levels, matters looked far worse 30 years ago than they do now.

For another, there is no evidence that wages have started to spiral up, as broad measures of compensation have expanded quite moderately over the past year. Moreover, productivity growth has been fairly robust, and, after incorporating its effects, unit labor costs were up by only ¼ of 1 percent over the past year. In addition, the slack in labor and product markets stemming from the weakening in economic activity that seems likely should put somewhat greater downward pressure on inflation going forward. Therefore, my forecast of the most likely outcome over the next couple of years is that total and core inflation will moderate from present levels.

The Federal Reserve cannot, however, be complacent about inflation. Some survey measures of long-run inflation expectations have inched up, and measures of inflation compensation derived from the differential between nominal and real Treasury yields are slightly higher, too. While none of these measures are perfect indicators of inflation expectations, recent movements highlight the risk that our attempts to deal with problems in the real economy could lead to higher inflation expectations and an erosion of our credibility.

Policy

Let me now turn to monetary policy. As I've just indicated, core inflation remains on the high side of where I would like it to be. At the same time, activity is weak across most sectors of the economy, as the housing downturn, the escalation of commodity prices, and the ongoing financial shock are weighing on consumption spending, business capital investment, and employment.

The FOMC has responded to these conditions by easing monetary policy substantially since September, cutting the federal funds rate by 3¼ percentage points to 2 percent. With core consumer inflation running at about the same rate, the real funds rate now stands at an accommodative level of around zero. These cuts in the target rate, along with the actions to foster greater liquidity in financial markets, have mitigated the worst effects of the credit crunch. But they have not resolved it. Indeed, my sense is that the process of resolution will unfold only gradually.

Under these circumstances, I consider the current level of monetary accommodation to be appropriate. That, together with the fiscal package, should be sufficient to promote a step up to moderate economic growth later this year. Likewise, I would expect that inflation will moderate in coming quarters, as more slack in labor and product markets emerges and as commodity prices level off. Of course, we will continue to monitor developments and act as needed to fulfill our mandate for sustainable economic growth and price stability.

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