

THE GLOBAL FINANCIAL CRISIS

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Financial crises have been pervasive for many years. Bordo and others (2001) find that in recent decades, their frequency has doubled that of the Bretton Woods period (1945–71) and the gold standard era (1880–1993), becoming comparable only to the period during the Great Depression. Nevertheless, the financial crisis that started in the summer of 2007 came as a great surprise to most people. What initially seemed like difficulties in the U.S. subprime mortgage market rapidly escalated, spilling over into financial markets and then the real economy. The crisis changed the financial landscape worldwide and its full costs are yet to be evaluated.

The purpose of this paper is to consider the causes and consequences of the 2007 crisis and how financial system institutions and regulations should be reformed. Despite its severity and its far-ranging effects, the 2007 crisis is similar to past crises in many dimensions. In a recent series of papers, Reinhart and Rogoff (2008a, 2008b, 2009) document the effects of banking crises using an extensive data set for high- and middle-to-low-income countries. They find that systemic banking crises are typically preceded by credit booms and asset price bubbles. This is consistent with Herring and Wachter (2003) who show that many financial crises are the result of bubbles in real estate markets. In addition, Reinhart and Rogoff find that crises result, on average, in a 35 percent real drop in housing prices, spread over a period of six years. Equity prices fall 55 percent over three and a half years. Output falls by 9 percent over two years, while unemployment rises

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7 percent over a period of four years. Central government debt rises 86 percent over its pre-crisis level. Reinhart and Rogoff stress that major episodes are sufficiently far apart that policymakers and investors typically believe that “this time is different,” and they warn that the global nature of the 2007 crisis will make it far more difficult for many countries to grow their way out.

A thorough overview of the events preceding and during the 2007 financial crisis is provided in Adrian and Shin (2010), Brunnermeier (2009), Greenlaw and others (2008), and Taylor (2008). Its seeds can be traced to low interest rate policies adopted by the Federal Reserve and other central banks, after the collapse of the technology stock bubble. In addition, the appetite of Asian central banks for (debt) securities contributed to lax credit. These factors helped fuel a dramatic increase in house prices in the United States and several other countries such as Spain, Ireland, and the United Kingdom. In 2006, this bubble peaked in the United States and house prices there and elsewhere started to fall. Mayer, Pence, and Sherlund (2009) and Nadauld and Sherlund (2008) provide excellent accounts of developments in the housing market prior to the crisis.

The decline in house prices led to a fall in the prices of securitized subprime mortgages, affecting financial markets worldwide. In August 2007, interbank markets, particularly for terms longer than a few days, experienced considerable pressures and central banks were forced to inject massive liquidity. Conditions in collateralized markets also changed significantly. Haircuts increased and it became more difficult to borrow against low quality collateral. The Federal Reserve and other central banks introduced a wide range of measures to improve the functioning of money markets. During the fourth quarter of 2007, the prices of subprime securitizations continued to decline and many financial institutions became strained. In March 2008, the Federal Reserve bailed out Bear Stearns through an arranged merger with J.P. Morgan. Public funds and guarantees were required to induce J.P. Morgan to engage in the transaction.

Although the financial system and banks in particular came under tremendous pressure during this time, the real economy was not much affected. All that changed in September 2008, when Lehman’s demise forced markets to re-assess risk. While Lehman’s bankruptcy induced substantial losses to several counterparties, its more disruptive consequence was the signal it sent to the international markets. Reassessing risks previously overlooked, investors withdrew from the markets and liquidity dried up.

In the months that followed and the first quarter of 2009, economic activity in the United States and many other countries plunged. Unemployment rose dramatically as a result in some economies. The general consensus is that the 2007 crisis was the worst since the Great Depression.

1. WHAT CAUSED THE CRISIS?

From August 2007 until September 2008, there was fairly wide agreement that poor incentives in the U.S. mortgage industry had caused the problem. Traditionally, banks would raise funds, screen borrowers, and then lend money to those approved. If the borrowers defaulted, the banks would bear the losses. This system provided good incentives for banks to carefully assess the creditworthiness of borrowers. Over time, that process changed and incentives were altered. Instead of originating mortgages and holding them to maturity, brokers and also some banks started originating mortgages and selling them to securitize. That led to a new process called the “originate-and-distribute model.” In this new model, the originators, either brokers or banks, were not affected by borrowers’ defaults, as they were selling the mortgages before maturity. Moreover, they had incentives to originate and sell as many mortgages as possible, as they were paid based on the number of mortgages that they approved, rather than on their performance.

The second stage in the process of this new originate-and-distribute mortgage system was securitization. The securitizing entities, such as investment banks, would pool a whole set of mortgages together from across the country, so that they would be well diversified. Then they would tranche those pools to spread the risk differentially. The buyers of the most junior tranche would be allocated the first default losses. Then, as more losses accumulated, these would be allocated to the next most senior tranche, and so on up the seniority chain. The most senior tranches would bear losses only very rarely, so they were regarded as fairly risk-free and rated triple-A. More junior tranches would have lower ratings.

Initially, securitizing institutions would hold the most junior tranches to maintain the right incentives along the securitization chain. However, at some point the junior tranches also started to be sold off, thus breaking up the incentive mechanism of the securitization process. As shown empirically by Purnanandam (2009), mortgages that originated in the new originate-and-distribute model

were of significantly lower quality than those from the traditional system, where mortgages were held by originators until maturity.

Another important incentive issue concerned the rating agencies. Many argue that as rating agencies started to receive a large proportion of their income from rating securitized products, they lost objectivity and started giving ratings that weren't justified.

To sum up, according to the mortgage incentive view of the crisis, the whole procedure for checking the quality of borrowers and the mortgages underlying securitizations broke down, triggering the 2007 crisis. In line with this, the solution to stop the crisis and avoid it occurring again would be to regulate the mortgage industry and restore the appropriate incentive mechanisms.

This seemed to have been the view of both the Federal Reserve Bank and the U.S. Treasury at the start of the 2007 crisis. However, the deepening of the crisis and the dramatic collapse in the global real economy following the default of Lehman Brothers made this mortgage view less plausible.

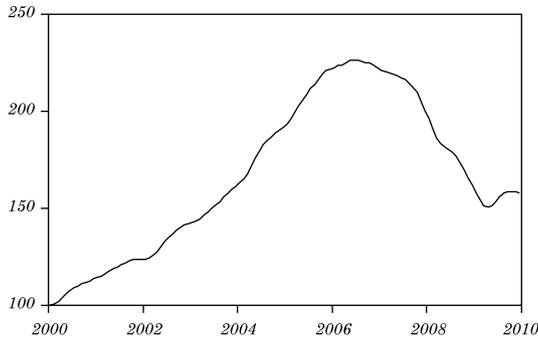
The economies in many countries in Asia and in Europe were drastically affected, even though their banks had very little exposure to U.S. securitizations and remained strong. In Japan, for example, GDP fell by around 4 percent in the first quarter of 2009. Drops in industrial production and GDP, although less severe, occurred all over the world and the global economy began to gradually seize up. As this happened, it became much more difficult to believe that an incentive problem in the U.S. mortgage industry had caused all this.

2. THE REAL ESTATE BUBBLE

We argue that the basic problem that caused the 2007 crisis was a huge bubble in real estate in the United States and several other countries, among them Spain, Ireland, and the United Kingdom. The crisis started with the bubble bursting and caused problems in the securitized mortgage market and the real economy. The magnitude of the bubble is illustrated in figure 1, which shows the dramatic increase in house prices in the early 2000s and their fall since July 2006.

We argue that there were two main causes for the bubble. The most important was the Federal Reserve's low interest rate policy, maintained since 2003. It was originally motivated by the collapse of the tech bubble in 2000 and the 9/11 terrorist attacks in 2001. Interest rates were cut to the very low level of 1 percent at a time when housing

Figure 1. The Case-Shiller Ten-City Composite Index



Source: The S&P/Case-Shiller website.

prices were still rising at significantly more than the inflation rate of 3 percent. In 2003, the year-on-year changes in the Case-Shiller 10-City Composite Index rose from 12.1 percent to 15.3 percent. This created an incentive for people to buy houses, as they could borrow at 1 percent and buy assets whose value was growing much faster.

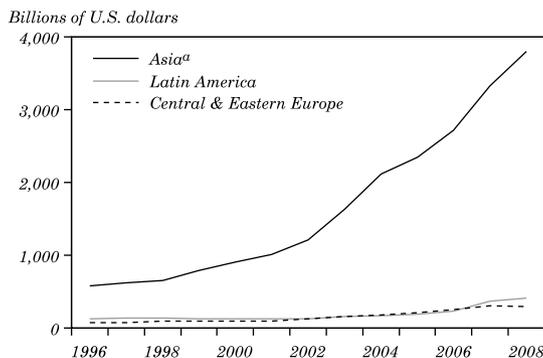
Several other aspects contributed to high demand for houses. These included tax advantages (being able to deduct interest on mortgages, compared to no deductibility of rent payments) and policies to encourage poor people to buy houses. All these factors created huge demand and led to a substantial increase in housing prices in the United States. Outside the United States, some European countries, such as Spain and Ireland, were also experiencing large property bubbles. Here, the ECB policy interest rate was low in relative rather than absolute terms.

The second important element that triggered the bubble in the United States and elsewhere was global imbalances. These started with the Asian Crisis of 1997, when many solid Asian economies fell into serious difficulties. For example, South Korea experienced problems because firms and banks had committed the “original sin” of borrowing too much in foreign currency. They then turned to the International Monetary Fund (IMF) to see them through these difficult times. In exchange for providing financial assistance, the IMF required South Korea to raise interest rates and to cut government spending. That is the exact opposite of what the United States and Europe have done when faced with a deep crisis.

One potential reason for this harsh imposition lies in the governance structure of the IMF. The IMF is a European- and U.S.-dominated institution. So far, it has always been headed by a European, while the World Bank has always been led by an American. That was part of how responsibilities were carved up in the negotiations leading to the Bretton Woods agreement at the end of World War II (even though it is not explicitly stated anywhere in the treaty). Asian countries were not represented at the highest levels, as they were less important, economically and politically, at that time. As they did not have much weight in the governance process, there was also no effective mechanism for the Asian countries to protest against the harsh policies imposed by the IMF during the Asian crisis.

The Asian countries responded by becoming economically independent, to avoid having to rely on the IMF in the future. To do so, they accumulated trillions of dollars' worth of assets. Figure 2 shows this accumulation of reserves by China, Hong Kong, Japan, Singapore, South Korea, and Taiwan. This is the line marked Asia. In contrast, Latin American and Central and Eastern European countries did not increase their reserves during this period.

Figure 2. Foreign Exchange Reserves in Different Regions



Source: IMF website.

a. Asia is the six East Asian countries China, Hong Kong, Japan, Singapore, South Korea, and Taiwan – province of China.

The Asian countries invested these huge reserves mostly in debt instruments, as they found it difficult to buy equities. One example occurred when U.S. authorities blocked the Chinese state oil company's acquisition of the American producer Unocal, on the

grounds that Unocal was a strategic firm. As a consequence, Asian countries turned to debt instruments, in particular Treasuries, Fannie and Freddie mortgage-backed securities, and many other debt securities. A similar pattern of debt provision occurred in other countries, such as Spain and Ireland. This huge demand for debt and the consequent huge supply of debt helped to drive down lending standards, to ensure that it was all taken up.

Other factors contributed to the bubble's emergence. One of the most important was the yen carry trade, which allowed investors to borrow in Japan at zero interest rates and invest somewhere else, such as Australia and New Zealand, at much higher rates. This led to a large outflow of funds from Japan and probably contributed to the property bubble in Australia, for example, although the precise magnitude of the yen carry trade is not known.

3. THE EFFECTS ON THE REAL ECONOMY

The collapse of the bubble drove the whole global economy into a downward trend. One potential reason for this is that for about a decade, people made the wrong decisions, based on the assumption that asset prices would keep going up. In the United States, the aggregate saving rate fell to zero. Owning houses or stocks was much better than saving. Many people even borrowed to finance consumption. The leverage ratios of households, firms, and institutions all rose. When asset values fell, people found they were overleveraged and had saved too little. Then they had to start saving to pay down debt and build up their assets.

All this caused a huge uncertainty about the value of stocks, properties, and inputs to the production process, so that it was very difficult for people and firms to take decisions. For example, stock prices have been incredibly volatile in both directions. In January and February 2009, they were falling. There was a dramatic drop, with the S&P 500 index going to 686 by early March 2009. Then the price soared upward by about 30 percent in the following weeks. It became very difficult for people to estimate the long-run value of their stock.

Another example of price volatility is commodities. In the third quarter of 2008, oil was trading at 147 dollars a barrel, but the price plunged to 40 in a short space of time. Similarly, exchange rates have also been volatile. In the third quarter of 2008, the pound sterling rose above 2 dollars, then fell to \$1.40. The euro stood at \$1.60 then, but fell to about \$1.25 before rising again.

To sum up, the huge uncertainty about price movements froze economic decisions of people as well as firms, chilling the global economy. Sales of consumer durables, such as cars, and investment goods, such as machine tools, have stalled since 2008, and only now seem to be recovering, although slowly. Bloom (2009) provides a formal analysis of how a macro uncertainty shock leads to a rapid drop in aggregate outcomes, as it induces firms to temporarily pause their investments.

4. THE EFFECTS ON THE FINANCIAL SYSTEM

In addition to price uncertainty, a major cause of the economic difficulties during the crisis was major shortcomings in the financial system. The crisis started in the third quarter of 2007, with the meltdown in subprime mortgages, as discussed above. This caused trouble, because these mortgages were held by debt-based institutions that were, like investment banks or structured investment vehicles (SIVs), financed to a large extent by rolling over short-term debt. When prices fell, lenders didn't know whether they were going to be paid back and thus stopped rolling over their debt.

The problems started in securitized subprime mortgages, but then spread to many other parts of the financial system, because of the interaction with the real economy. The credit risk problem led to a flight to quality, with many people wanting to buy government securities. Central banks tried to deal with the greater desire for high-grade securities, allowing financial institutions to swap a wide range of securities for Treasuries. As a result, the Federal Reserve's balance sheet expanded from \$800-\$900 billion before the start of the crisis to \$2,000-\$2,500 billion afterward.

In short, there were two basic problems. The first was that people and firms didn't know the prices that should be guiding economic decisions. The second problem was that the financial system had enormous problems, and the two interacted.

5. WHY DID THE FINANCIAL SYSTEM PERFORM SO POORLY?

The financial services industry is the most regulated sector in practically all economies. In the United States, the Federal Reserve, the Office of the Comptroller of the Currency (OCC), the Securities and Exchange Commission (SEC), the Federal Deposit Insurance Corporation (FDIC), and a number of other regulatory bodies are

responsible for regulating the financial sector. However, despite the pervasive regulation, the 2007 crisis came as a surprise to the regulators. How was this possible?

The first important point is that banking regulation is very different from other kinds of regulation. For example, there is wide agreement that environmental regulation is needed because there is a missing market. If a firm pollutes, it does not have to compensate the people who are damaged. Regulation is then needed to avoid the pollution of the environment. Antitrust is another important area of regulation. There the problem is monopoly. It is necessary to make sure that firms aren't monopolistic.

With banking regulation, the problem that is being solved is not at all clear. In fact, there is no general agreement that there is even a problem. Before the crisis, many central banks worked with dynamic stochastic general equilibrium models that don't even include a banking sector. The view underlying these models is that the real economy is going to work fine and the financial system is unimportant, except for pricing assets (see, for example, Muellbauer, 2009). In line with this, contagion, panics and more generally crises are not a problem justifying regulation. Given this approach, it is no surprise that so many central banks completely failed to predict the crisis that started in 2007.

The current structure of banking regulation is the result of ad hoc measures introduced in response to past crises. Many regulatory measures and bodies (the Glass-Steagall Act separating investment and commercial banking, the SEC, and all the subsequent SEC Acts) were introduced after the Great Depression to avoid the recurrence of such a deep crisis. This regulation was successful in terms of stopping crises. From 1945 until the early 1970s, there were no financial crises in terms of banking crises, except for one in Brazil in 1962 (see Bordo and others, 2001). This shows that one way to stop crises is to stop financial institutions taking risks.

The problem is that the alternative to private institutions taking risks is that the government intervenes in the allocation of credit. This can be done in different ways. Some countries, such as France, nationalized banks and the government directly made decisions. In the United States, the government introduced so many regulations restricting banks' possibilities to take risk that mostly low-risk industries were allocated credit. As a result, the financial system stopped fulfilling its basic purpose of allocating resources where they are needed. In the 1970s it became clear how inefficient

this was and financial liberalization started in many countries. However, this led to a revival of crises. Since then, there have been crises all around the world (see, for example, Boyd, De Nicolò, and Loukoianova, 2009).

This historical evolution has led to a mishmash of regulations designed to stop particular problems, rather than a well thought out way of reversing market failures in the financial system. We would argue that current financial regulation is rather unfortunate, as it requires much time and effort for banks to comply with it, but doesn't actually do much to resolve market failures, as evidenced by the failure of regulations to prevent this crisis.

6. BANKING REGULATION

To design effective banking regulation, we need to know benefits and costs. The benefit of regulation is that it can potentially avert damaging crises. But the cost is that to do so, the financial system needs to stop allocating resources efficiently, to the detriment of growth and innovation.

The Basel Agreements offer a good example of what can happen when the benefits and the costs of financial regulation are poorly defined. There is no clear statement in the documents of what market failures the Agreements intend to solve. Equally, there is no explanation in the Agreements for the imposed levels of capital ratios. They seem to have been chosen simply at the levels that banks had used in the past. Not surprisingly then, capital regulation was unable to prevent the 2007 crisis.

In our view there are three main market failures in banking, which we consider in turn: the inefficient provision of liquidity; persistent mispricing of assets due to limits to arbitrage; and contagion. The current crisis has underlined the fact that at times, financial markets may not have been able to provide the efficient amount of liquidity (see, for example, Allen and Gale, 2004; Allen and Carletti, 2006). That is why central banks stepped in and designed many programs to inject liquidity into the banking system. The reasons behind the inefficient provision of liquidity are not fully understood yet. The basic problem is that liquidity is costly to hold. Without government intervention, people are willing to hold liquidity in a financial system only if there is significant price volatility. But price volatility causes crises. When prices fall to low enough levels, this can bankrupt financial institutions.

The second market failure is persistent mispricing of assets, due to limits to arbitrage. One of the big issues in the 2007 crisis was how to understand the pricing of mortgage-backed securities. If markets are efficient, market prices reflect the true value of the underlying stock. If something gets underpriced, there is a profit opportunity. Investors can buy the underpriced security and make a profit. This incentive provides the arbitrage mechanism that ensures that prices rise to the correct level.

In the 2007 crisis, this mechanism seems to have stopped working, in that there were limits to arbitrage. A good example is what happened in the fourth quarter of 2007. The prices of mortgage-backed securities fell. Investors then doubled up. But prices kept on going down and investors made big losses. It became too risky to arbitrage the securities. The mispriced securities became the so-called “toxic assets.” The same happened during the dotcom bubble. Prices were too high, and kept going up for a prolonged period, so that arbitrage was not possible. That is the limit to arbitrage: prices keep moving in the wrong direction instead of going back to fundamentals. It is important to understand the limits to arbitrage better and develop mechanisms for overcoming them, so markets are efficient and market prices can be trusted.

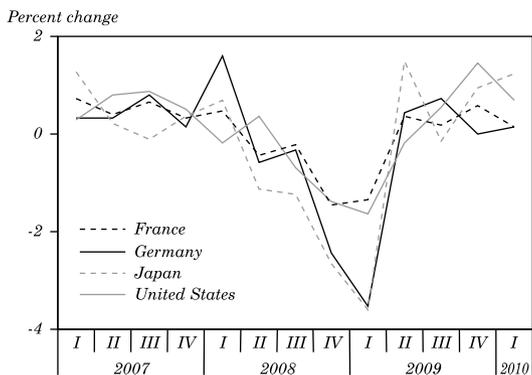
The third market failure is contagion (see, for example, Allen, Babus, and Carletti, 2009, for a survey). This is the market failure that central banks often use to justify intervention. An example is the Federal Reserve’s intervention to help arrange the takeover of Bear Stearns. The justification was that otherwise Bear Stearns would have defaulted. That would have led to a whole chain reaction, driving many other financial institutions into bankruptcy, and possibly triggering a complete collapse of the financial system (see Bernanke, 2008). Of course, it is difficult to judge if these arguments are correct. The Federal Reserve had two days to figure out Bear Stearns’s degree of interconnectedness, and they couldn’t really do it in that time.

Immediately after the arranged takeover of Bear Stearns, the Federal Reserve opened up the discount window to investment banks. In return, these institutions would allow Federal Reserve teams to inspect their books to find out their positions. When, six months later in September 2008, Lehman Brothers got into trouble and could no longer survive on its own, the Fed had a much better idea of the interconnectedness of these banks. Apparently, they believed that the classic kind of contagion would not occur if they allowed Lehman to go bankrupt. In fact there was contagion but it was quite complex.

After Lehman Brothers collapsed, Reserve Capital, the oldest money market mutual fund, “broke the buck”, as it held a significant amount of Lehman debt. In other words, the value of Reserve Capital’s shares fell significantly below the mandated level of one dollar a share. Investors in other money market funds suddenly realized that there could be a wave of similar problems and withdrew massively from money market mutual funds. Within a few days the government was forced to guarantee all money market mutual funds. At the same time, AIG was on the point of default. In this case, the government decided they could not take another risk so, they saved AIG to prevent an even larger contagion.

In addition to these direct contagion effects, there have been indirect effects. The realization that the government might allow a financial institution to fail caused a loss of confidence in many financial service firms. The volumes in many important financial markets fell significantly and there was a large spillover into the real economy. Up to that point, the crisis had been largely confined to the financial sector, with relatively few effects on real economic activity. Figure 3 shows how GDP fell significantly in the fourth quarter of 2008, particularly in Japan and Germany. This underlines the importance of contagion, but there is still much scope for a better understanding of its indirect effects.

Figure 3. Quarterly GDP in Four Countries



Source: Organization for Economic Co-operation and Development (OECD).

Going forward, it is important that banking regulation be structured to solve these and other market failures. We need to better understand the optimal form of central bank intervention to restore liquidity in crucial markets, such as the interbank market. Market structures should be designed to make markets as efficient as possible and avoid extended episodes of asset mispricing. Finally, regulations should be introduced to minimize the pernicious effects of contagion. Capital regulation could play an important role.

7. HOW WILL THE CRISIS DEVELOP?

An important question is what will happen going forward. The 2007 crisis has often been compared to the Great Depression. While there are certainly analogies between the two crises, institutions, technologies, and many other aspects were very different 75 years ago. This limits the conclusions that can be drawn from this analogy.

The most similar recent crisis is the one that occurred in Japan in the 1990s. The reason is that Japan is the second biggest economy and had a large bubble in both stock and property prices. In the mid-1980s, the Nikkei was around 10,000 and it peaked at just under 40,000 in December 1989. Recently, the Nikkei has been trading in the range of 7,000 to 10,000. This means that it is still around a quarter to a fifth of where it was 20 years ago.

Similarly, property prices were very high. At the peak of the bubble, the value of the few hundred acres that the Imperial Palace stands on in Japan had the same value as all the land in Canada or California (see Ziemba and Schwartz, 1992, p. 109). Real estate prices fell 75 percent over 15 years. This caused enormous problems in the real economy and Japan went from having one of the most successful and fastest growing economies in the world to having one of the slowest.

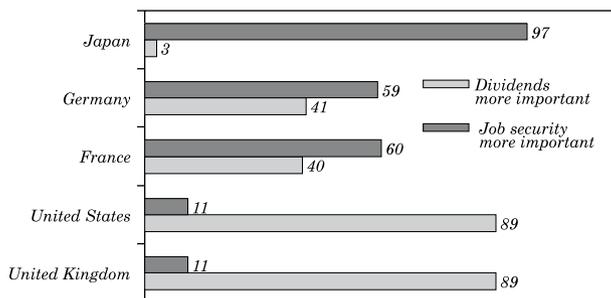
The question is whether the bubble bursting in the United States will provoke similar effects as in Japan. Some argue that the U.S. bubble was smaller than Japan's, in the sense that asset and property prices had not risen as much. Concerning stocks, there was a reverse of the tech bubble in stock prices in 2001. Afterward, stock prices rose significantly from 2003 to 2007. Early in 2009, stock prices had fallen to around a half of what they were at their peak in 2007, and then rose by more than 50 percent by late 2009. Whether this is a long-lived phenomenon, as in Japan, or just a liquidity and mispricing problem such that prices are going to snap back fully in a year or two

as they did after the crash of 1987, is too early to say. Many believe that prices will return to pre-crisis levels once the government has cleaned up the financial system.

On property prices in the United States, many experts argue that these were about 25 percent above trend. The Case-Shiller index in figure 1 shows that property prices were down about 30 percent in mid-2008. The adjustment since then may mean that price adjustment has ended and the economy will move back to normal, as it did eventually in Japan. However, this is not necessarily the case. The reason is that Japan has a very different kind of economy in terms of corporate governance. Japanese firms are much more stakeholder-oriented than their U.S. counterparts. This means that Japanese firms care more about their workers, suppliers and other stakeholders than about shareholders, so they react very differently to shocks and crises as compared to firms in the United States.

Evidence of this is provided by the answers to some surveys where the question asked is (for example, Yoshimori, 1995): “What’s the prevalent view in your country? If times get bad, should firms maintain dividends and lay off workers or should firms cut dividends and keep stable employment?” Figure 4 shows that the answer to this question varies significantly across countries. In Japan, the answer is that firms should cut dividends and maintain employment. In the United States and the United Kingdom, it’s the complete opposite. Firms should fire workers and keep dividends up.

Figure 4. Job Security versus Dividends^a



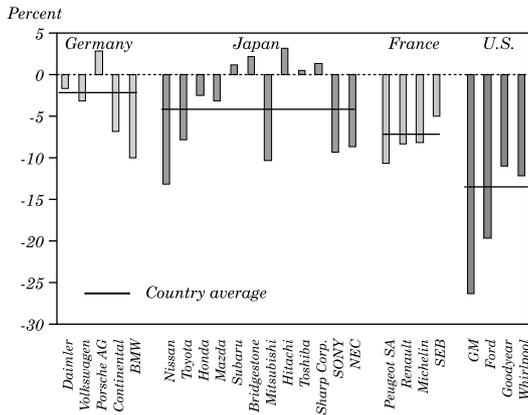
Source: Yoshimori (1995).

a. Number of firms surveyed: Japan, 68; United States, 83; United Kingdom, 75; Germany, 105; France, 68.

In the past 20 years, the focus on shareholders has been very beneficial to the United States and the United Kingdom, because it allowed resources in the economy to be reallocated very quickly. This fast reallocation was not possible in Japan in the 1990s and 2000s. However, the situation in the current crisis is very different. U.S. firms have been firing many workers since 2008, unemployment has gone up, and that may have dramatic macroeconomic consequences. The unemployment rate in the United States was 4.7 percent in July 2007 and had risen to around 10 percent by the end of 2009. In addition, unemployment can trigger fears of additional future unemployment.

Figure 5 points to further differences, in terms of unemployment, between the United States and other countries. The figure shows the layoffs in companies in the auto industry and in white goods (consumer durables) in different countries. Both industries were hit quite badly. As the figure shows, there have been many more layoffs in the United States compared to other countries. Germany experienced the lowest number of layoffs. In fact, Volkswagen is increasing employment.

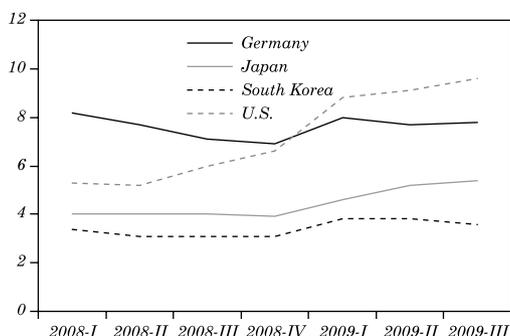
Figure 5. Country-Based Effect on Workforce Reduction per Company



Source: Company reports.

The aggregate statistics for unemployment in figure 6 confirms that U.S. unemployment has gone up dramatically. In contrast, for Germany the line is basically flat. This implies German workers do not feel threatened and can continue to consume. The different corporate governance structures across countries may also explain the different needs of the various countries to introduce stimulus packages during the crisis.

Figure 6. Unemployment Rates



Source: OECD.

To sum up, focusing on value creation for shareholders works well for economic efficiency in boom times, as it facilitates the reallocation of resources to their most efficient uses. However, in times of crisis, laying off workers may create macroeconomic instability. A soaring unemployment rate can cause significant feedback effects. A critical issue when comparing Japan's experience in the 1990s with U.S. experience now is how big these feedback effects will be in the United States. Japan had a lost decade with slow growth but did not see a large contraction in GDP and an increase in unemployment. How big the feedback effects in the United States will be in the long run remains to be measured.

8. EXCESSIVE RISK TAKING IN PRIVATE OR PUBLIC SECTORS?

Reforming financial regulation is certainly one of the most important priorities now. Other measures should, however, be adopted. People have laid a lot of blame on the private sector, in particular for the excessive risk taken by banks. In light of the view

that there was a bubble and that central banks played a big role in creating it, however, it is also important to think about how to avoid such a problem in the future. In other words, it is also important to avoid the problem that the public sector will take risks again.

After the inflationary experiences of the 1970s, many countries made their central banks independent. The main rationale was that independent central banks were less likely to succumb to political pressure to cut interest rates and cause an inflationary boom at every election. This principle has worked very well for preventing inflation. However, this crisis has demonstrated that central bank independence is not good for financial stability. In essence there are very few checks and balances on central banks. In the Federal Reserve, for example, Alan Greenspan could basically decide on his own to cut interest rates to 1 percent in 2003. In those days, there wasn't much dissension within the Board of Governors. The low interest rates avoided a recession in the short run, but fueled the bubble and thus led to a much bigger recession after the crisis that started in 2007. Better governance mechanisms are needed to guarantee proper debates on decisions concerning interest rates. The current mechanism seems highly inappropriate.

Again, there has not been much discussion about the use of quantitative easing. This allows the Federal Reserve to effectively print money and buy back long-term government bonds. Although this may be beneficial in the short run, it may lead to excess liquidity and thus inflation in asset prices in the longer run. Quantitative easing has not been tried very much. It was used in Japan in the 1990s, but did not help cure the problem. It didn't lead to inflation in Japan either, but it probably did lead to a larger yen carry trade than would otherwise have occurred.

To illustrate the riskiness of quantitative easing, suppose that after increasing the money supply there is a burst of inflation. At that point, the Federal Reserve has to start soaking up liquidity again, by selling the bonds that they bought with the program of quantitative easing. However, buying is clearly much easier than selling. If, for example, the Chinese and other foreign holders of U.S. Treasuries decide to withdraw some of their money from the United States and start diversifying their investment into euros and yen, then there is likely to be a run on the dollar.

This is just an example to illustrate the problems that can originate from inappropriate policy and an inappropriate governance mechanism in the public sector.

9. PREVENTING GLOBAL IMBALANCES

As mentioned above, the IMF arguably helped cause the problem of global imbalances through its harsh policies in the 1997 Asian Crisis. At the time, there was no mechanism to stop this from happening, because the Asians were not as important politically and were underrepresented in the IMF governance process. Today, the Asian countries are among the most important economically. The Chinese have almost 2.5 trillion dollars, the Japanese another trillion, and South Korea several hundred billion.

Asian countries have also been quite resilient to the 2007 crisis. For example, South Korea cut interest rates and allowed the value of its currency to sink a long way. In contrast to the 1997 crisis, when unemployment rose to more than 9 percent, it has only increased slightly in the current crisis. The reason is that they could use their large reserves to pursue these policies, without any approach to the IMF.

While it is individually advantageous for countries to self-insure by accumulating reserves, this is a very inefficient mechanism from a global perspective. One possibility is that the countries accumulating reserves must lower their consumption to do so, and other countries must run deficits to offset these surpluses. In practice, the United States was the main deficit country. The resulting buildup of debt and its role in triggering the crisis shows that this was not desirable. Another possibility is that countries building up reserves borrow long term and invest short term. These alternatives raise the question of what the alternatives to self-insurance through reserve accumulation could be.

The first clear alternative is to reform the IMF to guarantee that countries hit by shocks are treated properly, if they need help. If countries can always rely on fair and equitable treatment and not being forced to implement harsh measures, they need not accumulate large levels of reserves. To achieve this change, the IMF needs to reform its governance structure, so that Asian countries play a much larger role. This should be accompanied by an increase in Asian staff at all levels. Unfortunately, current proposals do not go nearly far enough in this regard, and it seems unlikely that the IMF will apply sufficient reforms to make large reserves unnecessary in the short to medium run.

A number of Chinese officials have made proposals for a global currency to replace the dollar. This kind of approach has the great

long-run advantage that reserves can be created initially, without large transfers of resources and the attendant risk of a crisis. All countries could be allocated sufficient reserves to survive shocks. The drawback of this proposal is that an institution like the IMF would be necessary to implement the currency and the issue of fair representation of Asian countries would arise again.

A more likely medium-term scenario is that the Chinese renminbi becomes fully convertible and joins the U.S. dollar and the euro as a third major reserve currency. With three reserve currencies there would be more scope for diversification of risks and China itself would have very little need for reserves, in just the same way that the United States and euro zone countries do not need significant reserves.

10. OTHER KEY REFORMS

So far we have suggested three important reforms. The first is that banking regulation should be based on a coherent intellectual framework of correcting market failures. The second is that the Federal Reserve and other central banks need to be subject to more checks and balances than is currently the case. The third is that the IMF needs to be reformed so that Asian countries can rely on being treated in the same way as European countries, so they do not need to build up enormous reserves. In this section we consider several other key reforms.

10.1 “Too Big to Fail” Is Not “Too Big to Liquidate”

One of the most important principles guiding policy during the current crisis has been that large institutions are “too big to fail.” The notion is that if Citigroup, for example, is allowed to fail, this is going to cause many other institutions to fail throughout the financial system. This is the contagion problem discussed earlier. The way that this policy has been implemented is that governments have bought preferred shares in many institutions that would otherwise have failed. They have made clear that these institutions will be provided with the capital that they need in order to survive.

We would argue that this is the wrong way to deal with the “too big to fail” problem. As Lehman Brothers’ demise illustrated, contagion is a very real problem and large banks should not be allowed to simply go bankrupt. However, “too big to fail” doesn’t mean that we should allow these institutions to survive. It’s a very

bad precedent to provide failing banks with the funds they need to survive. In the future, banks and other financial institutions will grow and become large. They know they will then be “too big to fail,” and everything will be fine for most of their employees and customers. Firms that form a business relationship with them know they are going to be able to continue. The banks will then be willing to take large risks, since they receive the payoffs if gambles are successful, while the government bears any losses.

However, “too big to fail” does not mean “too big to liquidate.” Financial institutions should be prevented from failing in a chaotic way. The government should step in and take them over, to prevent contagion. But rather than allowing them to continue, these institutions should be liquidated in an orderly manner and possibly over a long period of time. That would allow other institutions that didn’t fail and are well run to expand and take their business. Propping up the weak ones that did badly is not a good idea in the long term. It rewards risk taking and perhaps more importantly it prevents prudence from being rewarded. Well-run banks that survive should benefit.

An important aspect of such a scheme for allowing the government to prevent contagion by taking over failing institutions is to have bankruptcy rules for non-bank financial institutions that allow the equivalent of prompt corrective action for banks. With a bank, the government can step in before it goes bankrupt and take control. There doesn’t have to be a shareholder vote. This is necessary for all financial institutions. That’s what the government should have been able to do with Bear Stearns and Lehman Brothers. This would have prevented the great uncertainty that occurred when they failed.

10.2 Resolution of Large Complex Cross-border Financial Institutions

A major difficulty in designing a framework that allows financial institutions to be liquidated is how to deal with large, complex, cross-border institutions. In particular, there is the problem of which countries should bear any losses from an international mismatch of assets and liabilities. This has proved a thorny problem for the European Union in designing a cross-border regime to support its desire for a single market in financial services. For countries without political ties like the E.U., the problem is even more difficult. Designing such a system is one of the most urgent tasks facing governments.

One possible way to proceed would be to eliminate cross-border branching. Then, the host country would regulate any subsidiaries. These regulators would be charged with ensuring that they were comfortable with any imbalances between assets and liabilities in their country. They would be responsible for intervening, should a foreign subsidiary or home institution come close to failing, and would be responsible for covering any shortfalls of cross-border assets and liabilities resulting from failure.

The issue of cross-border resolution is one of the most important and urgently needs to be addressed. Current proposals have made very little progress on this issue.

10.3 Limited Government Debt Guarantees for Financial Institutions

In the current crisis, bank bondholders have effectively had a government guarantee. There is an important issue of whether this is desirable. Such a guarantee prevents disorderly wholesale runs. However, this again provides undesirable long-term precedents. Going forward, holders of bank debt will know it is guaranteed and will not have any incentive to exert market discipline. If failing banks are nationalized and liquidated in an orderly manner as discussed above, it should be possible to impose losses on long-term bond and other debt holders. This should provide incentives for market discipline by bondholders.

10.4 Removal of Tax Subsidies for Debt

The tax system in many countries subsidizes the use of debt in many ways. For example, in the United States, mortgage interest is tax deductible. These kinds of incentives to use debt are not desirable in a financial stability context. They should be removed.

10.5 Capital Adequacy Regulation Should Be Based on Market Capital as Well as Accounting Capital

Capital adequacy rules have an important role to play in preventing contagion and other problems. However, one aspect of their current implementation is that they are based on accounting capital. When Wachovia effectively failed, its accounting capital was well above regulatory limits, even though the market was no longer willing

to provide funds. This example underlines the importance of using market capital in regulation, in addition to accounting capital.

10.6 Mark-to-Market, Historic Cost Accounting or Something Else?

Financial institutions have traditionally used historic cost accounting for many of their assets. This is problematic if assets fall in value as they are able to hide this fact for significant periods of time. A good example is the savings and loan crisis in the United States in the 1980s. This kind of episode encouraged a move to mark-to-market accounting by the International Accounting Standards Board and the U.S. Financial Accounting Standards Board (FASB) (see, for example, Plantin, Sapra, and Shin, 2008; Allen and Carletti, 2008a). During the current crisis, it is not at all clear that market prices have reflected fundamental values. Mark-to-market accounting has come under severe criticism by financial institutions, and has been relaxed by the FASB under political pressure from Congress.

How should the advantages and disadvantages of mark-to-market accounting be balanced? As long as markets are efficient, mark-to-market accounting dominates. However, if, as during times of crisis, they cease to be efficient, market prices do not provide a good guide for regulators and investors. The key issue then becomes how to identify whether financial markets are working properly or not. Allen and Carletti (2008b) suggest that when market prices and model-based prices diverge significantly (more than 2 percent, say), financial institutions should publish both. If regulators and investors see many financial institutions independently publishing different valuations they can deduce that financial markets may no longer be efficient and can act accordingly.

10.7 A Role for Public Sector Banks in a Mixed System

Some countries have a publicly owned commercial bank that competes with private sector banks, such as Chile with its *BancoEstado*. In times of crisis, such a bank can expand and help stabilize the market, as all market participants know that it is backed by the state and will not fail. During the 2007 crisis, that is what the Federal Reserve was effectively doing. It became one of the biggest commercial banks in the world. But the people in the Fed did not have much expertise in running a commercial bank. They didn't

know much about credit risk. It would be better to have expertise in the public sector, which allows the state to perform commercial banking functions during times of crisis.

11. CONCLUDING REMARKS

If our hypothesis, that the most recent crisis similar to the one starting in 2007 was Japan's in the 1990s, is correct, this implies that the after effects of the current crisis will be long lived. The problem is that when bubbles burst more than the financial system gets damaged. Prices have been wrong and finding the correct new prices can take a long time, particularly if the bubble was largely in real estate. During the adjustment period economic activity can be badly affected.

In the current crisis, both residential and commercial property prices have fallen significantly. That may well cause the same kind of problems in commercial-backed securitizations as with subprime securitizations. The other major problem is corporate defaults.

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