

Reflections on the U.S. Housing and Credit Crisis

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ABSTRACT

The objective of this study is to provide some perspectives on the U.S. housing and credit crisis. It briefly examines the genesis of the crisis in the housing markets, where real home prices departed significantly from economic fundamentals. The focus is also made on the rapid expansion of credit default swaps in a regulatory vacuum that was bound to generate uncontrolled exposures and unmitigated systemic risk. The short-term solutions to the financial crisis have been characterized by extensive relief programs, looser monetary policies and substantial fiscal stimulus, which have their own limits and long-term costs. Such remedies imply that the recovery of financial institutions may be achieved only at the expense of a severe deterioration in the balance sheets of central banks and unprecedented government deficits. It is thus important to reflect upon alternative remedies such as debt for equity swaps which are more consistent with market discipline and responsible investment.

I . Introduction

It is difficult to provide a full account of the causes of the U.S. housing and credit crisis and understand its long-term implications as it rapidly evolves. But, it may be useful to shed light on the underlying conditions and important events that contributed to its precipitation. The bubble in the housing and capital markets

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conferred a false sense of confidence, and everlasting prosperity. But the trend for increasing asset prices was by no means sustainable and the transition process from wealth creation to wealth destruction with the collapse of credit markets has been rather precipitous. The steep fall in housing and equity prices is a reminder that while bubbles may develop over either limited or longer periods of time, they can hardly be terminated on gradual basis. In the words of Galbraith (1954), to incise a bubble with a needle in order for it to subside gradually is a task of no small delicacy.

The question of whether this financial crisis was to a large extent predictable and hardly surprising is a matter of debate. It may be argued that the onset of the crisis can possibly be described with reference to the Minsky credit cycle model, where the financial system can play a significant role in exaggerating the business cycle. Lower borrowing costs may be conducive to substantial amounts of credit devoted to speculative activities. At some point in the business cycle, higher leverage can lead to serious debt problems for investors and market liquidity problems. The inability of Ponzi borrowers to service neither interest nor principal payments can be considered as an important turning point in the credit cycle. Thus, asset bubbles generated by such credit cycles are typically characterized by excessive borrowing for speculative activities, which can be fuelled for instance by the loosening of credit standards and lack of adequate financial regulation.

From this perspective, important questions naturally arise as to what extent monetary policy, financial regulation, and securitization contributed to the U.S. financial crisis. There are crucial issues that need further examination in the aftermath of the collapse of the U.S. credit market, such as whether the systemic risk associated with financial institutions can be properly assessed and appropriately mitigated by financial regulators, and whether the rescue of certain finan-

cial institutions is warranted on economic grounds. The management of the crisis poses indeed some critical problems, which relate to the present architecture of the financial system, including the function of rating agencies, and the role of regulatory authorities. The objective of the present study is to provide some reflections on the U.S. housing and credit crisis from the economic and regulatory perspectives. The focus is made first on asset pricing and the genesis of housing crisis due to significant departures of home prices from economic fundamentals. The advent of financial securitization and the growth of credit default swaps are then briefly considered from the regulatory perspective. Finally, the contents and impact of government responses to the credit crisis are examined, mainly with respect to the Troubled Asset Relief Program and the Supervisory Capital Assessment Program.

II. Historical perspective on the behavior of U.S. housing prices

In order to better understand the genesis of the housing crisis and the developments that precipitated the fall in asset prices, it is important to provide a historical perspective using the time-series of U.S. home prices. Figure 1 describes the behavior of U.S. real home prices, real building costs and real interest rates as well as the U.S. population over the period from 1890 to 2006. The long-term average of real home prices is about 102 (with home prices in 1890 set to 100), but the peak of 200 reached in 2006 amounts to almost double the long-term mean. This increase did not take place on a monotonous basis over the years, but it seems to occur over a short period starting from the mid 1990s. Indeed, the average real house prices until 1950 was only around 88, but it rose to 112 over the subsequent period until 1990. Judging from this statistical evidence, the 85% increase in real home prices over the ten-year period from 1997 to 2006 is unprec-

edented.

As noted by Shiller (2008), this sharp jump in real home prices can hardly be justified on the basis of population dynamics or changes in building costs and interest rates. The U.S. population seems to rise monotonously and the increasing pattern may lend support to a rise in the aggregate demand for homes. But the observed dynamics can hardly explain the sharp increase in home prices. It should be noted that in addition to demand shocks, the behavior of home prices may be also reflective of supply shocks. The evidence from Figure 1 suggests that as far as the supply factors are concerned, the average real building costs rose to 79 over the last decade until 2006, which is above the long-term mean of 63 from 1890 to 2006. But it is also clear that real building costs were already on the descending curve at the time when real home prices were rising. It is thus difficult to attribute the sharp rise in home prices to higher building costs. This can hardly be understood in light of changes in real interest rates either, which

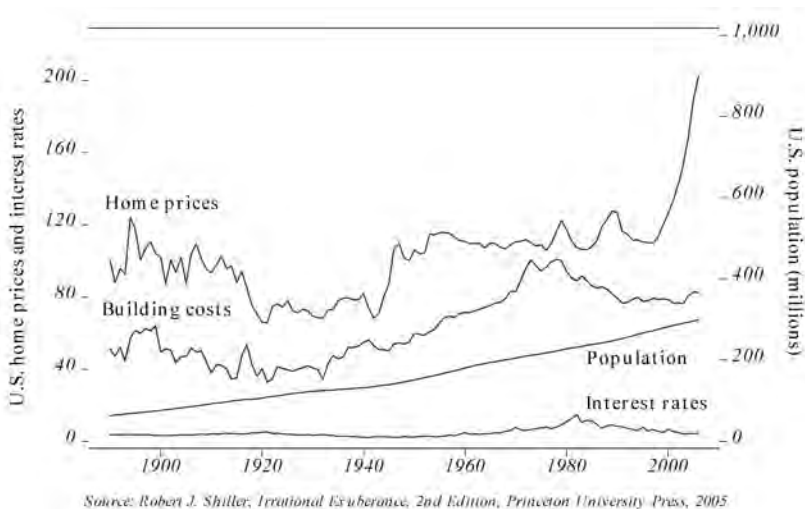


Figure 1. Time-series behavior of U.S. home prices
(Sample period: 1890-2006)

leaves the observed rise in real home prices difficult to explain on theoretical basis. The misalignment of home prices with economic fundamentals provides sufficient evidence of mispricing, which could only beget market corrections, however delayed such adjustments may be. Given this clear evidence of unsustainable home prices, there is little substance in the argument that a fall in home prices was highly unlikely.

The view that subprime mortgages are responsible for the severe problems in the entire housing market cannot be defended either. As shown by Shiller (2008), despite differences in the behavior of home prices across price tiers, the housing bubble was observed with respect to lower-priced, mid-priced and high-priced houses invariably. In this sense, the pricing failures of the housing market are not confined to the subprime tier, and the current financial crisis should be fully understood in light of its pervasiveness across different price tiers and across cities. In this sense, the crisis in the housing market is a natural outcome of the irrational divorce of real home prices from the economic and demographic fundamentals.

History may not provide an accurate estimate of how much lower residential investments may decrease in the aftermath of crises. The sharp and prolonged decreases in home prices over the period 2007-08 provides clear signs that the momentum for higher inventories and shrinking construction is gathering. Judging from the three previous housing cycles of 1975, 1982 and 1991, residential investment tends to peak at 5.5% of GDP and fall to levels as low as 3.5% of GDP. While the current crisis does not differ from earlier episodes with respect to its peak levels reached in 2006, investment is already as low as 3.1% of GDP as suggested by estimates from the second quarter 2008. This provides further signs of prolonged downward spirals in the housing market and the prospects for prompt recovery are rather remote.

III. Financial crisis and financial market volatility

According to the 2008 annual report by the Bank for International Settlements, the initial crisis in the subprime residential mortgage-backed securities (RMBS) in June-July 2007 had the effect of raising the level of volatility in credit markets including collateralized debt obligations (CDO), and commercial mortgages. The spillover into short-term credit and interbank money markets ensued as the crisis evolved into one of squeezed liquidity and asset deflation. There were also early indications of liquidity problems in the market for asset-backed commercial papers. Further uncertainty about asset valuation is associated with waves of downgrades in RMBS and CDO ratings and revisions of earlier writedown announcements. Given the increased demand for liquidity to mitigate losses, there were considerable strains in the financial system, which were reflected by widening credit spreads. By March 2008, the evidence of dysfunctional financial markets was mounting due to increased liquidity demand and concerns about systemic risk and the stability of the financial system.

Upon the onset of the financial crisis, the issuance of asset-backed securities in the fourth quarter of 2008 decreased to \$2.7 billion, which represents a fall of 86.7 percent from the previous quarter, with virtually no asset-backed securities issued with respect to the main categories of home equity, student loans, credit cards, and equipment leases. Indeed, according to research by the Securities Industry and Financial Markets Association, the market for credit card and student loans recorded no single issuance in the fourth quarter 2008. Also, the home equity ABS issuance decreased more than 98 percent in 2008 relative to comparable statistics for 2007. Part of the reason for the significant increase in defaults and foreclosures in the subprime sector starting from 2005 is that a large portion of loans were hybrid Adjustable Rate Mortgages (ARMs). There is a

high potential for systemic refinancing and default associated with ARMs, which are usually offered at high spreads and designed essentially to be refinanced or defaulted upon within a couple of years. An important number of ARMs were expected to be the subject of interest rate resets in 2008. The exposures to losses from defaults in the subprime sector were reduced through the securitization process, but the realization of significant losses is also sensitive to the scale and magnitude of rating downgrades.

Indeed, according to S&P Global Fixed Income Research, there were as many as 55 issuer downgrades from investment grade to speculative grade in 2008. The default of the investment bank Lehman Brothers alone represents approximately a third of the debt worth affected by these downgrades. The number of issuers subject to such downgrades was highest in the homebuilders and real estate sector, followed by the banking and insurance industry, among others. Part of the reason for the rapid spillover of housing problems into the financial sector was the growing fear of forced sales of assets held by Structured Investment Vehicles. The mounting selling pressures in mortgage markets are in fact responsive to rating changes, and collateralized debt obligations are also sensitive to changes in credit quality. Lower ratings have the direct effect of changing default projections and affect the plausibility of underlying assumptions such as default severity, which measures the amount of loss incurred in case of default. The increasing potential for defaults and further deterioration in the credit market is conducive to widespread deleveraging and substantial reduction in risk appetite.

In light of the increased systemic risk and heightened uncertainty, the onset of the housing and credit crisis exerted also downward pressures on equity prices. The S&P 500 composite index exhibited in Figure 2, clearly indicates a significant downward trend starting from June-July 2007. This equity benchmark

succumbed to strains in the financial system and growing fears about the stability of the banking sector in particular. It decreased from the peak of 1565 in October 2007 to 676 in March 2009. The investors' perceptions of higher volatility are reflected by the behavior of the new VIX implied volatility index disseminated by the Chicago Board Options Exchange. This benchmark of volatility expectations is derived from the S&P500 options and provides a gauge of investors fear and changing attitudes toward risk. The time-series of the VIX levels described in Figure 2 indicates that market volatility was expected to increase significantly in March 2007 and rise to even higher levels in August 2007. These volatility expectations fluctuated erratically until September 2008 and significantly increased afterward to unprecedented levels.



Figure 2. Time-series of S&P500 composite and VIX implied volatility index (Sample period: January 2007-April 2009)

These sharp increases in volatility expectations are closely related to major events such as the demise of Bear Stearns in March 2008. The failure of this investment bank to rollover repo funds under the weight of huge amounts of il-

liquid mortgage assets resulted in its takeover by J.P.Morgan. The sudden rise in anticipated volatility seems to be triggered also by the demise in September 2008 of Lehman Brothers, another investment bank with substantially high leveraged positions. The level of the VIX volatility benchmark is inversely related to the underlying S&P500 composite index. The expected rise in volatility coincides with the arrival of new information about the financial turmoil in the credit markets. The average VIX level over the last quarter 2008 reached 58, which is much higher than the long-term mean of 20 estimated from the sample period 1990-2008. The S&P500 declined by 19% in the fourth quarter 2008 as the VIX index remained at levels in excess of 40, more than double the long-term mean. The new VIX index reached the historical closing level of 80.86 on October 27, 2008 in association with sharp decreases in equity markets around the world. Though this volatility index receded to lower levels over more recent periods, its average from January to April 2009 is still higher than the long-term mean. There are no signs of mean reversion judging from the degree of investors' fear as measured by this volatility index, which has not abated yet to pre-crisis levels.

IV. Regulatory perspectives on the credit crisis

Given the unprecedented levels of volatility in equity markets and the dysfunctional credit markets, intervention from monetary authorities through expansionary monetary policy and the recourse to public finances constitute an important part of the immediate remedies to the crisis. By providing liquidity to financial institutions, the Federal Reserve became the *de facto* lender of first and last resort. There are however varying opinions as to the economic rationale behind the selective rescues of financial institutions, the appropriate definition of the too-big-to-fail maxim, and the long-term effects of public funds injections. Arguably, the significant problems posed by the onset of the housing and financial crisis

have exposed serious flaws in the financial architecture, the design of financial products, and the regulation of financial markets. Because these are not mere signs of weakness and fatigue but strong indicators of structural flaws, there is a need to assess the regulatory treatment of new financial practices such as the securitization process and CDS trading as well as the more traditional credit-rating process.

Part of the blame for the housing crisis is laid at the door of the securitization process, which involves the bundling of cash flows from various sources such as consumer loans and home mortgages into financial claims or packages of securities. These hybrid securities are backed by the pool of cash flows, which are distributed among investors according to predetermined priority rules. The role of securitization may be appreciated in relation to its attraction of additional funds for housing investment, providing thereby an additional source of liquidity. It can also be regarded as providing value to the society in terms of new channels for risk diversification. The question remains however as to what extent securitization has in the absence of adequate regulation, contributed to the serious problems in the credit markets.

Similar regulatory issues arise with respect to the advent of credit default swaps. Under this synthetic securitization scheme, there is transfer of credit risk to investors but without transfer of the pool of underlying assets themselves from the owner's balance sheet. It is possible for the owner of the assets to hedge against credit default by purchasing credit default swaps. In case of default, the CDS buyer is compensated by the protection seller for the same losses suffered on the underlying assets. The trading of CDS takes place entirely over-the-counter and usually involves banks or groups of banks. It should be however noted that the protection buyer is under no obligation to provide evidence of loss in order to obtain compensation. This implies that claims by CDS buyers for compen-

sation in association with the credit event are not conditional on the ownership of the reference assets. It is this feature that opens avenues for criticism that CDS is not only used for risk-hedging purposes but also for speculative trading, which allows for the build-up of counterparty risk and uncontrolled systemic risk.

The CDS spread indicates the annual amount that the protection buyer is required to pay in order to be entitled to compensation in association with the credit event, which can be defined in terms of default, bankruptcy or even credit rating downgrades. This spread is expressed in basis points, as a percentage of the notional amount of debt and in relation to the credit risk exposure of the protection buyer. An increase in CDS spreads is indicative of higher risk of default as perceived by market participants, or more precisely an increase in the probability of the credit event. The downgrade of General Motors debt in April 2005 translated into a significant increase in CDS spreads of several basis points. A substantial rise in GM idiosyncratic risk is reflected by a widening of CDS spreads and offers an opportunity for market participants such as the American International Group and hedge funds to sell protection. However, writing a CDS protection involves both a default risk and spread risk. Indeed, huge losses may be incurred in the case of GM default and the protection seller is also exposed to losses on mark-to-market basis in case the spread widens significantly. Judging from Figure 3, there are clear signs of market perceptions of increased risks attached with GM debt in early 2008 and these were exacerbated by the onset of the credit crisis in September of the same year. The CDS spreads jumped to 20,000 bps and further to 70,000 bps implying double-digit probabilities of default. The widening of CDS spreads attaining historical levels in May 2009 reflected the increasing anticipations of GM filing for bankruptcy.

It is clear from Figure 3 that the CDS spreads were also widening at the same time for AIG, which played a major role in CDS markets as protection

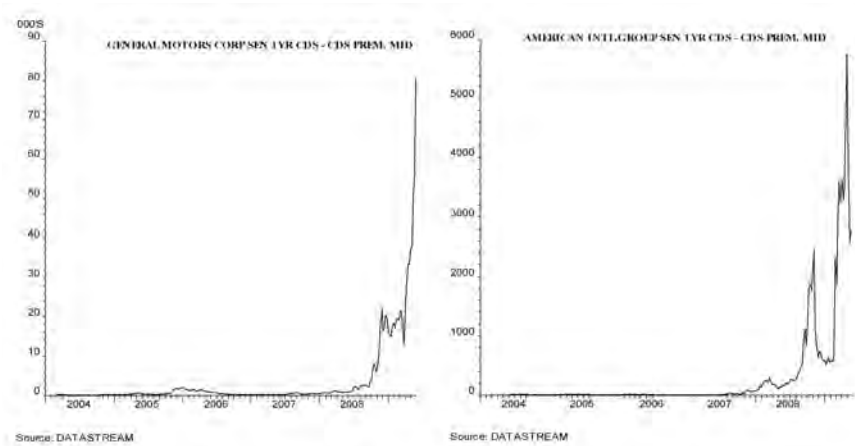


Figure 3. Credit default swaps on General Motors and American International Group
(Sample period: January 2004-May 2009)

seller. The widening CDS spread on GM debt provided not so much an opportunity for additional protection writers as a warning of build-up of default risk. The irony is that the single institution that provided protection against default by several reference entities posed itself a major risk of default. The high exposure of AIG to substantial compensation payments in case of default by reference entities, including presumably downgrades or default over GM debt, constituted a significant source of systemic risk. Arguably, it is on account of the sheer scale of this systemic risk that the initial rescue of AIG in September 2008 by the Federal Reserve was made. However, it effectively extended the domain of too-big-to-fail institutions to non-banking companies and increased thereby the extent of moral hazard inherent in such rescues. The government stands as a *de facto* protection seller, though with no prior contractual agreement made and no CDS premium received. The public funds injected into AIG can be regarded as compensation payments, triggered by a default event defined not so much with respect to other reference entities as with protection sellers themselves. The rescue by the Federal Reserve of an insurance company that is deemed too big to fail leaves the

regulatory authorities confronted with important issues, including the extent of exposure to future compensation payments and the importance of systemic risk.

Market perceptions of the creditworthiness of companies such as GM and AIG reflected in the CDS spreads are not necessarily consistent with firm valuations and assessments by rating agencies. As far as the GM idiosyncratic risks are concerned, there were increasing signs of distress since 2000, based on its deteriorating profitability, working capital, leverage levels and debt service management. But judging from Figure 3, it is only in 2005 that the CDS market provided initial signs of financial distress following S&P and Moody's downgrade of GM debt to sub-investment grade. The belated changes in rating grades are at the heart of the increasing loss of faith in the ratings agencies. It is thus crucial to address the inherent conflicts of interest in the ratings industry. To the extent that rating agencies routinely advise issuers on how to achieve investment grade, there is room for serious concerns about their independent judgment.

As with the ratings industry, the rapid growth of the CDS market should not obscure its own shortcomings. In the absence of adequate regulation, CDS trading has the potential of engendering significant problems in the credit markets. Though parties to CDS negotiations and trading are represented by sophisticated parties, which exclude individual investors, it is difficult to argue that adequate regulation is best left to market participants to decide upon. Indeed, in order to mitigate systemic risk, it is crucial to properly account for the individual obligations of counterparties including banks and brokers. It is admittedly difficult however to manage counterparty risk in the absence of a central clearing house for CDS transactions. Furthermore, under the current state of affairs, CDS trades are excluded from regulation by the CFTC Section 2(g) of the Commodities Exchange Act. They are also excluded from regulation by the Securities Exchange Commission following Section 2068 of the Gramm-Leach-Bliley

Act. There is thus uncertainty about the statutory authority for the regulation of credit default swaps. This CDS regulatory environment, or lack thereof, does not allow for timely measurement and informed assessment of the build-up of risk in the financial system.

V. Regulatory supervision

The demise of some investment banks and the financial difficulties faced by insurance companies such as AIG should not be deemed as isolated failures. Thus, the important question remains as to whether there is sufficient authority in the present regulatory system to deal with systemic risk. Arguably, systemic risk regulation lies with the Federal Reserve. But the pressing issue is that there is a lack of authority within the federal system itself to force banking institutions into bankruptcy. The crisis lends further support to the argument that the authority of the Federal Reserve System should be extended to reign in excessive leverage. Indeed, allowing institutions to fail, irrespective of their size, leverage, risk exposure, and market conditions, may affect the functioning of financial system in the short term and lead to substantial social costs. But allowing for the failure of imprudent institutions with high leverage and limited reserves may be the best regulatory option. No system can be devised to prevent all failures but the objective is to reduce the likelihood of defaults due to excessive leverage and inadequate risk management.

The reaction of the U.S. monetary authorities to the financial crisis took several aspects ranging from the Troubled Asset Relief Program to successive interest rate cuts. Starting from September 2007, the Fed Funds target rate was reduced from 5.25% to 0.25% in order to provide additional liquidity to credit markets. In order to circumvent restrictions on financial rescue schemes, investment banks were transformed into bank-holding corporations. While the eco-

conomic rationale behind the redefinition of the notion of too-big-to-fail institutions remains unclear, there was seemingly some reluctance from investment banks to endorse the new status that subjects them to increased regulatory supervision. Indeed, unlike commercial banks, investment banks and hedge funds face less scrutiny and regulation from the Securities and Exchange Commission, and tend to increase their leverage during booms and decrease it during crises. In fact, the new status has rather brought about some immediate benefits in the sense that new bank-holding companies are only required to report results starting from the first quarter of 2009. The significant net profits announced by Goldman Sachs for instance can be partly explained by the required switch to calendar-year reporting. This actually resulted in suppressing the mediocre performance during December 2008, in association with the credit turmoil.

This extension of regulatory supervision by the Federal Reserve is supplemented by the implementation of the Supervisory Capital Assessment Program (SCAP) in February 2009. Aimed at reducing the level of uncertainty about the financial system and restoring confidence in the financial institutions, these stress tests were undertaken to assess the readiness of the 19 largest bank-holding companies (BHC) to withstand severe economic downturns. In a white paper issued on April 24, 2009, the Fed reviewed the SCAP design and implementation. This program assesses the level of resources available to BHCs and their ability to absorb losses under adverse economic conditions. The important question is whether some additional capital buffer is required to maintain the ability of such BHCs to meet their customers' credit needs and fully exercise their role of financial intermediaries should the economic environment worsens. The stress tests are thus meant to assess revenues and losses under two worse-case macroeconomic scenarios over the two-year period 2009-10. Some BHCs may be required to increase their capital base or improve capital quality based on the results of

this forward-looking exercise.

The SCAP considers two alternative macroeconomic scenarios, including a baseline course of events and a set of more adverse conditions. The economic outlooks draw upon projections based on consensus forecasts and the Case-Shiller 10-city composite index futures. The assumptions underlying the baseline scenario include a fall in house prices of 14 percent and real GDP growth of -2.0% in 2009 and a rate of unemployment of 8.8 percent for 2010. The worst-case assumptions for the U.S. economy consider an economic contraction of 3.3 percent for 2009, a decrease of 22 percent in housing prices, and an unemployment rate of 10.3 percent for 2010. The plausibility of the assumptions underlying the worst-case scenario is a matter of debate, but while the prospects for a deeper and longer economic recession may be deemed to be unlikely, the rate of unemployment continues to rise, reaching 9.4 percent in May 2009. The job losses in manufacturing industries are significant, and the filing for bankruptcy protection by GM may only add to the momentum for rising unemployment. The annualized quarterly rate of GDP growth for the first quarter of 2009 reached -5.7 percent. These economic indicators are pointing toward a worsening of economic conditions, possibly beyond the worst-case scenario as far as unemployment rates are concerned.

The SCAP stress test results announced in May 2009 suggest that nine of the nineteen BHCs are not required to augment their capital reserves in order to provide additional cushion against adverse economic conditions. However, several concerns can be raised with respect to the design and implementation of these stress tests. While the results of this supervisory exercise may help attenuating investors' fears and anxiety about the banking sector, the important question remains as to what may happen if the economic recession veers ultimately toward depression. Though the adverse alternative is not intended to be a "worst-case"

scenario, the U.S. economy is deteriorating significantly and there is mounting evidence of deflationary pressures building up. The assumptions underlying the more adverse scenario, particularly the unemployment rate, may not be sufficient to capture the higher degree of adversity of future economic conditions.

Furthermore, the stress tests are primarily based on evaluations provided by the financial institutions themselves. They are not founded on independent appraisals by the regulatory authorities or by external auditors. It is in this respect that some economists such as Paul Krugman questioned the comprehensiveness of the assessment exercise and the reliability of the final results in the absence of genuine audit. In light of the serious concerns raised in regard to the underlying methodology and simulation results, the shift of foci toward uncertainty about the U.S. fiscal conditions is understandable. The growing concerns are not limited to the ability of financial institutions to repay TARP funds, but extend to the sustainability of government indebtedness. Given the price deflation in corporate bond and equity markets, investors can traditionally take refuge in the safety of government bonds. But the yield on government bonds is also rising together with concerns about the soundness of fiscal policies and the prospects of debt trap.

Conclusions

The methodology underlying the SCAP simulation tests is as important as the reported results, and the crucial question remains as to whether these stress tests can be replicated. Indeed, as noted by the Congressional Oversight Panel, it is difficult to reassess the capital needs of each institution under different parameter estimates and changing assumptions. In the absence of further details about stress tests, it is not possible to review neither the quality of reported projections nor the accuracy of calculations. The dependence of the supervisory authorities on the banks' own data and projections may be misplaced. It was indeed the fail-

ure by these very institutions to account for their risk exposures that led to the credit crisis in the first place. It may be possible to portray imprudent investment banks and insurance companies as the victims of once-in-a-lifetime shocks, but that oversimplification of the problem can only help perpetuating it.

While it is difficult to split the blame among market participants, financial regulators, financial institutions, and rating agencies, it is also important to avoid attributing the crisis merely to a combination of cyclical economic downturns and market failures. Clearly, policy failures together with insufficient market discipline and inadequate regulation helped exacerbating the crisis. The rapid growth of CDS trading in a regulatory vacuum and in the absence of a clearing house was also bound to generate uncontrolled systemic risk. Furthermore, the expansionary monetary policy contributed to the making of the asset bubble and overindulgence in debt. The excessive leverage was undisputably an integral part of the problem, but while the deleveraging process constitutes an important part of the solution, it may take some time before such problems of capital structure disappear. The worsening economic conditions and bearish equity markets are hardly conducive to an orderly deleveraging process.

The responses to the crisis have been invariably characterized by the recourse to extensive relief programs, looser monetary policies and unprecedented fiscal stimulus packages, which have their own long-term punitive costs. The prospects of severe deterioration of balance sheets for central banks, and worsening levels of indebtedness for governments are not negligible. The reduction of the real costs of debt may ultimately take place through higher inflation. The inception of quantitative easing and purchase of government bonds by the Federal Reserve are extreme and risky forms of monetary policy, which can be conducive to inflationary pressures and currency devaluation. It is thus important to shift focus away from solutions based on government debt. It was excessive

leverage that fuelled speculative activities and contributed to the observed asset bubbles. The important question remains as to whether public debt financing can constitute a viable solution to the crisis. Simple remedies based on excessive public borrowing may only sow the seeds for future sovereign debt crises. It is thus, important to reflect upon the issue of whether equity financing should take precedence over debt financing. The U.S. credit crisis provides an opportunity to consider the viability of more equitable remedies such as debt for equity swaps, which can be more effective and inherently consistent with market discipline and responsible investment. Admittedly, the solutions to structural problems are hardly palatable, but as argued by Paul Krugman, the only important structural impediments are the obsolete doctrines that clutter our minds.

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