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The Market View: Incentives Matter

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What went wrong to cause the excessive growth of leverage and credit that led to this particular systemic failure of housing finance and banking? What have been the policy responses to the financial crisis so far? What will be the consequences of the Federal Reserve's extraordinary balance sheet policies?

The principal lesson from a market perspective is that incentives matter. The explicit and implicit rules of the financial system create incentives that guide the behavior of financial agents. By shaping expectations, the intended and unintended impact of policy makers' words, acts, and omissions also create incentives. This suggests a second lesson that policies which may seem sound in concept can still create unintended bad outcomes when implemented without careful consideration of their incentive effects. This chapter will explore the types of market incentives that contributed to the

crisis and that the Fed needs to consider as it formulates and implements policies going forward.

What went wrong to cause the excessive growth of leverage and credit that led to this particular systemic failure of housing finance and banking?

Monetary policy was too easy in the United States and in other countries. The savings glut hypothesis begs the question of where the glut of (Asian and especially Chinese) savings came from. It came from a persistent "glut" of (Western and especially American) consumption in excess of income that could have been curtailed but, instead, grew when monetary policy remained too easy for too long. We over-stimulated housing and banking—the most interest-rate sensitive sectors of our economy—even as some other countries did the same thing.

Other factors influenced the outcome because they shaped the contours of the landscape that channeled the surge of credit caused by the prolonged period of monetary accommodation. While there are many agency problems and shortcomings of our financial system that can be accentuated by easy monetary conditions, four stand out as contributing causes of the crisis. They also stand out as an agenda for reducing systemic risk through changes in the rules that guide behavior that should be addressed before we create either a new federal systemic risk regulator or a new federal resolution authority for non-bank financial firms.

A lopsided regulatory process. Our risk-based capital regime for banks has rested on a faulty foundation. After a quarter century of developing ever-more complex risk-based capital rules, it turns out that if you lend money to someone who cannot pay you back, it does not matter whether you hold six,

eight, or ten percent capital against that loan because you will end up with losses and be undercapitalized in any event. Somewhere along the way, we seem to have forgotten the core rationale for government intervention in the management of banks: namely, that in competitive markets lenders will tend to chase the apparently wider net-interest margins on loans to riskier borrowers without properly accounting for the probability of default and, thereby, embed instability in their own balance sheets. They are particularly prone to do this in extended periods of monetary accommodation.

Disciplined credit underwriting and crude capital rules will produce a sounder banking system than sophisticated, risk-based (and even counter-cyclical) capital rules applied to credit written with shoddy underwriting. The failure of bank management and bank supervisors to apply *equal or greater* resources to the enforcement of credit standards, as were applied to the design and implementation of capital rules, created a lopsided regulatory process that is inherently unstable. In the absence of greater underwriting discipline, higher capital requirements will make our banking system less efficient but will not make it more stable.

GSEs unbounded. The panoply of federal incentives for housing played an important role in the extended rise of house prices that became a bubble. But particular attention should be paid to the change in the balance sheets of Fannie Mae and Freddie Mac that was permitted after 1993, when the Treasury Department terminated its "traffic cop" role in regulating their debt issuance. The subsequent rapid growth of their balance sheets fueled the housing boom of the 1990s and stimulated the growth of the securitization markets. More importantly, it created an expectation of ever-rising GSE earnings that fate-

fully led them in this decade, egged on by Congress, to chase wider margins by moving down in credit quality.

What was rationalized as a counter-cyclical force in housing finance became a pro-cyclical one—an important lesson for those now considering new, discretionary counter-cyclical policies to stabilize the financial system. Any future federal support for housing should avoid the perverse combination of private gain and implicit federal guarantees. Once Fannie Mae's and Freddie Mac's balance sheets have been placed in run-off, their mortgage guarantee functions should be merged into a single federal mortgage insurer that only guarantees fixed-rate mortgages.

Credit default swaps and the mispricing of risk. Credit default swaps, which began as a form of credit insurance against the risk of default, mutated from their origins into a form of off-track betting on credit which became a source of instability by accentuating and prolonging the credit cycle. Contrary to conventional wisdom, credit default swaps are not like equity options, because neither the CDS contract nor the underlying bonds trade with anything like the transparent and continuous price discovery that occurs in equity markets. In the absence of exchange-like market depth and transparency, it is an illusion to think that the system as a whole can dynamically hedge recovery values, even though some individual firms may be able to do so and many can enjoy short-term profits from the volatility and lack of price transparency.

The CDS market contributed to the notorious mispricing of risk from 2003 to 2007, as writers of protection (like AIG and the mono-line insurers) became the "greater fools" who mispriced their insurance premiums and ended up owning a disproportionate share of the risk without either adequate re-

serves or the ability to hedge those risks once the probability of default began to rise.[1]

Now that credit risk has been re-priced, and given the much higher leverage and lower effective cost of carrying credit risk in the CDS market compared with the cash bond market, we can see the re-insurance-like capital and premium cycle now embedded inside of credit. Just as during the upswing credit risk was mispriced too low, as writers of CDS failed to charge adequate premiums and drove down borrowing costs, now in the downswing borrowing costs are being pushed up as borrowers (whose liabilities underlie CDS) are forced to bear the insurance writers' cost of capital. There has also been a failure to disperse risk, in part, because we permitted the major credit intermediaries to write CDS without recognizing the concentration of risk this entails.

The CDS market should be bifurcated. Those names that can trade both the CDS and the underlying bond on an exchange should do so. Those contracts that are bespoke or idiosyncratic and lack sufficient demand so that they cannot be listed on an exchange should be regulated in a manner consistent with an insurance product with adequate reserves held against potential future exposure.

Counterparty exposures and too-big-to-fail. The effective treatment of counterparty trading exposures as super senior creditors under the U.S. Bankruptcy Code amendments of 2005 trans-

1. Creating a central counterparty to turn bilateral counterparty exposures into multilateral net exposures is an insufficient answer to these problems. Neither the writers of protection, nor a central counterparty, will be able to protect and hedge themselves effectively in the absence of continuous and transparent price discovery in *both* the CDS contract and the underlying bond.

formed the "too-big-to-fail" problem of our largest deposit takers into the "too-interconnected-to-fail" problem of all major financial firms. Some have claimed that we should be able to ignore intra-financial sector exposures, as not relevant to the resolution of the crisis, because they can net out without an impact on non-financial borrowers. This fails to understand the dynamic that unfolded throughout 2008 and that, to a great extent, these exposures have driven the authorities' behavior.

Trading exposures on all manner of forward contracts—whether CDS, commodity and securities contracts, or repurchase agreements—which fall within a broad definition of "qualifying financial contracts" of virtually all major financial market participants, take precedence over other claims on an intermediary's capital, effectively in advance of bankruptcy.[2] To avoid the uncertainty of a bankruptcy trustee "cherry picking" among individual trades and, thereby, unraveling gross counterparty exposures, it makes sense to permit the netting or offset of all due-to and due-from claims prior the enforcement of the automatic stay that freezes the positions of all creditors. But it does not make sense to permit these net counterparty positions to be enforceable ahead of all other creditors which effectively moves trading exposures to the top of the capital structure.

With this protection, financial firms have had a powerful incentive to convert credit or any exposure into a trading position, and to run-up and concentrate ever-larger exposures to one an-

2. This is a consequence of the "clarification" of the treatment of netting arrangements in bankruptcy contained in the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 amending various provisions of the U.S. Bankruptcy Code, 11 U.S.C. §§ 101-1532.

other. These same exposures became the self-fulfilling rationale for the authorities to feel the need to bail out firms so as to avoid the shock of having capital drained away to support counterparty exposures. What was originally intended to give greater legal certainty to intrafinancial sector exposures to make the financial system more stable perversely became an engine that destabilized the system and increased both the scale and complexity of the too-big-to-fail problem.

To get the incentives aligned to promote the stability of the financial system, we should revise the Bankruptcy Code to make net counterparty exposures subordinated to other creditors. This would create strong incentives for firms to demand bilateral margin or move trading activity into clearinghouses and exchanges. This would more effectively reduce systemic risk than either increased capital charges for counterparty exposures or the creation of a new federal resolution authority (which oddly aims to make the financial system more stable by making its capital structure less predictable). By encouraging collateralization of trading exposures, such a change would make it easier for firms to be placed in bankruptcy rather than be bailed out.

What have been the policy responses to the financial crisis so far?

Having pumped up financial balance sheets, the crisis has involved a reversal of this process. As the liabilities of banks and near-banks represent forms of money and near-money, shrinking the balance sheets of financial intermediaries is hard to do without destroying some forms of stored wealth. Policy makers have sought to de-lever the highly-levered balance sheet of our banking system with as little spillover as possible to con-

fidence, consumption, and income. Since August of 2007, the authorities have pursued four distinct strategies that roughly correspond with the phases of the crisis.

Slow it down. To ease the de-levering process, but also to respond to the anticipated decline in aggregate demand, the Federal Reserve's initial response was to lower policy rates and to begin a liberalization of collateralized lending facilities. Over time, this liberalization came to include longer terms, alternative pricing mechanisms, a wider pool of eligible collateral, provision of dollars to foreign central banks to on-lend (through central bank swap lines) and, ultimately, additional counterparties. Lower rates and expanded liquidity facilities undoubtedly offset somewhat the tightening of financial conditions. But if the problem is too much leverage, you can temporarily ameliorate but cannot solve this problem with more lending. You cannot de-lever by borrowing money, even from the central bank.

Speed it up. At year-end 2007 several major financial firms took significant write downs and raised new equity. In early March Federal Reserve officials publicly urged banks to take losses promptly on their mortgage exposures (Bernanke 2008) and to raise new equity capital (Geithner 2008). Recognition of lower principal values could have the effect of stabilizing both home prices and mortgage asset values at higher levels than might be achieved later to the benefit of both borrower and lender. The injection of new equity into banks could achieve a de-levering of balance sheets and also help absorb losses. Such an approach could have helped the de-levering process.

But the public foreshadowing of the process, by officials responsible for bank supervision, had the regrettably perverse effect of threatening existing bank shareholders with an accel-

eration of losses and a dilution of their ownership interests, the anticipation of the event being quite a different thing from the announcement of a *fait accompli*. The pronouncements by policy makers created a powerful incentive to sell shares of financial intermediaries, resulting in the destruction of approximately $200 billion in the market capitalization of the top twenty financial firms in the country during the two weeks running up to the failure of Bear Stearns. Given the predictable equity market reaction, public jawboning was not an effective means of strengthening bank capital structures.

The same unfortunate drama also played out over the spring and summer of 2008 with respect to the housing GSEs as Treasury and Federal Reserve officials urged the GSEs to raise new capital and equity markets drove their market capitalization lower.

Shift assets to the government's balance sheet. If the financial system, which contains the collective savings of households and business, cannot de-lever itself without a continued, precipitous decline of asset values, then the next logical response was to move assets to the government's balance sheet. The Bear Stearns and AIG facilities, provided by the Federal Reserve Bank of New York, have effectively transferred risk assets to the Federal Reserve's balance sheet and, indirectly via the Federal Reserve's income statement, to the Treasury. The Treasury's proposal for Congressional action that became the Troubled-Asset Relief Program (TARP) represented the major step in this direction and one that was also sound in concept but poorly executed.

The Treasury sensibly attempted to avoid the threat of dilution by underplaying the equity injection component. But the failure to effect asset transfers, which had been billed as the

TARP's principal purpose, contributed to a loss of the authorities' credibility and of public confidence. It is still hard to say whether the benefit of the additional capital injected into major firms was sufficient to offset the effects of the chaotic loss of confidence and the increase in uncertainty. The Federal Reserve's Commercial Paper Funding Facility (CPFF) is an example of another program intended to shift risks off of private sector balance sheets that was more effectively implemented.

Un-sterilized asset price support. As the Federal Reserve has continued to add to its numerous programs, their purpose appears to have shifted or, perhaps, become multi-faceted. Instead of simply absorbing risks from private balance sheets onto the public balance sheet through non-recourse lending, the Fed's actions now seem designed to influence or support the level of asset prices and to do so with an open-ended use of the Federal Reserve's ability to create money.

The Term Asset-Backed Securities Loan Facility (TALF) was designed to restore the securitization market by providing Fed financing for the purchase of securities, such as those backed by auto loans or credit card loans, as a means of ensuring the continued flow of credit. But what was first intended to support the flow of credit while the securitization market is disrupted has become a means of supporting the prices of securities, particularly now in conjunction with the Treasury's Public-Private Investment Program (PPIP), which aims to stimulate sufficient bids from investors to induce banks to sell their existing securities holdings to raise capital and reduce their balance sheets.

Finally, the outright purchases of Treasury securities, agency debt, and agency-backed mortgage-based securities by the Federal Reserve have been clearly intended to achieve a price

effect so as to lower the cost and improve the availability of credit for households and businesses as part the Fed's "credit easing" policy.

What will be the consequences of the Federal Reserve's extraordinary balance sheet policies?

To explain the Federal Reserve's policies, Chairman Bernanke has used the analogy that if your neighbor's house is on fire because of his own bad habit of smoking in bed, you will still put the fire out first and worry about incentive effects later (see Bernanke 2009a). Given the risks of a self-reinforcing, downward spiral of falling asset values, confidence, and consumption leading to further declines in income and asset values, one should have some sympathy with the "put the fire out first" approach to public policy.

But exactly which fire is the Fed trying to put out? Why does the Fed think its actions can put out these particular flames? How does the Fed know that its balance sheet will act as water rather than oxygen?

Which fire? If the Fed is going to use its power to issue fiat currency in an experimental manner, it should meet an even-higher standard of transparency. We cannot reasonably expect the Fed to choose a point on the spectrum between rules and discretion, because the Fed is operating without a sufficient base of experience to have developed rules. But the Fed should conduct itself in a manner consistent with disciplined experimentation: the Fed can clearly state the objectives of each program, articulate a theory of how particular actions are intended to achieve the specific objective, and ensure the availability of data that they and we can use to measure the consistency or

variance both of actions with theory and of outcomes with objectives.

The Fed's early policy actions to liberalize its lending facilities were articulated as serving the objective of bringing down short-term intra-bank lending spreads. These various programs rested on the theory that the provision of central bank collateralized liquidity would remove an uncertainty premium in unsecured intra-bank lending and a gradual narrowing of the short-term spreads has been observed.

This reduction in spreads may not have reflected the removal of an uncertainty or liquidity premium, or an improvement in the health of banks but, rather, only a substitution of massive central bank liquidity for intra-bank lending, effectively replacing an intra-bank market with central bank lifelines. But the Fed's clarity of purpose helped the market understand what the Fed was aiming to accomplish and helped establish the idea that an eventual decline in the use of these facilities would be a measure of success.

It has been harder to discern the specific objectives, theories, and measureable outcomes of the Fed's more recent credit easing policies, a point acknowledged by Chairman Bernanke.[3]

The broad objectives are self-evident: to stimulate aggregate demand by easing credit conditions through a mix of lending and purchases of securities. But what are the intermediate objectives? What's the theory? Does the Fed believe that it can control long-term interest rates and credit spreads by the

3. In a speech in January 2009, Bernanke noted that: "The lack of a simple summary measure or policy target poses an important communications challenge" (see Bernanke 2009b).

brute force of its balance sheet? Real rates? The term premium? A credit premium? A liquidity premium?

Central banks as Hercules. Can the Fed, through purchases of Treasury securities, compress the term premium to a level other than that which reflects the expected path of monetary policy? My prior assumption would have been not in an enduring way or by more than a margin which reflects market participants' uncertainty about the expected path of monetary policy. The immediate impact of the announcement of the Fed's intent to restart its purchases of Treasury securities appears to have lowered the yield on the 10-year Treasury by approximately half a percent. Was this an enduring change in the term premium? It is hard to say.

While open market purchases of Treasury securities might push down on real rates in the short run, the extraordinary expansion of the Fed's liabilities is likely to be putting upward pressure on the uncertainty premium and, thus, real rates. Moreover, the purpose of the Fed's extraordinary actions is to stimulate aggregate demand so as to return the economy more promptly to full resource utilization and inflation rates of 2 percent or more. All of this should push up on the expected path of monetary policy and, thus, on the term premium. So the Fed appears to be both pushing down and pushing up on the term structure at the same time. What's the optimal level? Does the Fed have a view on the level of real rates that reflects a tradeoff between those "low" enough to stimulate aggregate demand and those "high" enough to continue to attract foreign capital to finance our deficits?

Fed asset purchases could address a liquidity premium that exists because of the paucity of buyers resulting from both the "fire sale" of distressed sellers and the lack of dealer capital

to act as market makers. The Treasury's white paper which describes the PPIP makes just such a case (see Treasury Department 2009).

But market participants' balance sheets are fungible. As they sell inventory to the Fed, there is no guarantee that they will use their freed-up balance sheets for more of the assets whose prices the Fed seeks to influence or even that they will use that balance sheet capacity at all. While mortgage rates came down sharply immediately following the Fed's announcement in November of its intent to purchase agency mortgage-based securities, despite a significant increase in the level of Fed activity, and changes in many other factors since then, there has been little net change in mortgage rates since late November.

It is also hard to see how Fed purchases, or their equivalent in non-recourse lending, can compress credit premiums. While potential future losses can be shifted to the Fed's balance sheet through non-recourse lending, if there are one hundred units of credit in the market with a probability of default of *x*, and the Fed either buys or makes a non-recourse loan for half of them, the probability of default on the remaining fifty units in the market is still *x*.

Where's the exit? The Fed faces several "exit" problems. Most attention has focused on the eventual need for the Fed to withdraw the very high level of reserves caused by the expansion of the liability side of its balance sheet. While the Fed's technical ability to drain reserves when the time comes may be sufficient, or may need to be supplemented by new authority from Congress to issue longer-term liabilities, the Fed also faces a two-fold exit challenge on the asset side of its balance sheet.

Having undertaken "price-keeping operations" to compress

Treasury, mortgage, and other credit yields to affect an easing of financial conditions, the Fed will face the challenge of when and how to stop supporting asset prices. In the absence of a widely understood objective—other than asset price levels themselves—that market participants can independently assess, markets could become more volatile as participants anticipate the Fed ceasing its asset price support programs which, in turn, may cause the Fed to continue or prolong these operations.

While we know that the Fed's ultimate policy objectives are maximum sustainable employment consistent with price stability, what are its intermediate objectives for restoring the health of the financial system, independent of the level of asset prices themselves? What precisely does the Fed think of as the unusual and exigent circumstances that justify the use of Section 13(3) of the Federal Reserve Act? By what criteria will it decide when to stop?

In the Great Depression, instead of waiting to clean out the pipes of the old banking system that had become blocked, Congress created the Federal Home Loan Banks and effectively rebuilt our system of housing finance by erecting a new set of pipes which created the savings and loan industry as we knew it until the 1980s. After the S&L crisis of the 1980s, by lifting the constraints on the GSEs' balance sheets in the early 1990s instead of cleaning out the old system, we again effectively created a new structure for converting savings into investment, stimulated by the GSEs, which ran through the securitization markets. Today, the Fed is running the new set of pipes right through its own balance sheet. This puts the Fed in the odd position of competing with the banks whose cost of funds the Fed controls at the same time that it is trying to

manage the level of asset prices—creating an even more complex set of incentive effects for credit market participants and the Federal Reserve to work out in the future.

REFERENCES

Bernanke, Ben S. (2008), "Reducing Preventable Mortgage Foreclosures," speech at the Independent Community Bankers of America Annual Convention, Orlando, FL, Mar. 4, available at www.federalreserve.gov/newsevents/speech/bernanke20080304a.htm.

Bernanke, Ben S. (2009a), interview remarks in the CBS program *60 Minutes*, Mar. 15, available at http://www.cbsnews.com/stories/2009/03/12/60minutes/main4862191.shtml.

Bernanke, Ben S. (2009b), "The Crisis and the Policy Response," remarks for the Stamp Lecture, London School of Economics, London, England, Jan. 13, available at www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm.

Geithner, Timothy (2008), "The Current Financial Challenges: Policy and Regulatory Implications," speech at the Council on Foreign Relations Corporate Conference 2008, New York, NY, Mar. 6, available at www.newyorkfed.org/newsevents/speeches/2008/gei080306.html.

Treasury Department (2009), "Public-Private Investment Program," white paper, Mar. 23, available at www.treasury.gov/press/releases/reports/ppip_whitepaper_032309.pdf.