Ten Fundamental Issues in Reforming Financial Regulation and Supervision in a World of Financial Innovation and Globalization

Nouriel Roubini | March 31, 2008

U.S. Treasury Secretary Hank Paulson recently presented his proposals for a reform of the system of supervision and regulation of financial markets following the most severe – and still ongoing – financial crisis in the U.S. since the Great Depression. And soon the Draghi Commission within the Financial Stability Forum will report its conclusions and proposals for reform of the financial system to the G7 Finance Ministers.

To understand whether the U.S. Treasury proposals make sense one should first analyze what are the problems that an increasingly complex and globalized financial system faces and what are the shortcomings of the current system of financial regulation and supervision, in the U.S. and around the world. Only a detailed consideration of such problems and shortcomings can lead to the recognition of the appropriate reforms of the system. So, let us consider in more detail such problems and shortcomings of the financial system and of its regime of regulation and supervision.

They can be summarized in ten points or issues.

First, the system of compensation of bankers and operators in the financial system is flawed as it is a source of moral hazard in the form of gambling for redemption. The typical agency problems between financial firms' shareholders and the firms' managers/bankers/traders are exacerbated by the way the latter are compensated: since a large fraction of such compensation is in the form of bonuses tied to short-term profits and since such bonuses are one-sided (positive in good times and, at most zero, when returns are poor) managers/bankers/traders have a huge incentive to take larger risks than warranted by the goal of shareholders' value maximization. The potential solutions to this gambling for redemption bias are varied: restricted stock that has to be maintained for a number of years; or a pool of cumulated bonuses that is not cashed out yearly but that can grow or shrink depending on the medium-term returns to particular investments.

But even leaving aside the problem of how to change such compensation in a highly competitive labor market for talent in the financial sector, it is not obvious that the suggested solutions would fully work: for example in the case of Bear Stearns about 30% of the firm was owned by its employees and such employees had restricted stock. However this system of compensation did not prevent Bear Stearns from making reckless investment that eventually made it insolvent. Possibly this was the case because the individual compensation was not tied to the individual investment/lending decision. Still, the appropriate system of compensation of bankers/traders should be evaluated as this is now an important factor that distorts lending and investment decisions in financial markets.

Second, the current models of securitization (the "originate and distribute" model) has serious flaws as it reduces the incentive for the originator of the claims to monitor the creditworthiness of the borrower. In the securitization food chain for U.S. mortgages every intermediary in the chain was making a fee and eventually transferring the credit risk to those least able to understand it and bear it. The mortgage broker, the home appraiser, the bank originating the mortgages and repackaging them into MBSs, the investment bank repackaging the MBSs into CDOs, CDOs of CDOs and even CDO-cubed, the credit rating agencies giving their AAA blessing to such toxic instruments: each of these intermediaries was earning income from charging fees for their step of the mortgage intermediation process and transferring the credit risk down the line to other invetstors.

One possible solution to the lack of incentives to undertake a proper monitoring of the borrowers would be to force the originating bank and the investment bank intermediaries to hold some of the credit risk, for example in the form of their holding some part of the equity tranche in the CDOs or holding some of the MBS that they originate. But it is not obvious that such solutions would fully resolve the moral hazard problems faced by financial intermediaries. In fact, while the securitization process implied a partial transfer of the credit risk from the mortgage originators and the managers of the CDOs to final investors the reality is that – even with widespread securitization - banks and other financial institutions maintained a significant exposure to mortgages, MBS and CDOs. Indeed in the US about 47% of all the assets of major banks are real estate related; and the figure for smaller banks is closer to 67%. I.e. the model of "originate and distribute" securitization did not fully transfer the credit risk of mortgages to capital market investors: rather, banks, other financial institutions and broker dealers (for example Bear Stearns) did keep in a variety of forms a significant fraction of that credit risk on their balance sheet. Indeed, if that credit risk had been fully transferred such banks and other financial intermediaries would have not suffered the hundreds of billions of dollars of losses that they have recognized so far and the many more that they will have to recognize in the near future.

Thus, excessive risk taking and gambling for redemption did occur in spite of the fact that financial institutions were still holding part of the credit risk. So proposing that such institutions hold some of that risk – rather than try to transfer all of it – does not seem to be a solution that will fully resolve the problems deriving from the wrong set of financial

incentives faced by bankers and from the poor risk management within financial institutions. If the fundamental problem is one of the moral hazard deriving from the way that bankers are compensated forcing financial institutions to hold more of the credit risk will not resolve the problem that led in the first place to the poor monitoring of the creditworthiness of the borrowers and to the poor underwriting standards.

Third, the regulation and supervision of banks and the lighter – on in some cases such as that of hedge funds non-existent – regulation and supervision of non-bank financial institutions has led to significant regulatory arbitrage: i.e. the transfer of a large fraction of financial intermediation to non-bank financial institutions such as broker dealers, hedge funds, money market funds, SIVs, conduits, etc.

The problems with this financial innovation are twofold: first, some of the institutions in this shadow banking system (or shadow financial system) are systemically important. Two, most of these institutions are at risk of bank-like runs on their liabilities as they borrow in short-term and liquid ways, they are highly leveraged and they invest and lend in longer-term and more illiquid ways.

In the case of banks the risk of runs is significantly prevented by the existence of deposit insurance and by the lender of last resort support that the central bank can provide to depository institutions. Publicly provided deposit insurance is generally not warranted for non-bank financial institutions as the protection of small investors/depositors - who don't have the expertise to monitor the lending/investment decisions of banks - is not generally an issue for such non banks. But as the recent Bear Stearns episode as well as the run on and collapse of other members of the shadow financial system suggest bank-like runs on non-banks can occur and are likely to occur more often if such institutions do not properly manage their liquidity and credit risks.

While provision of lender of last resort support to non-bank financial institutions that are not systemically important is not warranted such support may be justified for the very few institutions that are systemically important. And indeed the recent Fed actions - $30 billion rescue of Bear Stearns, and two new facilities that allow non-bank primary dealers to access the Fed 's discount window and to swap their illiquid MBS products for safe Treasuries – imply that the lender of last resort support of the Fed has been now extended to systemically important non-bank institutions. This is the most radical change in monetary policy and in the role of the Fed since the Great Depression as the Fed is not suppose to lend to non-banks. Thus, if these systemically important institution now benefits from the safety net of the Fed the same regulation and supervision that is applied to banks should also be applied to these systemically important financial firms, not just in periods of turmoil (as recently recommended by Hank Paulson) but on a more permanent basis. Otherwise the moral hazard distortions of such financial safety net would be serious and severe.

But if these institutions should be regulated like banks because they are systemically important and receive the Fed's lender of last resort support one cannot have a system where the regulation and supervision of a subset of non-bank financial institutions is

different depending on whether the institution is systemically important or not. Otherwise regulatory arbitrage would lead financial intermediation to move from banks and systemically important broker dealers to more lightly regulated smaller broker dealers and other non-bank financial institutions.

Thus, while the safety net of the Fed and other central banks should remain restricted to banks/depository institutions and to – subject to some constructive ambiguity - systemically important non-banks, the regulatory and supervisory framework should be similar for banks and non-bank financial institutions: regulatory capital, type of supervision, liquidity ratios, compliance and disclosure standards, etc; they should all be similar for banks and other financial institutions. Otherwise regulatory arbitrage will shift financial intermediation and risks to other more lightly regulated institutions.

For example, the loophole that allowed SIVs and conduits to operate with little supervision and no formal capital requirements under the pretense that these were off-balance sheet units – when the sponsoring bank was providing large credit enhancements and guaranteed liquidity lines that made these units de facto on-balance sheet activities of the firm – was deeply flawed. Unless these and a whole host of other special purpose vehicles are regulated and supervised as if they were on-balance sheet units this type of regulatory arbitrage will lead again to the financial mess that the SIVs created.

Moreover, a comprehensive supervisory and regulatory regime that covers both banks and non-banks would also allow a better monitoring and assessment of systemic financial risks that, at the moment, are not properly supervised. Providing both regulators/supervisors as well as investors with the reporting and disclosure of information that allows an assessment of systemic financial risks will be essential to have a sounder financial system.

Poor liquidity risk management and the risk of bank-like runs on non-bank financial institutions has been shown to be a severe problem in the shadow financial system: the entire SIV/conduit regime has recently collapsed given the roll-off of their ABCP liabilities; hedge funds and private equity funds collapsed because of risky investments and redemptions or roll-off of short term credits; money market funds whose NAV fell below par had to be rescued to avoid a run on them; Bear Stearns collapsed because of poor credit/investment choices but also because of a sudden run on its liquidity. While banks have are fundamentally maturity-mismatched given their reliance on short-term deposits there is no reason for non-bank financial institutions to run large liquidity/rollover risk especially as they do not have deposit insurance and no access – apart from the systemically important ones - to the central banks' lender of last resort support.

Thus, an essential element of the common regulation of all non-bank financial institutions should be a greater emphasis given to the management of liquidity risk. Such firms should be asked to significantly lengthen the maturity and duration of their liabilities in order to reduce their liquidity risk. A firm that makes money only because it borrows very short, has little capital, leverages a lot and lends long and in illiquid ways is reckless

in its risk management. Such firms should certainly fully disclose to their supervisors and investors the liquidity and other risks that it is undertaking. But it should also be required to reduce its liquidity risk with a variety of tools that ensure a greater liquidity buffer.

Fourth, most regulatory and supervisory regimes have moved in the direction of emphasizing self-regulation and market discipline rather than rigid regulations. One of the arguments in favor of this market discipline approach is that financial innovation is always one or more steps ahead of regulation; thus, one need to design a regime that does not rely on rigid rules that would be easily avoidable via financial innovation.

This market discipline approach is behind the reliance on "principles" rather than "rigid" rules, the reliance on internal models of risk assessment and management in determining how much capital a firm needs, the reliance on rating agencies assessments of creditworthiness, and a key element of the philosophy behind the Basel II agreement. But this model based on market discipline has been proven vastly flawed given that the way bankers are compensated; also, the risk-transfer incentives provided by the "originate and distribute" model implies that internal risk managers are effectively ignored in good times when "the music plays and you gotta dance"; similarly the conflicts of interests of rating agencies led to mis-ratings of new and exotic financial instruments.

Thus, while reliance on principles is useful to deal with financial innovation and regulatory arbitrage a more robust set of clear rules and regulations that go with the grain of principle-based regulation and supervision is also necessary. Strict reliance on market discipline has been proven flawed in a world where bankers are improperly compensated, where agency problems lead to poor monitoring of lending, where a flawed transfer of credit risk to those least able to understand it and manage it occurred, and where regulatory arbitrage was widespread and rampant.

Fifth, even before being fully implemented the Basel II agreement has shown its serious flaws: capital adequacy ratios that pro-cyclical and thus inducing credit booms in good times and credit busts in bad times; low emphasis on the importance of liquidity risk management; excessively low capital requirements given the serious financial risks faced by banks; excessive reliance on internal risk management models; excessive role given to the rating agencies and their ratings. These are serious shortcomings of the new capital regime for large internationally active banks and depository institutions.

To reform Basel II given the current severe financial crisis is not an easy and simple task; but the urgency of this reform is undeniable. Particular importance should be given to: measures that would reduce the pro-cyclicality of capital standards, a factor that is a source of boom and busts in credit; and measures that increase – rather than decrease - the overall amount of capital held by financial institutions. Indeed, recent history suggests that most financial institutions were vastly undercapitalized given the kind of market, liquidity, credit and operational risks that they were facing in an increasingly globalized financial system.

Sixth, by now the conflicts of interest and informational problems that led the rating agencies to rate – or better mis-rate – many MBS and CDO and other ABS products as highly rated are well known and recognized. Having a large fraction of their revenues and profits coming from the rating of complex structured finance products and the consulting and modeling services provided to the issuers of such complex and exotic instruments it is clear that rating agencies are ripe with conflicts of interests. Add to this the flaws of a system where competition in this credit rating market is limited given the regulatory barriers to entry and the semi-official role that rating agencies have, in general and in Basel II in particular; the potential biases of a system where rating agencies are paid by issuers rather than the investors; and the informational problems of raters that know little about the underlying risks of new complex and exotic instruments.

What are the potential solutions to these conflicts of interest and other problems in the rating business? Open up competition in the rating agencies market; drop the semi-official role that rating agencies have in Basel II and in the investment decisions of asset managers; forbid activities (such as consulting or modeling) that cause conflicts of interest; change the model of ratings paid by issuers rather than by investors; the free riding problem of having investors pay for ratings can be solved by pooling the investors' resources in a pool that can be used to collectively purchase the ratings. Certainly rating agencies have lost a lot of their reputation in this ABS ratings fiasco; and only serious and credible reforms – not just cosmetic changes – will be required to restore their credibility in the rating business.

Seventh, there are fundamental accounting issues on how to value securities, especially in periods of market volatility and illiquidity when the fundamental long term value of the asset differs from its market price. The current "fair value" approach to valuation stresses the use of mark-to-market valuation where, as much as possible, market prices should be used to value assets, whether they are illiquid or not.

There are two possible situations where mark-to-market accounting may distort valuations: first, when there are bubbles and market values may be above fundamental values; second, when bubbles burst and, because of market illiquidity, asset prices are potentially below fundamental values. The latter case has become a concern in the latest episode of market turmoil as mark-to-market accounting may force excessive writedowns and margin calls that may lead to further fire sales of illiquid assets; these, in turn, could cause a cascading fall in asset prices well below their long term fundamental value. However, mark-to-market accounting may also create serious distortions during bubbles when its use may lead to excessive leverage as high valuation allow investors to borrow more and leverage more and feed even further the asset bubble. In either case, mark-to-market accounting leads to pro-cyclical capital bank capital requirement given the way that the Basel II capital accord is designed.

The shortcomings of mark-to-market valuation are known but the main issue is whether one can find an alternative that is not subject to gaming by financial institutions. Some have suggested the use of historical cost to value assets (where assets are booked at the price at which they were bought); others have proposed the use of a discounted cash flow

(DCF) model where long run fundamentals – cash flows – would have a greater role. However, historical cost does not seem to be an appropriate way to value assets. The use of a DCF model may seem more appealing but it is not without flaws either. How to properly estimate future cash flows? Which discount rate to apply to such cash flows? How to avoid a situation where those using this model to value asset subjectively game the model to achieve the valuations that they want as the value of the asset in a DCF model strongly depend on assumptions about future cash flows and the appropriate discount factor? Possibly mark-to-market may be a better approach when securities are held in a trading portfolio while DCF may be a more appropriate approach when such securities as held as a long term investment, i.e. until maturity. But the risk of a DCF approach is that different firms will value very differently identical assets and that firms will use any approach different from mark-to-market to manipulate their financial results.

The other difficult problem that one has to consider is that any suspension of mark-to-market accounting in periods of volatility would reduce – rather than enhance – investors' confidence in financial institutions. Part of the recent turmoil and increase in risk aversion can be seen as an investors' backlash against an opaque and non-transparent financial system where investors cannot properly know what is the size of the losses experienced by financial institutions and who is holding the toxic waste. Mark-to-market accounting at least imposes some discipline and transparency; moving away from it may further reduce the confidence of investors as it would lead to even less transparency.

Some suggest that the problem is not mark-to-market accounting but the pro-cyclical capital requirements of Basel II; that is correct. But even without such pro-cyclical distortions there is a risk that financial institutions – not just banks - would retrench leverage and credit too much and too fast during periods of turmoil when they become more risk averse. Thus, the issue remains open of whether there are forms of regulatory forbearance - that are not destructive of confidence - that can be used in periods of turmoil in order to avoid a cascading and destructive fall in asset prices. But certainly solutions should be symmetric, i.e applied both during periods of rising asset prices and bubbles (when market prices are above fundamentals) and when such bubbles go bust (and asset prices may fall below fundamentals). But so far there is no clear and sensible alternative to mark-to-market accounting.

Eighth, the recent financial markets crisis and turmoil has been partly caused by the fact that the – over the last few years – financial markets have become less transparent and more opaque in many different dimensions. The development of news exotic and illiquid financial instruments that are hard to value and price; the development of increasingly complex derivative instruments; the fact that many of these instruments trade over the counter rather than in an exchange; the fact that there is little information and disclosure about such instruments and who is holding them; the fact that many new financial institutions are opaque and with little or no regulation (hedge funds, private equity, SIV and other off-balance sheet special purpose vehicles) have all contributed to a lack of financial market transparency and increased opacity of such markets.

But private financial markets cannot function properly unless there is enough information, reporting and disclosure both to market participants and to relevant regulators and supervisors. How much reporting and disclosure - and to whom - is appropriate is a difficult question. But it is clear that for the last few years financial market have become excessively opaque in ways that are destructive of investors' confidence. When investors cannot prices appropriately complex new securities, when investors cannot properly assess the overall losses faced by financial institutions and when they cannot know who is holding toxic waste securities risk (that can be priced) turns into generalized uncertainty (that cannot be priced) and the outcome is an excessive increase in risk aversion, lack of trust and confidence in counterparties and a massive seizure of liquidity in financial markets. Greater transparency and information – including the use of fair value accounting (that, in spite of its shortcomings, is still the best way to value assets) – as well as prompt recognition by financial institutions of their exposures and losses are essential to restore the investors' confidence in financial markets.

Some specific ideas on how to make new complex and exotic financial instruments more liquid and easier to price would be to make such instrument more standardized and have them traded in clearing house-based exchanges rather than over the counter. The benefits of standardization are clear as such standardization would allow to compare securities with similar characteristics and would thus improve their liquidity. Moreover, instruments that are exchange-traded through a clearing house would have much lower counterparty risk, would be subject to appropriate margin requirements and would be appropriately marked-to-market on a daily basis.

Ninth, what are the appropriate institutions of financial regulation and supervision and the system of such regulation and supervision in a world of financial innovation and globalization? There are many alternative models that have different pros and cons.

An increasingly popular model is the one of a unique and centralized financial regulator and supervisor, as in the case of the UK's FSA where all financial policies – for banks, securities firms, other financial institutions, insurance companies, etc. – are under one umbrella. Another model is the US one where you have more than half a dozen or more of financial regulators and supervisors at the federal level and another layer of them at the state level. While some have argued that the US system because it foster beneficial competition about the best practices among different regulators the shortcoming of the US system, an incoherent set of overlapping regulators and a race to the bottom – rather than to the top – in terms of excessively deregulatory competition, have now become clear. One overall financial regulator may be too little but sixty plus of them is obviously way too many. A streamlining of such institutions and concentration of most regulatory and supervisory activities among a smaller number of institutions is certainly necessary.

Further, whether supervisory and regulatory power over banks – and possibly other systemically important financial institutions – should be kept within the central bank (as in the US) or whether it should be given to another regulator (as in the case of the UK FSA) is a difficult and controversial issue. Some worry that taking such powers away

from the central bank – while maintaining its role as the lender of last resort - would reduce the ability of the central bank to oversee financial vulnerabilities in specific institutions and in the overall financial system (systemic risk). But as long as there is a proper exchange of information between the regulator and supervisor of banks and of other financial institutions and the central bank these informational issues can be properly managed. The UK debacle over Northern Rock was caused not by the existence of a single financial authority (the FSA) but rather – in part – by the lack of coordination and proper information exchange between the FSA, the Bank of England and the UK Treasury. Thus, the UK model of a single financial regulator/supervisor is – in principle – superior to a model where such powers are fragmented among many and different institutions. But proper coordination and information exchange is essential to make this system work.

Tenth, and finally, reforms of financial regulation and supervision cannot be done only at the national level as regulatory arbitrage may lead financial intermediation to move to jurisdictions with a lighter – and less appropriate - regulatory approach. Indeed, the recent US debate on reforming capital markets was driven – before the current market turmoil – by the concerns that a tighter regulatory approach in the U.S. (say the Sarbanes-Oxley legislation) was leading to a competitive slippage of New York relative to London in the provision of financial services.

In a world of financial globalization, mobile capital and lack of capital controls capital and financial intermediation may move to more lightly regulated shores. While the idea of a global financial regulator – or a global financial "sheriff" – is for the time being a bit far-fetched a much stronger degree of coordination of financial regulation and supervision policies is necessary to avoid a race to the bottom in financial regulation and supervision and to prevent excessive regulatory arbitrage. Such international coordination of financial policies is currently occurring on a very limited scale and will have to be seriously enhanced over time. Certainly within the Eurozone a system where bank supervision and regulation occurs only at the national level while only the ECB would be able to provide lender of last resort support in the case of a systemic banking crisis or when a major systemically important cross-border institution gets into trouble is an untested model. Over time financial supervision and regulation within the Eurozone will have to move from the national level to a Eurozone-wide level.

Finally, how do the U.S. Secretary Paulson proposals for the reform of the financial system compare with the principles and ideas for optimal financial regulation and supervision discussed above? An appropriate answer requires a detailed discussion that will be provided in the near future in this forum. But in brief summary, such proposals - while representing a step forward – have many shortcomings and they overemphasize the role of self-regulation, market discipline and reliance on principles rather than rules that have miserably failed to deliver an appropriate regulation and supervision of the financial system. Given that we are still in the midst of the worst U.S. financial crisis since the Great Depression, a crisis that has shaken the foundations of modern financial capitalism, the current US Treasury proposals have significant shortcomings that don't address the core and structural financial risks and vulnerabilities that the current crisis has revealed.