



A simpler, smaller, safer, more diverse and more stable banking system is what we need!

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Executive Summary

The crisis has re-opened the question of what a good bank and a good banking system looks like. In this policy paper we present the concepts that can help us navigate our way to these answers.

There is a danger that regulators may focus excessively on the particular problems highlighted by this crisis and miss the broader picture. We contend that while the lessons from the crisis are relevant, it is important to remember that there have been more than eighty banking crisis most of them occurring before CDOs and CLOs and the Shadow Banking System came into the picture.

Banks fulfil a very fundamental role in modern economies but are inherently fragile exactly as a result of performing these core functions of maturity transformation, credit creation and credit allocation. That having been said, a number of developments – some technology driven, some regulatory, some as a result of financial liberalization and some due to development in finance theory have made the banking system more fragile and increasingly susceptible to systemic risk.

At the heart of the problem lies the approach to banking systems that assumes that focusing on higher standards and uniform regulation to ensure the safety of individual banks would make the banking system safer. In fact by reducing diversity in the banking system, this approach has made the system more brittle. There is no 'model' bank but even if there was a banking system comprised solely of 'model' banks would be a disaster. Regulators need to explicitly focus on increasing or at least maintaining the diversity of banking systems if we are to strike the right balance between diversity and efficiency.

This brings us to the question of what should banks look like and how current regulation needs to change to ensure we have better banks and better banking systems. This paper contends that

- While there is no ideal size for banks, some of the smallest ones may have excessive exposure to idiosyncratic risk and some of the largest ones may contribute excessively to systemic risk so a move towards a moderate size would be good for the banks and good for the system. Breaking up large banks while desirable may not be politically feasible so penalizing size through greater than proportionate increases in capital requirements may be the right way to encourage the largest institutions to shrink.
- While cross-border operations of banks contribute to higher efficiency, a shift towards subsidiary structures from branching might reflect a better balance between efficiency and stability. Prudential guidelines for cross border lending should also be added as an additional tool in the regulatory arsenal.

- Given the prevalence of universal banks, a Glass Steagall like separation between commercial investment banking may not be politically feasible so regulators should push for a middle ground option of having 'ring-fenced' structures within banking group umbrellas which handle 'core' functions such as deposit collection, credit creation and payment systems.
- There is an urgent need for a significant reduction in the complexity of legal structures of banks. The 2400 subsidiaries of Citicorp make it too complex to evaluate, regulate, manage and fail so regulators should institute a deadline for a mandated reduction in the complexity of banks.
- Financial products that banks markets and those they invest in should both ideally be pre-approved by a Financial Product Safety Commission but even if that is not feasible need to be part of a public register
- Bank capital requirements need to be increased significantly both in quality and quantity to make banks more robust to shocks and losses
- Capital requirements need to be made explicitly countercyclical to counter the inherently procyclical nature of banking systems. The variation between the maximum and minimum requirements needs to be large enough to counter the enormous profit incentives and competitive pressures to engage in procyclical behaviour. This would help make the banking system a shock absorber rather than the shock amplifier that it sometimes behaves as.
- Regulators need to overlay a systemic risk multiple on to capital requirements for banks since the capital required to guard against systemic shocks is likely to be significantly higher than the sum of individual capital requirements on banks used to guard against idiosyncratic shocks.
- The introduction of a leverage cap and additional prudential standards which could be calibrated to the business cycle would provide a good backstop if capital adequacy requirements are gamed by banks
- Given the advent of 'just in time' finance and the vulnerability it introduces in banking systems regulators would be well advised to re-introduce Statutory Liquidity Ratios. Mandating margining requirements and introducing central counterparty clearance for interbank and repo markets would also make liquidity more robust to shocks. We also recommend retention of some of the new liquidity windows instituted by central banks in response to the crisis.

A better banking system would be simpler, safer, smaller, more diverse and more stable.

Background

Banks lie at the heart of financial systems to the extent that without banking infrastructure in place capital markets, insurance and asset managers would not be functional. The rapid growth of the non-bank parts of the financial system including 'shadow banks' had taken attention away from banks but the financial crisis which has affected banking systems the world over had focussed minds once again on the critical nature of banking systems.

This is thus a good time to ask ourselves the questions

- what makes a good banking system
- what lessons has the crisis taught us about the problems we might have with our current system
- how might we improve the banks and the banking systems we have

Many commentators have pointed fingers at the complexity of products such as CDOs and CLOs, the non transparent nature of derivative securities, the risky nature of the shadow banking system and a host of other problems as the proximate causes for the financial crisis. Each of these criticisms is valid to some

extent but must not distract us from the truth that this not the first banking crisis but closer to the hundredth one. Had CDOs and CLOs and the shadow banking system would not have existed, we would still be prone to banking crisis. So while it is important to learn lessons specific to this crisis we must not lose sight of the broader picture which clearly says that banking is a fragile business.

The policy measures we look at to improve our banking systems must tackle this bigger issue of the inherent fragility of the banking system together with the specific causes of the current crisis as well as the evolution in banking practices over the past decades.

This paper is a concept piece which helps us think through these issues.

What does a bank do?

The word bank is used loosely and may include institutions which are very different from each other such as 1) commercial banks 2) investment banks 3) development banks etc but for the purpose of this paper and for most regulators the word 'bank' evokes the image of some special functions. All 'banks' perform this role to some extent or the other.

- 1) **Maturity transformation** – banks accept deposits from savers, guarantee to return these on demand – and use these deposits to make loans for longer durations. In doing so, banks have the potential to transform short term savings into long term investments and thus improve the productivity of the economy. Savers want to be able to access their money at any time and investors want to get funds which are committed for a long term so they can make investment decisions which pay off over the long term. By placing itself between the savers and investors the bank enables productivity enhancing investments to take place.
- 2) **Credit creation** – banks use a system of fractional reserve banking where each \$100 deposit they get is split into 2 parts. One part – usually about \$10 stays in the bank as reserves in case the depositor wants some of their money back at a short notice but \$90 is lent on to an investor. This investor in turn puts the loan money into his bank account where the bank holds on to \$9 and lends the \$81 residual to another customer and so on... This means that \$100 of savings can be converted into much higher amounts of credits which are crucial for oiling the wheels of the economy in various forms for example as trade credit or working capital. While individual banks cannot 'create credit' the banking system as a whole does exactly that.
- 3) **Credit allocation** – Demand for credit is almost always higher than even the amount that the amounts that the 'magic' of fractional reserve banking can create so banks typically have to ration credit. The decision process behind this rationing...
 - a. What is client going to do with the money?
 - b. What are the risks of project the money will go to finance?
 - c. What is the possible return?
 - d. What is the likelihood that the client will be able to return the money in full?

...is central to the long term success of modern day economies where banks not governments act play the de facto role of 'central planners'. So the quality of the due diligence that goes into this process is central to the dynamism of the overall economy.

The banking system also fulfil another central role in the economy – of providing the payment and clearing infrastructure that the whole of the financial sector and indeed the rest of the economy depends on. All of these services can broadly be grouped under the category of 'commercial banking'.

Increasingly banks perform other functions in addition to the 'core' functions discussed here. Some of these additional functions are providing

- Advisory services for the financial needs of businesses and individuals
- Transaction advisory services such as on Mergers and Acquisitions
- Brokerage services for stock market trading etc
- Capital marker dealer services such on flotation in the stock market and market making
- Banc assurance services where they offer insurance and other financial products to customers
- Asset management services where they act as agents for investing client money
- Etc

More recently, an increasing number of banks have been adding proprietary trading, where they trade in financial markets for profit on their own account, to the list of activities they carry out.

The more of these services banks combine the closer they move to the 'Universal Banking' model that is fairly dominant amongst big European banks. In the United States the Glass Steagull act had enforced a legal separation between commercial banking and investment banking activities though its repeal in 1999 opened the doors for the growth of the Universal Bank model in the US.

Why banks are inherently fragile

Liquidity risks: Banks, as several banking crisis throughout history have demonstrated, are fragile institutions. This is to a large extent unavoidable and is the direct result of the core functions they perform in the economy. When banks convert short term deposits into long term loans, they expose themselves to the danger that many of their depositors may want their money back at the same time but the bank, which is unable to call in loans it has made for long maturities, may not be able to pay. This maturity mismatch between the liabilities and assets of banks has been behind 'bank runs' where depositors panic and try and be the first ones to get their money out since they know the bank will not have sufficient liquid resources to return the money owed to all depositors.

To guard against this risk, banks were traditionally expected to maintain liquidity buffers in the form of statutory liquidity ratios and cash reserve ratios though these have been eroded away to nothing in recent decades. Thirty years ago, UK banks, for example, held as much as 30% of their assets in a liquid form but that figure had come down to less than 1% by last year.

The second bulwark against this risk is the Central bank liquidity window which provides liquidity to solvent banks when they face temporary problems. The current crisis has seen a massive expansion of the size and scope of such liquidity windows as central banks have provided hundreds of billions of dollars in liquidity support to banks.

Solvency risks: While fractional reserve banking is very effective at creating credit the fact that each bank retains only a fraction of the deposits and lends the rest makes banks very susceptible to the risk that borrowers may not be able to repay the loans they took out. Depositors may want their money back but the borrowers may not be able or willing to give the money owed to the bank.

Knowing that not all loans will be repaid and that each bank will face idiosyncratic losses on its loans, regulators have expected banks to maintain minimum capital buffers. It is expected that these are sufficient to cover the normal expected losses so depositors will not lose money.

Faced with an uncertainty whether a bank will 1) be liquid enough or 2) solvent enough to return their money when they seek it, depositors are susceptible to panic withdrawals at the slightest hint of trouble. These runs have a self fulfilling nature where the run itself can drive even a sound bank into trouble thus justifying the run and amplifying it in the process.

It is to guard against this panic that regulators in most countries now provide deposit insurance facilities which guarantee the return of all bank deposits under a ceiling amount. Typically this insurance is funded by a fee on all bank deposits and is guaranteed by the central government.

Systemic risk: Risk taking is central to the modern day economy and without risk there would be no entrepreneurial activity in the economy whatsoever. Risks come in many forms but the three major categories are 1) liquidity risk 2) credit risk and 3) market risk. A financial system which allocates risks to the institutions best equipped to handle works well.

Banks, because of their special role in credit creation and credit allocation are traditionally considered to be specialists in handling credit risk. They 'manage' this risk in three major ways

- through ex ante measures such as due diligence on the borrower and the project
- through diversifying risks across different geographies and/or sectors of the economy and/or kinds of borrowers and/or assets in the form of different financial instruments
- through ex post measures such as seizing collateral

When the banking system as a whole is threatened with losses of a large magnitude, the risk is systemic in nature and must be handled, as in the recent crisis, with the banking system as a whole. This risk could come about because of a shock to the economy which is usually both deep and broad i.e. a shallow shock such as a growth slowdown in the economy would not constitute a systemic risk nor would the breakdown of a particular small sector of the economy say scooter manufacturing. But a deep and broad based recession or a collapse of housing prices (because houses are widely owned) may have systemic consequences where the solvency of the banking system as a whole is threatened. Such shocks mean that collateral values fall, diversification is no longer useful since many parts of the economy which are otherwise diversified all suffer at the same time.

Regulators have had few tools to deal with this sort of risk as the current crisis has so clearly demonstrated. That is why central banks and governments of a number of countries needed to step in - in an ad hoc fashion (as has happened before) to help protect the banking system from collapse. We urgently need more tools to help us handle systemic risk.

Why bank collapses have negative spillovers on other banks

Because the sustainability of banks depends crucially on the confidence that depositors have in being able to redeem their funds keeping this confidence high is crucial to keeping individual banks viable and the banking system stable. Unlike other areas of an economy where a failure of a competitor is usually good for business in banking a failure of a bank can cause a serious crisis of confidence in other banks and have systemic consequences.

This can happen for several reasons

- because banks often have large and significant exposures to other banks, the failure of one bank could inflict large losses on others
- because banks often use similar systems and operate in a similar markets, the failure of one bank might raise the prospect of the same problems turning up at other banks
- because banks are increasingly involved in financial markets now, the failure of one bank might drive down the markets it operates in due to the forced selling of assets and securities
- depositors might suspect that the bank has collapsed due to systemic risks which will also affect other banks

Public policy needs to then focus sharply on preventing bank failure because this can impose costs on other banks as well as the broader economy and if failure is unavoidable, minimising systemic effects on other institutions.

The fundamental points that need to be addressed here are 1) ensuring the soundness of an individual institution against idiosyncratic risks 2) minimising the spillovers from one bank onto the broader banking system and 3) ensuring the soundness of the banking system against systemic risks.

Some problems at the core of current banking systems

Individually rational decisions can be collectively disastrous: Current regulation works on the assumption that ensuring the soundness of individual institutions automatically leads to the soundness of the system but there is a fallacy of composition here. If the market price for an asset is likely to fall, it makes sense for each bank which is worried about its soundness to sell that asset as soon as possible. However in its effort to do so, it will drive the market price lower which would inflict losses on other banks carrying the same asset which in turn will be forced to sell that same asset and so on...Decisions which are individually rational for banks can be systemically disastrous so we may need separate and complementary public policy tools to ensure institutional and systemic soundness. This is another major lesson from this crisis.

The pursuit of diversification brings uniformity: There is another fundamental conundrum at the heart of modern banking. Traditionally each bank sought to diversify so as to not to put all its eggs in one basket and thus lent to a diverse group of investors and in different sectors of the economy etc. With the globalization of finance the potential pool of assets has become much larger so banks should have become more diversified than ever before. A cursory look at their books gives this perception but this is highly deceptive.

The advent of securitization, syndication, cross border movement of financial flows, easing of restrictions on banks and sophisticated IT technology have meant that the access of banks to the pool of assets had grown even faster than the diversity in assets. Combined with access to identical correlation data sets, similar regulatory regimes, market prices and risk management systems more and more banks have 'diversified' across the same set of assets. This best understood in the extreme version where all banks seeking to individually maximise their diversity have ended up being exposed to all assets and have in the process become identical to each other. So the pursuit of diversification has brought in uniformity and the banking system finds itself highly fragile since disturbance in any asset class or problems at any institution will now be transmitted quickly across markets and institutions so the system is highly vulnerable.

Market and regulatory incentives make the system procyclical: In boom times banks come under pressure to increase lending because it seems highly profitable since defaults are very low. Rising collateral values mean that banks become even more confident in making risky lending decisions and margins come down. Booming asset prices also mean that the risk capital banks are required to set aside is sharply reduced so banks put more credit into the economy so more and more money is chasing the same assets and the price keeps rising until...

Banks which decide to be prudent are penalized by the stock markets as banks such as HSBC were in the run up to the current crisis were and the pressure to go with the flow is very high, as Chuck Prince of Citicorp captured so well when he talked about having to dance as long as the music is playing. This is the individually rational thing to do and every bank intends to be the first one out of the door as soon as the music stops. Some banks make it in time, but by the very nature of the game others will be stuck and the banking system as a whole will suffer large losses. This is what regulators need to be concerned with.

Because bank capital under current regulations such as the Basel accord is related to the 'point in time' riskiness of assets, capital requirements go down so when the downturn comes suddenly banks are capital thin, highly leveraged and exposed to declining collateral values and falling asset prices so depositors can easily lose confidence in the banking system. Banking crisis almost always follow booms because it is during these booms that systemic risks are built up.

As we have seen, for competitive reasons it is difficult for banks to avoid falling into the procyclical trap. Market discipline is also procyclical so the only way to reduce the build up of systemic risk and the likelihood of banking crisis is for regulators to impose discipline from outside.

Systemic risks have increased in recent years: There is a strong likelihood that the changing nature of banking systems has meant that systemic risk has increased. Some of the reasons behind this are:

- An increasing number of banks now have similar business models and similar portfolios of assets and are subject to similar regulations and use similar risk management systems so diversity in the system has been reduced. Also, this similarity means that depositors and might be quicker to interpret the failure of one bank to signal that trouble may be brewing in other banks through similar lapses in risk management etc
- Banks have large and increasing degree of interconnections and cross exposures to each other especially through the interbank and repo markets for funds so the failure of one may inflict large losses on other banks. These short term sources of funds became increasingly important in the run up to the crisis funding as much as 25% of assets in the UK for example.
- The increasing practice of syndicating loans amongst several banks as well as securitization of loan books meant that many of the large banks in particular were exposed to similar risks and were closer to having the 'universal portfolio' discussed above.
- As information has become cheaper and technology more sophisticated more and more banks rely on standardized measures of risk such as credit scores for individuals and credit ratings for corporations etc so that bank due diligence and relationship banking have been on the decline which has resulted in banks making similar lending decisions and lower diversity in the markets
- The banking system has become increasingly market oriented where banks no longer just make loans to hold them to maturity but increasingly trade in market instruments and securities and hold active trading books in, for example, securitized loans. They also increasingly use market prices such as credit ratings and credit default swaps not just in making decisions about assets but also in deciding how much capital to hold. This has made the viability of banks far more

sensitive to market fluctuations and their behaviour more procyclical increasing both their contribution to systemic risk as well as the vulnerability to it.

What makes a good banking system?

Up until now we have looked at some of the fundamental problems that afflict banks and the banking system so the next part is dedicated to discussing what policy measures can help us best tackle these problems. Before we do that, it might be useful to define what a good bank and a good banking system should look like.

A good banking system is one which

- Is effective at reallocating capital from savers to investors
- Does this efficiently with low deadweight costs to the economy
- Allocates risks from those who do not have the capacity to manage it to those who do
- Is resilient to shocks and provides shock absorption capacity for the economy
- And does not depend on regular doses of taxpayer subsidy

Within such a system a good bank is one which

- Lends to those who others don't lend to and does not lend to those everyone else lends to
- Strikes the right balance between efficiency and safety
- Aligns the incentives of stakeholders to the overall long term success of the economy
- Minimises the risk that it poses on other financial institutions and the economy
- Performs well at its core functions of maturity transformation and credit allocation

These are the criteria we use to briefly lay out our suggestions for improving the functioning of banks and banking systems in this concept paper.

What are the policy suggestions for making a good banking system?

What size should banks be?

Banks come in all sizes, from local community banks to behemoths such as Citicorp. Is there an ideal bank size? The best answer to this probably no. However, this crisis has clearly demonstrated the systemic risk posed by the behemoths which are 'too big to fail'. They enjoy an implicit public subsidy since depositors and investors know that governments are unlikely to let them go under. Another point to be noted here is that the larger the bank, the more likely it is to come close to having the 'universal portfolio' we discussed earlier in the paper which means that it can significantly increase systemic risk. Very large banks are also able to engage in regulatory arbitrage which is both a competitive advantage and adds to systemic risk. Interconnectivity goes up exponentially with size so many of the largest banks also pose high systemic risk by being 'too interconnected to fail'.

While it is clear that there are no numerical cut off points for when a bank is too big, the smell test of whether regulators in a country can afford to let it go under if it runs into trouble is usually a good one. Having too large a share of the market is usually another indicator that the bank is too large. Banks have been consolidating and growing larger for several years now and this trend has increased drastically in the crisis when many shotgun marriages were arranged to save weak banks. Splitting large banks up by decree or giving them time to spin off parts of their operations are both possible policy options but are

likely to face significant opposition. Penalizing banks for size by requiring them to keep extra capital which increase more than proportionately with size would be a good market based mechanism of achieving similar results as there will be a size beyond which shareholders will force the bank to break up to maintain reasonable returns on equity.

Stricter application of anti-trust laws and ceiling of say 10-20% on market shares in loans or deposit taking would also be good policy options to pursue simultaneously.

At the other end of the spectrum, thousands of small, local and community banks exist around the world. What about them? Is there something such as too small?

Such small banks, for the most part, have a heavy geographic or sector concentration both in the deposit as well as loan portfolios. That means they have high idiosyncratic risks and events such as the closure of a local factory and associated unemployment can spell disaster for the bank. Also, a small size means high fixed costs so these banks may not be very cost efficient. Cosy ties, where the bank manager knows everybody also increase the chances for lending that may be based on non commercial criteria and can increase the risk to the bank.

Balanced against these disadvantages is the fact that 'a good bank is one which lends to someone no one else lends to but not to those who everyone else is lending to'. A local bank is in a strong position to have superior knowledge of its niche based and this information based lending is critical to good banking decisions.

Small banks can come together in groups, make effective use of correspondent banking arrangements and use loan pooling etc to both reduce operational costs as well as increase the diversification of their portfolios so they can garner the advantages of size whilst limiting the downside. Still, there is a trade-off between efficiency and small size and moderately sized banks which can straddle both local informational advantages and have a diversified portfolio and more efficient cost base probably work best.

What is important is not just the size of banks but also the size of the banking system as a whole. There were clear indications that banking systems, which can be best thought of as facilitators for the real economy, became too big. In the US for instance, the financial sector brought in a full 40% of total corporate profits. In many other countries the overall size of credit in the economy and banking assets grew to unprecedented levels as a multiple of the GDP.

While in many of the emerging economies and developing countries there is a clear need for banking systems to grow there is a strong agreement that in countries such as the UK, US and Switzerland the banking system has become too big and needs to be shrunk. While the differing local economic structures make it impossible to pass judgement on what the benchmark for an ideal banking system should be, this issue needs to near the top of the agenda of local regulators and policy makers who incentivize size contractions through policy measures such as increased capital charges.

What can be done to reduce the threats of liquidity drying up?

Liquidity for banks can come either from the funding side or the asset side. Traditionally banks were meant to keep a pool of liquid assets in the form of statutory liquidity ratios for example. As banking became more market oriented and markets for the syndication, securitization, and short term interbank borrowing developed, banks became increasingly confident that in the event of depositors wanting their funds back at a short notice, the bank would be able to sell or pledge some of its long term assets to

other banks or financial actors to raise the money. Since holding liquid funds has an opportunity cost in terms of lower returns than on longer term assets, the liquidity funds held by banks went down drastically.

This crisis highlighted the dangers that lie with this 'just in time approach'. Asset markets including that for interbank lending can dry up as they did in this crisis. This happened both because banks were trying to hoard liquidity – a rational response to the uncertainties of the crisis and because they were unsure about the solvency of their counterparties. Central banks had to step in to the tune of hundreds of billions of pounds to provide liquidity support.

Banks will, as we discussed earlier in the paper, always be subject to some form of liquidity risks because they perform maturity transformations but the risks they are taking on under the 'just in time' approach seem unacceptably high. Three simultaneous policy changes need to be considered.

Liquidity buffers in the form of statutory liquidity ratios and cash reserve ratios need to be re-introduced though perhaps at moderate levels. This will no doubt reduce the availability of long term funds somewhat but the advantages in terms of a more resilient and robust banking system would make such a measure worthwhile.

Combining improvement of funding liquidity with measures such as a greater use of centralized counterparties and margining requirements for interbank asset markets and repos etc would ensure that even if there are problems in the banking system the asset markets would not dry up so quickly since counterparty risk would be more limited than it was in the run up to the crisis.

A third policy measure which would help would be to retain some of the expanded (in terms of size and scope) liquidity windows provided by central banks the world over.

How much capital should banks have and what form should this take?

Banks are currently required to maintain capital primarily to guard against idiosyncratic risks. This is in line with the current regulatory regime and is underpinned by the flawed philosophy that by focusing on keeping each bank individually safe, the banking system would stay safe.

The crisis exposed serious flaws in the capital regime for banks. Some of the key problems were

- There was too little capital in the system to handle risks of systemic proportions
- The quality of capital, where equity was increasingly substituted by subordinated debt and more hybrid instruments, was very poor. Shareholder equity can act as a buffer if the bank faces losses and allow it to go on doing business. However capital in the form of debt can only be set against losses after a bank has failed so from the perspective of financial stability equity capital is far superior.
- The capital requirements were procyclical and added to the build up of the asset price bubble and the subsequent burst. Because capital requirements were linked to market prices such as credit ratings and the prices of securities on trading portfolios they went down as the market boomed allowing banks to pump more credit into the economy which fed the asset price bubble even more. This was clearly not sustainable. Similarly capital requirements amplified the crash as losses and ratings downgrade eroded capital just as more of it was needed damaging confidence in the banking system.
- There were no additional capital buffers for handling systemic risk

- The capital requirements for trading books and off balance sheet exposures were too little.
- Banks contributing to systemic risk were not penalized for this contribution.

There are a number of policy solutions that need to be implemented in parallel to deal with the capital adequacy problems exposed by this crisis.

- The quantity of capital needs to increase. There is recognition that the 8% floor specified by the Basel Accord is too low. So countries such as Switzerland have already legislated for a capital increase without even waiting for an international agreement that is likely to come next year.
- The quality of capital needs to increase. When push came to shove the 'hybrid' and 'subordinated debt' instruments that counted as capital were found to be seriously wanting. These do not help keep a bank facing losses in business which is a central purpose of having minimum capital requirements.
- It is clear that the banking system is full of elements which make it more procyclical and result in a much greater build up of unsustainable booms and accompanying systemic risk. To counter this procyclicality, it is highly recommended that regulators introduce countercyclical capital requirements which help dampen the business cycle and increase financial stability. The countercyclical element needs to be very strong to resist the pressures from large potential profitability during booms. A doubling of capital adequacy from bust to boom seems to be a good benchmark that may be refined if it proves inappropriate.
- While designing capital requirements, it is imperative for regulators now to not only consider the safety of the individual institutions but also of the banking system as a whole. In the event of a systemic shock the capital required in the banking system might be significantly higher than the capital that is adequate only to help banks withstand idiosyncratic risk. So bank regulators might need to add a multiple dependent on some overall measure of systemic risk to normal capital requirements.
- While most of the discussion thus far has had to do with the capital adequacy for a bank's traditional operations there were certain elements of bank operations such as 1) the trading book and 2) off balance sheet exposures where the capital requirements were even less adequate than those for the bank loan books. Increasing these capital requirements and minimising off balance sheet positions in the interest of greater transparency is a good measure for increasing systemic stability.
- Certain aspects of banking add more to systemic risk than others. In the interest of fairness using the polluter pays principles as well as to build up more resilience in the system and disincentivize risky behaviour it is necessary to penalize these systemic risk enhancing aspects. Size, degree of interconnectedness, extent of maturity mismatches etc are all aspects of bank operations that should attract an additional systemic risk levy.
- Banks are good at gaming regulation so there is a danger that risk based capital adequacy requirements could be gamed. To provide a backstop against this possibility banks should be subject to a leverage cap.

Increasing capital requirements will no doubt increase the price of credit and reduce its availability but ever greater amounts of credit in the economy are not good. There are optimal levels of credit for economies at different stages of development and it was clear that there was too much credit chasing too few assets and investment opportunities in the OECD countries before the crisis hit. So a reduction in the availability of credit in the medium term is likely to be economically beneficial by killing off excessive

speculation and asset price bubbles whilst still allowing deserving productivity enhancing investments to go ahead.

Should bank functions, structures and products be simplified? How?

As we discussed earlier in the paper, bank functions can be divided into two categories 'core' and 'other'. The more of the functions that banks fulfil in the 'other' category the closer they come to the universal banking model. In the financial crash that led to the great depression in the United States there were widespread bank failures and millions lost their life's savings when banks which were using depositor funds to speculate in the stock markets collapsed as the stock market nosedived. There was a lot of outrage about the fact that depositor funds were used for risky speculation instead of being used for making safer and more conservative investments. This led to the enactment of the Glass Steagall act which forbade deposit taking institutions from carrying out investment banking business. This separation was eroded over time both in Europe where universal banks have been expanding in size and scope over decades and in the US particularly since 1999 when the act was repealed.

Few depositors have lost their savings in this crisis thus far but that is only because governments have stepped in – in a big way to guarantee much larger amounts of deposits than previously covered and also have pumped in hundreds of billions of dollars to prop up fragile banks such as Citicorp.

The practice of using depositor funds to make risky investments was widespread in the run up to this crisis as well and several academics and regulators have suggested that a re-enactment of the separation between commercial and investment banking might be needed. Because depositor funds are insured and can be withdrawn on demand they are usually less expensive for the bank than say having to take on long term loans. So banks have a strong incentive to put these funds into high risk/ high potential return investments to increase profits.

Using these funds to speculate in non transparent and potentially risky markets such as OTC derivatives is particularly dangerous since the non transparent nature of the exposure makes the banks liable to a loss in confidence even when it may not actually have suffered large losses.

So, there is a strong need for some form of separation of the core 'utility banking' functions from at least the most risky and the least transparent forms of bank services. This could be done in the old Glass Steagall way but given the existence of powerful universal banks is likely to be politically difficult. A middle option which allows banks to provide the core and the non-core operations under one umbrella but keeps the deposit taking part and other 'core' functions such as payment and clearing services legally and financially ring-fenced within the umbrella structure may be a good one to pursue. While banks and the banking system would then be able to tap into most of the advantages that come from cross-selling services and other economies of scope and offer their customers 'one stop solutions', such rules would increase financial stability in the banking system.

Another development in banking has been the massive expansion in cross border operations. The somewhat related phenomenon of the rapid rise in the complexity of the corporate structures of banks also deserves our attention.

Banks try and internationalize for several reasons

- To access new markets
- To be able to arbitrage capital between different countries

- To be able to arbitrage regulation across different countries

In trying to arbitrage capital across countries banks borrow from countries where funding is cheap and lend in countries where interest rates are higher. This helps garner advantages of free capital mobility for countries and adds to economic efficiency and productivity gains. However, as the crisis has demonstrated, when this is not accompanied by responsible lending and rigorous risk management, it can threaten the economies of whole countries. The 'carry trade' – borrowing in low interest currencies and lending in high interest currencies or countries accompanied built up a significant amount of systemic risk. The un-hedged foreign currency loans sold by banks in most Baltic States exposed them to economic disaster.

This form of capital arbitrage should not be banned because it performs a very important economic function but needs to be regulated more closely. Prudential limits on foreign currency lending, for example, may be a good idea.

The international operations of banks, brings another issue into sharp focus – what is the best way to regulate these operations. While current patterns in banking involve a mix of branches (where there is no local incorporation) and subsidiaries, the bad experience with managing problems with cross border banks such as the Icelandic banks, Dexia, IKB and Fortis has made the subsidiary structure much more attractive to regulators. This ensures there are local capital requirements, liquidity buffers and that home country regulators have more control over the operations of international banks.

However mandating subsidiary formations for local operations will introduce frictions in the cross border movement of capital and is likely to somewhat lower the efficiency of banking systems but will bring about higher financial stability.

Banks actions directed towards arbitrating regulations, especially through using operations and legal structures in laxer regulation jurisdictions including offshore tax havens, are a matter of more serious concern. As many commentators have noted, it was not that the right regulation was missing in the run up to the present crisis, but it was that it was not applied and that it was avoided.

Lehman brothers had 330 subsidiaries including many in tax havens and the behemoth Citicorp has more than 2,400. Banks on average have 3-4 times the number of subsidiaries as equivalently sized non bank corporations. While a significant proportion represent legal separations along geographic jurisdictions and functional areas a very large number were brought into existence purely for regulatory arbitrage.

These complex legal structures mean that ascertaining 'who owes what to whom and who the counterparty for particular deals is, and what regulation each of the subsidiaries is subject to and where the risks are held and whether the bank is safe' is made far more difficult for both investors as well as regulators. These uncertainties are reflected by the fact that bank ratings between Standard and Poors and Moody's are far more divergent than for other non banking corporations. Banks stocks are more volatile and priced at lower price to book ratios and valuations differ significantly amongst analysts reflecting the fact that the complexity of the structures creates uncertainty about the true nature and worth of bank operations.

This 'non transparency' may appear relatively harmless in boom times but as we saw in the current crisis can be completely disastrous if confidence in the banking system is shaken. Both for the reasons of increasing transparency as well as to reduce regulatory arbitrage, regulators need to urgently ensure that bank legal structures are simplified drastically.

The existence of large cross border operations and complex legal structures creates significant problems for the authorities if they decide to let banks go under. 'Banks are international in life but national in death'. The bankruptcy of Lehman Brothers is by far the most complex bankruptcy in history and brought up significant issues in terms of cross border capital and liquidity management.

Regulators have now started asking banks to make 'living wills' which are expected to provide a clear map for how they could be wound up in the simplest way possible. Making credible 'living wills' would mean that banks would necessarily need to simplify some of the complex legal structures. Making banks being off balance sheet exposures on balance sheet will also simplify structures. The fact that regulation across jurisdictions now more likely to meet a 'global regulatory floor' standard the opportunities for regulatory arbitrage are also likely to be reduced.

All of these are likely to drive a simplification of bank structures but it is such an important objective that it needs to be an explicit goal of banking system reform.

Another problem that has come to light in this crisis is the issue of product complexity. Banks increasingly marketed ever more complex products to customers including retail depositors. They also invested in increasingly complex securities. When the crisis hit, both aspects raised serious concerns and drove losses amongst customers and banks alike.

Because the financial sector does not have patents, bank products are easy for other banks to copy so profit margins can get eroded quickly. That is why banks have an incentive to sell ever more complex products which are harder to copy so the banks can retain the competitive edge for longer.

The more complex the product, the greater the information asymmetry between the bank and its customers so profits margins can be higher. This incentivizes banks to sell ever more complex products to customers even when these may not fulfil customer needs and may be unsuitable for them.

Banks themselves are more likely to invest in complex products because these can help avoid regulation by increasing the asymmetry between the bank and regulators.

Hence there are natural drivers in the banking system for ever increasing product complexity – which decreases transparency, introduces non-linearity in the system and increases systemic risk. This would need to be tackled explicitly through the need for product registration and perhaps even pre-approval from a 'Financial Product Safety Commission'.

Do banking systems need to be made more diverse? How can we do this?

Throughout history banking systems have exhibited substantial diversity. There have been community banks, local savings banks, national banks, agricultural banks, industrial banks, development banks and a whole host of other institutions with operations of substantially different scale and scope.

However, most commentators recognize that this diversity has been on the decline for several decades now. Advances in ICT, which give every bank access to large swathes of similar data have been one factor driving the secular decline. The advantages of having local pools of relationship based information have been drying up.

The combination of advances in ICT as well as the liberalization of financial flows have also made it easier to achieve economies of scale and scope and are factors that have driven bank consolidation. The

adoption of capital adequacy standards especially under Basel II further reinforce the competitive advantage that big banks enjoy over smaller ones so have further accelerated consolidation in the banking sector.

Developments in financial theory and mindsets such as increasing diversification, using 'modern' market price and data based risk management practices and the pursuit of similar models have driven more and more banks to behave increasingly like each other.

The philosophy of regulation which has driven an increasing standardization within and across countries has probably been the biggest culprit in the destruction of diversity in the banking system. There is a fundamental problem at the heart of this thinking which assumes that getting all institutions to meet minimum standards would mean that the banking system as a whole would become more stable.

However, as this crisis has so strongly demonstrated, a reduction in diversity can make the financial system much less resilient to shocks since all banks react in the same way and amplify the shock. In peacetime, this erosion of diversity drives procyclical behaviour and contributes to the build up of systemic risk.

Diversity in bank behaviour can come from several sources such as

- Differences in funding structures
- Differences in geographic scope of operation
- Differences in functional scope
- Differences in regulation
- Differences in incentive structures of managers
- Differences in risk management systems

Regulators would be well advised to make enhancing banking system diversity an explicit aim of regulation rather than reacting in a knee jerk manner to push for ever higher and ever more uniform bank standards and models.

There is no 'model bank'. Even if there were, a banking system comprised entirely of 'model banks' would be incredibly brittle and pro-cyclical and certain to fail repeatedly.

We need the whole panoply of banks from the small local ones to those that occupy a sector niche to those that span borders. A diverse banking system is a good banking system.
