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**THE ROLE OF POLICY AND BANKING SUPERVISION IN THE LIGHT OF
THE CREDIT CRISIS**

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Introduction

The zeitgeist of finance over the last decade was “marketization”: the switch from bank finance to market finance² as loans were originated and securitized by banks, rated by agencies and then relocated to investors. A cynic may say that a better description of what went on was regulatory arbitrage. Risks were transferred, on paper at least, from the regulated sector to the unregulated sector.³ But it is important to recall that bank supervisors in Europe and elsewhere welcomed the marketization of financial risk. They saw it as a way of spreading risks. They saw risks being removed and distributed away from a small number of large and systemically important banks to a large number of investors. The marketization of finance was as much a conspiracy of the Gnomes of Basle as it was of the Gnomes of Zurich.⁴ It is part and parcel of the approach to banking embedded in the new Basle accord on credit risk (Basle II).

The marketization of risk was associated with the greater use of market prices in the measurement and control of risks—a feature of the new Basle accord on capital adequacy (Basle II). During quiet or normal times, market-based finance appeared to offer greater liquidity, lower risk premium and sophisticated risk management incorporating high frequency reporting. All this reinforced the view of bank supervisors that this was the future and that the future was bright. Nonetheless, the reason why we regulate the banking sector, above and beyond standard corporate regulation, is that financial markets often fail, with disastrous consequences for others—as we are seeing with the 2008 crisis.

When the financial markets failed to accurately assess credit risk, given the pre-eminent role of market price in the measurement, control and reporting of risks and

estimation of capital adequacy, it initially led to a redoubling of imprudent lending and later to the inevitable, systemic crash. There had been warnings before⁵ that the marketization of risks contained a Faustian bargain: greater liquidity, lower risk premia and the appearance of sophisticated risk management were delivered early, to the detriment of future resilience of the financial system (Persaud, 2008). Bank supervisors brushed these warnings aside at the time.

One of the consequences of making market prices central to the management and control of risks and capital is that when markets fail and prices disappear, the authorities are left with no option but to intervene to set a floor in the market price of assets. They find themselves guaranteeing purchases and prices of assets they would not normally purchase because of the level of market and credit risks. The marketization of finance has been associated with a switch in the role of the central bank, from lender of last resort to buyer of last resort.⁶

Beneath the wreckage, there is a coherent system at work. In the responses of bankers and regulators to the crisis⁷, there are only now some signs of an amendment to the system. The system is as follows. Risks are marketized. This is associated with the increasing use of market pricing in accounting and risk management. During the calm, liquidity is strong, risk premia falls and in response, there is market pressure for innovations that widen the inclusiveness of finance (the securitization of subprime mortgages was part of that process). But every five to seven years, markets fail. In the ensuing crisis, through the role of prices in valuation and risk management, declines in prices feed further declines in prices. The government is inevitably forced to underwrite risks in the financial sector until such time as there is a period of calm, and the cycle

repeats itself. Some policy makers argue that the greater benefits from those seven years or so outweighs the costs of the crisis year. There is a legitimate trade-off to consider, however, I am not convinced and the crisis of 2007-9 seems particularly costly relative to the benefits.

The full consequences of the Credit Crunch, which started in 2007, are yet to be realized. Estimates of the first round effects of losses amounted to around US\$250bn in the middle of 2008, but these figures are likely to rise.⁸ And then there are the likely and potentially more serious second round effects. During a surprisingly lengthy period from July 2007 to July 2008, banks lost confidence in other banks, hoarded liquidity and distanced themselves from each other. It is therefore likely that private individuals will have a lasting loss of confidence in the banking sector, which may lead to a reduced willingness to use financial instruments to save, with negative spillover effects for investment in the productive sectors. Recall that the housing market boom in the United States and Europe was partly a result of investors eschewing mutual funds after the dotcom bezzle of 1999-2001. It is a serious measure of public disillusionment with financial markets when real estate agents are more trusted than fund managers. It would be reasonable to expect banks to respond to recent developments with a lower risk appetite and reduced lending which in turn would threaten levels of economic activity more generally. Genuine initiatives to make the benefits of finance more inclusive will also likely fall victim to this new conservatism.

This litany of woes does not include issues of moral hazard, as the authorities take necessary hasty efforts, deep in the fog of war, to preserve the financial system. Bad banks as well as good banks will be saved by the rising tide of government guarantees.

Furthermore, today, taxpayers are underwriting risks, created by bankers who paid themselves substantial bonuses before retiring. There is a widespread suspicion that these bonuses are often lightly taxed, offshore. It is understandable, therefore, that the political response to the credit crunch is fuelled by moral outrage. The clear and present danger is that this understandable moral outrage leads to a regulatory response that is too distracted by the ethical failure of the private sector to deal effectively with the government failure.⁹ The scale of today's credit crunch could have been avoided by central bankers and supervisors, who had both sufficient information and the necessary instruments to respond, but failed to do so for a variety of reasons. These reasons include an absence of political will and a convenient intellectual entanglement with the prevailing zeitgeist of finance.

Systemic Risks and the Role of Monetary Policy and Bank Supervisors

Over the past ten years, bank supervisors have been given so many things to do that their real purpose has been lost. The mission creep includes anti-money laundering and anti-terrorist financing. These are important initiatives that need to be undertaken by somebody, but they are pervasive activities and they have encouraged pervasive regulation. Among the regulated sectors, financial regulation is heavy-handed, expensive and ill focused. A measure of that ill focus is that supervisors were able to look at Northern Rock in the U.K. and Deutsche Industriebank (IKB) in Germany, just a few months before they failed, and give them a good mark for compliance, when they were quite transparently engaged in the systemically dangerous activity of borrowing short-

term paper from the international money markets and lending over 100 percent loan-to-value mortgages.

The principal reason why we regulate banks above and beyond the way we regulate other industries is that bank failures can be systemic. If the high street shoe store fails, surrounding shoe stores profit. Shoe store failures are not systemic. If the high street bank fails, the loss of confidence and panic could cause a run on the other banks. The reason why banks are systemic are many, but most importantly, banks run substantial liquidity risk (banks borrow money over the short-term, but lend it over the long-term) and as a bank deposit at one bank can be collateral for other loans, the failure of one bank can directly undermine the solvency of another. Today's regulation was born out of the devastating consequences of bank runs and the resulting systemic failure of payments and credit systems in the past.¹⁰ Deposit insurance is specifically designed to reduce the risk of systemic bank failures.

Because the wider effects of one bank's failure are far greater than the private costs to the owners of a single bank failing, banks left to their own devices would "underinvest" in preserving systemic stability. They would put aside less capital than they would if the focus of their concern was not the viability of one institution, but the risks of the failure of one institution leading to systemic failure. This is a serious externality. As a result, banking regulators should be focused on the systemic activities of financial institutions. Regulators should intervene so as to cause bank shareholders to invest more in systemic stability than they would otherwise do (thereby internalizing the externality). Banking regulation has lost sight of this goal. It does not draw clear distinctions between systemic and non-systemic activities. It tries, oddly, to mimic what a "good" bank would

do on its own¹¹, motivated purely by private motives, and it encourages homogeneity of behavior through common standards that adds to systemic risks. Such banking regulation may be in the narrow interests of bank shareholders—and may be seen as protecting them against what might be in the interests of managers with their peculiar incentive structures—but not of the system and its other stakeholders.

The principal source of systemic crises is the economic cycle. Financial crashes do not stem from the random failure of an institution—though this is the implicit assumption of banking regulation. Crashes follow booms, and the credit cycle is often an appendage of the economic cycle. Consequently, any focus on systemic failure has to put the credit and economic cycles at the heart of financial regulation—moderating excesses in a credit boom and the following credit contraction. Yet in banking regulation today, in the European Capital Requirements Directive (CRD) and Basle II, the economic cycle is absent.

Regulators often respond to this criticism by saying two things. They either say that it is up to monetary and fiscal policy to address the economic cycle or they say that national supervisors can impose contra-cyclical measures under Basle II. Pillar II of the new accord provides for discretionary supervisory intervention if supervisors feel that banks are not sufficiently capitalized. Neither response is satisfactory.

Dealing with the Cycle: Institutional Arrangements

The problem with relying on monetary and fiscal policy to address booms and crashes is that the level of interest rates or taxes required to curb an asset market bubble in one

sector of the economy would cripple the rest of the economy. Imagine a housing market bubble, where home prices have risen by 20 percent per year for the past few years and they are expected to continue doing so, where loan-to-value mortgages are close to 100 percent and the market is well developed with home owners regularly re-mortgaging. Raising interest rates from 4 to 8 percent would push the manufacturing sector into recession, but would do little to curb the housing boom. A rate hike of this order may even increase the flow of funds into housing as it becomes one of the few sectors of the economy able to grow amid these higher interest rates. It would take interest rate levels closer to 20 percent to definitively curb the housing boom. But that would eviscerate the economy. More effective would be a regulatory intervention that, through direct or indirect levers, lowered the permitted loan-to-value ratio of mortgage lending.

In the European context, the scope for monetary and fiscal policy to address the pumping up, and subsequent deflation of asset market bubbles is even more limited than in the United States. The European Central Bank (ECB) has an uncompromising focus on inflation, and fiscal policy is limited to some extent by the 1997 Stability and Growth Pact. That is not to say that monetary and fiscal policies have no responsibility in managing the economic cycle. At a minimum, monetary and fiscal policy should try not to encourage the creation of asset market bubbles. In this regard European macroeconomic policy has scored better than U.S. macroeconomic policy. Nevertheless, the ECB and national treasuries cannot shoulder the burden of reducing the financial excesses of the credit cycle. The problem is that bank supervisors have not been very good at taking on this burden either.

Supervisors have discretion to raise capital charges on banks if they feel a bank is not sufficiently capitalized. But this discretion is seldom used for political reasons.

It was former Fed Chairman McChesney Martin who argued that the authorities should re-move the punch bowl before the party gets going. But parties are fun. Underpaid supervisors cannot easily squeeze past powerful and rich lenders, borrowers with seemingly worthy projects and politicians taking credit for the good times, to take away the bowl of punch¹² (Goodhart and Persaud, 2008).

Supervisors must shoulder the principal burden of dampening the worst excesses of a credit cycle, but they need some rules to help them resist the substantial political pressure for doing nothing.

One example of a contra-cyclical rule would be to have the minimum capital adequacy requirement for banks that is not fixed across time, as is currently the case, but rises and falls with the cycle. One appropriate measurement of the cycle would be the rate of growth of bank held assets—this moves pro-cyclically. We could start off with a capital to risk adjusted assets ratio of 8 percent.

Rather like income tax each bank would have a basic allowance of asset growth which could be linked to the inflation target, the long-run economic growth rate, and some allowance for structural changes in the bank lending/GDP ratio. This formulation allows regulators and central banks to better link micro to macro stability. Growth in the value of bank assets would be measured as a weighted

average of annual growth. To emphasize more recent activity, exponential weights could be used. Growth above the basic allowance over the past 12 months would have a 50 percent weight; growth over the preceding year would have a 25 percent weight and so forth until 100 percent is approximated. Regulatory capital adequacy requirements could be raised by 0.33 percent for each 1 percent growth in bank asset values above the basic allowance. For example, if bank assets grew at a rate of 21 percent above the growth allowance, minimum capital requirements would rise from, 8 percent, to 15 percent¹³ (Goodhart and Persaud, 2008).

One of the other implications of putting the credit and economic cycle back at the heart of financial regulation is that the distance between the central banks and bank supervisors should be narrowed further. Both institutions should house representatives of the other and new committee structures that better integrate macro financial and micro financial issues should be constructed.

The integration of banking supervision among the ECB, Federal Reserve and Bank of England, though likely to be politically unpopular, should also be reconsidered. If systemic risk is the key focus of banking regulation, as it ought to be, it is best done close to the institution with the greatest systemic expertise and operational capacity. Moreover, key components of dealing with a systemic crisis, deposit insurance or a public lender or buyer of last resort are not within the scope of supervisory institutions but within the realm of the central bank, either as an agent for the Treasury, an advisor, a principal or all three.

Systemic Risk and Deposit Insurance

The experience of the U.K. in September 2007 was that the existing deposit insurance arrangements had become “out-of-date”. The level of full coverage had become too small for the average depositor and the “haircut” that depositors suffered on larger amounts contributed to the panic that led to the run on Northern Rock and other U.K. building societies. The government’s response was to effectively announce a 100 percent guarantee on all deposits.¹⁴ It is not clear how this would work formally, but it would seem that a 100 percent guarantee on depositors is required today to halt incipient bank runs. The idea of “co-insurance” between the taxpayer and the depositor has been found wanting.

There are clear moral hazard issues in offering blanket insurance. One alternative approach that maintains the insurance but reduces the moral hazard is to follow the example of the government approach to car insurance. Having car insurance cover is mandatory to be allowed to drive, but the insurance is provided by the private sector and high risks are priced accordingly. Taking this over to banking, it could be a requirement of any deposit taking institution that they have some minimum level of insurance for their depositors, but they must buy this insurance themselves from the private sector or some combination of private and public sector. Insurers would try to differentiate good and bad risks and hopefully the greater the risk, the greater the premiums. Some institutions will not be able to be insured at all and would therefore be forced to consider alternative lines of business.

Macro Financial Problems of Micro Financial Efficiencies

The focus of banking regulation has been historically on identifying good practices at banks and making these practices a standard for others to comply with. In the section above we have highlighted how this does not address the social externality, where a focus on a bank's private interests will lead to an underinvestment in systemic stability, nor does it address the systemic aspects of the pro-cyclical behavior of banks during credit cycles. While best practices may be insufficient to mitigate systemic risks, it is commonly thought that high and common standards are a good and necessary thing. But this is not as clear-cut as you might imagine. To appreciate the problem it is important to understand that financial market liquidity is not about how big a market is, but how diverse it is. If a financial market has two people in it, whenever one wants to buy something and the other wants to sell it, it is a very liquid market. If a market had one thousand people in it, and they are all using the best practice valuation, risk-management and accounting system so that when one wants to sell something, in response to their risk management, valuation and accounting systems, so does everyone else. At any one time there will only be buyers or sellers; but you need both for liquidity. The market that is bigger with common standards is thinner in terms of liquidity.

An inclusive financial system has natural diversity in it. A pensioner, a young saver putting aside savings for a distant future, an insurance company and a charitable endowment, all have different investment objectives and different capacity for risks and these should be reflected in different valuation and risk management systems. For

example, an illiquid five year bond backed by good collateral would be a risky asset for an investor funded with overnight money, but a relatively safe asset for an institution with no cash commitments over the following five years, like a young pension fund. The risk management, valuation and accounting system that the institutions with overnight funding should use, should be different than the one the long-term investor should use. The trend, however, for the same transparency, valuation, accounting and risk management rules reduces this natural diversity and increases systemic fragility. Some of the Special Investment Vehicles (SIV) that were forced to sell assets in the credit crunch, and thus adding to the turmoil, were forced to do so, not because their funding dried up, but merely because they were using the same accounting and risk rules that the banks used even though they had longer-term funding commitments.

One of the key lessons of the crisis is that a critical factor in systemic risks is funding liquidity. When the system freezes, those with short-term funding topple over. Those with long-term funding are the system's stabilizers. They are risk absorbers. However, by using common mark-to-market accounting, valuation and risk rules we do not make any distinctions between those with a funding liquidity issue and those without, between risk traders who are short-term and risk absorbers who, as a result of long-term funding liquidity have a capacity for market and liquidity risks. It is not overly stylized to say that the risk management strategy of a risk trader is to sell before others do, while the risk management strategy of a risk absorber is to diversify risks through time. This absence of any distinction at the regulatory and accounting level has encouraged the growth of risk traders at the expense of risk absorbers as short-term funding is cheaper, and this has increased the systemic fragility of the financial system.

One of the problems with the originate, rate and relocate model is that risks were transferred to a varied group of investors, who may have structurally had different objectives, but through common valuation, accounting and risk systems, they ended up behaving as one investor (better to say: similarly, much as if they were one investor). We ended up with a greater spread across legal entities, but less diversity of behavior. The trend of common standards is actually championed by the banks under the guise of equal treatment. Their interest is to reduce any advantage others may have in the financial system and allow them to set up investment subsidiaries. But if that advantage is based on a different capacity for risk, through a genuinely different funding structure, then this difference should be preserved for systemic reasons, not removed. Accounting, valuation, risk management and transparency standards, and the equality of treatment are all generally good, but it must be understood that in some cases there is a trade-off with macro financial stability. If standards are a force for more homogeneity in the financial system then we must think again about how they are derived and implemented.

Broadening Regulation, Counter-party Risk

The crisis has been an occasion for renewed calls for the greater regulation of independent hedge funds and private equity firms. Our analysis so far points to two issues in consideration of the greater regulation of these institutions. First, these firms did not play a pivotal role in the crisis. The credit crunch centered on the banks and the banks' own in-house investment vehicles. Second, spreading these common rules across from banks to hedge funds, private equity firms, pension and insurance firms and others

while continuing to ignore the distinction between risk absorption and risk trading will make the financial system even less safe because it is within this group of investors that some of those with long-term term funding—the natural stabilizers of the financial system—reside.

Where hedge funds and more recently private equity funds can contribute to systemic risks is through their use of leverage. Hedge funds and investment banks in general, are far more leveraged than commercial banks. When things go wrong, deleveraging has systemic and contractionary consequences. However, they do not generate their leverage on their own; they get leverage from the commercial banks. It is therefore possible to regulate the most important part of what these institutions do, by regulating the way commercial banks give them leverage. This would be a far more effective form of regulation of institutions that for a variety of reasons are often domiciled in offshore locations and where their principals are footloose.

Indeed, part of the systemic problem has been that the supply of leverage to these institutions is regulated by their counter-parties, the commercial banks, in a homogenous manner. The common rules that turn on and off leverage from the commercial banks to hedge funds, investment banks and private equity firms and the common approach that these rules take to value and manage risk is a major source for a reduction in diversity of behavior and an increase in financial fragility. Where hedge funds have been a point of stress over the past twelve months it is often as a result of price declines in a market, causing its counter-party bank using its internal, short-term model of risk and value to cut lending to funds, that are then forced to off-load assets on to an already weak market. This is a mechanism for spreading and increasing systemic risks. Some of the regulation

being proposed to extend regulation to these counter-parties of banks may in fact reinforce these systemically risky processes, not disrupting them.

The solution to these issues is two-fold. First, if capital requirements are counter-cyclical this should also serve to regulate the flow of leverage to bank counter-parties. Second, regulators should resist calls for identical treatment of all financial institutions; a distinction needs to be made between those financial institutions, whatever they are called, that have short-term funding, less than 12-24 months say, and those that have longer-term funding. Those with short-term funding would be required to follow bank capital adequacy requirements. Those with long term funding will have a different regulatory regime. They will be required to provide disclosures to the regulators that make them comfortable that they do not have a funding liquidity risk. They must have a long-term “solvency” regime that takes into account their long term obligations and the long-term valuations of their assets. This would focus regulation on systemic activities and it would incentivize long-term investors to behave like long-term investors. The fact that different classes of investors would then behave differently would help stabilize the overall system.

Risk Absorption, Pension Funds and Banks

There is an understandable instinct that wishes to shield pension funds from risk. But of course pension funds can only generate returns for their members by taking some risk. The issue therefore is more what is the right risk for a pension fund to take. It is my contention that regulation is pushing pension funds to take the wrong kind of risk and

exposing them to inappropriate danger. In thinking about what is the right kind of risk to take, it is important to understand that there is not one kind of risk, but several and that “riskiness” has less to do with instruments and more to do with behavior.

As we have discussed above, a “risky” instrument held by a bank may be a “safe” instrument if it is held by a pension fund. There are broadly three types of risk: market risk, credit risk and liquidity risk. The way to diversify market and liquidity risk is through time. The way to diversify credit risk is actively across different types of credit. A young pension fund has the ability to earn the market and liquidity premium, but not clearly the credit risk premia. They should therefore invest in high quality credits with poor liquidity¹⁵—assets with strong long-term prospects but much short-term volatility or uncertainty.

What they should not do is buy highly liquid instruments and low volatility instruments with large credit premia. And yet this is the route they are chased down by accounting and regulatory standards. A pension fund required to match the duration of its assets to its pension liabilities, to mark-to-market its assets, and to earn a high yield to minimize contributions is inexorably led down the path of buying liquid instruments with poor credit. In buying liquid instruments, they are paying for a liquidity that they do not need, and in poor credits they are earning a risk premia they do not have a natural capacity to earn because they do not have cheap access to natural hedges of credit risk. The person who loses from this unnatural asset allocation, is not the consultant, actuary or manager, but the pensioner.

In a similar vein, banks have been pushed towards the wrong kind of risks. A bank has short-term funding. It therefore has little capacity for liquidity and market risks.

However, it has much capacity for credit risks as it is an expert in credit origination and through its origination activity is able to actively source and hedge across a variety of credit risks. Yet, what do banks do today? They sell their credit risk to pension funds and they fund private equity and hedge funds that effectively take on liquidity and market risk—and in a sense, a large part of this risk is passed back to the banks, as we have seen. We have said that we need to put the credit cycle at the heart of financial regulation, we also need to include there the concept of risk capacity, with different risks flowing towards institutions with a capacity for that risk.

Conclusions, Off-Balance-Sheet Instruments and a New Supervisory Framework

The current process of regulation is that we begin with the banks and regulate them for holding risk. Regulation is like a tax (as perceived by each firm; though the regulations may actually be good for the sector as a whole) and like all businesses, commercial banks tried to avoid the tax—in this case, through regulatory arbitrage and by shifting risks to, say investment banks. So, we regulate the investment banks; that in turn shift risk to SIVs and hedge funds. So we plan to regulate these, but they will only shift risks to some other place. What is the logical conclusion of this game? That the system will be heavily regulated, but that it will not hold much risk; risk will instead have shifted, and shifted until it has arrived at a spot where it can no longer be seen. This does not strike me as a good model.

We saw an element of this during the current credit crisis. Banks shifted credit risks to off-balance sheet investments where they were not very visible. Basle II

correctly addresses off-balance sheet instruments by requiring banks to hold capital against contingent liabilities that may arise from these off-balance sheet holdings and vehicles. But while this responds to the specific issue of off-balance sheet instruments, it does not really address the more general problem that the old distinctions of instruments and institutions are less relevant today than when bank regulation started. What matters is whether an activity is systemic, not whether it is called a bank or an SIV. Activities where there are a mismatch between funding liquidity and asset liquidity are likely to be systemic. Activities where there is substantial short-term leverage is likely to be systemically important.

A better model of banking regulation would be based on three pillars. The first pillar of supervision would be about doing away with distinctions based on legal entities of banks or investors and instead focusing on a capacity to absorb risks on one hand and on systemic risks on the other. In some regards, this would be a broader regime—incorporating institutions, off-balance sheet and other investment vehicles not currently regulated—but also a more focused regime. Those institutions with little funding liquidity (like a traditional bank) have little capacity to hold market and liquidity risk and should follow a capital adequacy regime. In calculating the value of risk-adjusted assets under the capital adequacy regime, short-term measures of value and risk, mark-to-market accounting and high standards of transparency would apply. This would be pro-cyclical, but this would be addressed explicitly by a counter-cyclical second pillar.

Those institutions with long-term funding liquidity (like a traditional pension fund or endowment fund) can be exempt from the capital adequacy regime in return for disclosures that satisfy the regulator that this is appropriate and adheres to a new

“solvency regime” that allows institutions to use long term measures of valuation and risk in determining and reporting their solvency. The quid pro quo of not being required to follow mark-to-market price and value systems is the greater disclosure of assets and perhaps the requirement to use their party custodians to hold assets, reducing the scope for fraud. Banks will attack this approach for creating an unlevelled playing field. But the approach seeks to support the natural diversity in the financial system and draws on the systemically beneficial role of risk absorbers—those that have a capacity to diversify risks across time.

The second pillar of supervision would be about putting the credit cycle back at the heart of the capital adequacy regime. Capital adequacy requirements should rise and fall with the overall growth in bank assets. Contra-cyclical mechanisms face tough political resistance and they should be supported with clear rules. They should be formulated closely and perhaps in conjunction with the monetary authorities.

The third pillar of supervision would be about maximizing transparency where it will benefit investor protection, with the constraint of not reducing heterogeneity in the behavior of all market participants.

The related but separate issue of investor protection can be managed by requiring institutions that take in depositors’ money to have some minimum, transparent level of deposit insurance, which is provided privately. This may serve to reduce the moral hazard of deposit insurance.

These three ideas should form the basis of efforts to reform current banking regulation. This crisis like almost all crises before was associated with embezzlement and fraud, especially in the brokerage of mortgages, but even if there was no fraud, the

crisis would still have happened. It was an inevitable consequence of the economic cycle, modern finance and its regulation. Moreover, while there is a limit to what we can do about the ethical standards of bankers, there is much we can do about the way we regulate the financial system.

If the three regulatory pillars above were in place in 2007, the crisis would have been ameliorated in three ways. First the scale of the previous boom would have been moderated by counter-cyclical charges that would have made lending and borrowing more costly, and as a result, kept them in greater check. Second, as a result of these counter-cyclical charges, banks would have been far more capitalized than they were—perhaps doubly so—providing a greater capital cushion for losses when the crash struck. Third, while banks and hedge funds with short-term funding were selling assets to raise fresh capital, pension funds, private equity firms, insurance companies and other long-term investors would have been buying these assets which on long-term valuation metrics had become cheap. This buying would have reduced the scale of the market price falls, which in turn would have reduced the depletion of bank capital and reduced the amount of forced selling. In a financial crisis there are multiple equilibria. The price-based system prevalent in 2007 forced the financial markets into loss-spirals that delivered a low price equilibria and associated insolvency and illiquidity. The three pillars described here would not eliminate the cycle, but they are more likely to have delivered higher price equilibrium, with less insolvency and illiquidity. Let us not wait for another crash before we try it.

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² I first heard the term, the “marketization of finance”, as well as separately the term “macroprudential” risks from one of the leading experts in this field, Claudio Borio.

³ Professor Charles Goodhart makes the important point that one of the problems with the originate, rate and relocate model is that many banks were too greedy to relocate the risks very far and often put them into their own bank sponsored Structured Investment Vehicle or hedge fund. Indeed, the collapse of Bear Sterns started with a collapse of a Bear Sterns hedge fund.

⁴ The Gnomes of Zürich is a disparaging term for bankers. The British Labour Party politician Harold Wilson, then Shadow Chancellor, coined the term in 1964 when he accused Swiss bankers of pushing the pound down on the foreign exchange markets by speculation. Basle is the home of the Basle Committee of G10 Bank Supervisors who developed the Basle accords on bank capital adequacy.

⁵ See *Sending the herd off the cliff edge: the disturbing interaction of herding and market sensitive risk management practices*. A. Persaud, 2000. Jacques de Larosiere Prize, IIF, Washington, www.bis.org/publ/bppdf/bispap021.pdf

⁶ I was led to this idea by Professor Willem Buiter who was one of the first persons to write about central bankers becoming buyers of last resort.

⁷ See, recent reports from the Financial Stability Forum (FSF), representing the views of regulators, and the Institute of International Finance (IIF), representing the views of the large banks.

⁸ Public loans to Northern Rock alone has already cost close to US\$100bn.

⁹ It is argued that this was the fate of efforts in the US in 2001-2002 in response to the major corporate accounting scandals, which culminated in the Sarbanes Oxley Act of 2002.

¹⁰ “Prior to the passage of deposit insurance legislation in 1933, banking panics were a recurrent feature of U.S. banking history. Federal regulation was absent in the antebellum period with panics in 1819, 1837, 1857 and incipient panics in 1860 and 1861. During the National Banking era, banking panics occurred in 1873, 1893, and 1907 with incipient panics in 1884 and 1890. After the Federal Reserve Act was passed in 1913, there were four full-scale banking panics, one in 1930, two in 1931, one in 1933 and a localized panic in Chicago in 1932”. (Elmus Wicker, *Banking Panics in the Gilded Age*, Cambridge University Press, 2008).

¹¹ One of the stated goals of Basle II is to better emulate the economic capital models that the banks use themselves. But if regulation was merely about emulation and not about addressing market failures, why would we need it?

¹² From: Goodhart and Persaud, “The party poopers guide to financial stability”, *Financial Times*, June 4, 2008

¹³ Ibid. It should be noted however, that the original Goodhart and Persaud article assumed that this exercise would be carried out for individual banks, but as suggested above, this approach could be used to estimate a country or region wide capital adequacy requirement.

¹⁴ On September 17, 2007, the UK Chancellor of the Exchequer said: “I want to put the matter beyond doubt. I can announce today that following discussions with the governor [of the Bank of England] and the chairman of the FSA [Financial Services Authority], should it be necessary, we, with the Bank of England, would put in place arrangements that would guarantee all the existing deposits in Northern Rock during the current instability in the financial markets.” Later this guarantee was extended to all UK banking institutions.

¹⁵ Since there will be little need for them to sell these assets in the short run.