PRIORITIES FOR THE REFORM OF GLOBAL REGULATION – CHALLENGING PAST ASSUMPTIONS

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The world financial system has suffered its worst crisis in at least 70 years, indeed in some ways the worst crisis in the 200 or so year history of modern capitalism. In response to that shock, it is clear that we need to make major changes to our regulatory approaches. But it is also important for us to recognise that what has occurred is a shock to a set of intellectual assumptions about the way that markets work, about their self-equilibrating character. In designing our regulatory response, we therefore need to ask searching questions about our past intellectual framework. We need to preserve the benefits of global financial flows, competing private banks and open financial markets. But we need to recognise that financial markets are in crucial ways different from the markets for most goods and services, inherently susceptible to occasional irrational exuberance, inherently imperfect in providing useful market discipline and potential sources of harmful instability within the real economy. Our philosophy of regulation needs to recognise those facts.

Until only two years ago – until the tremors which first shook the system in June 2007 – there was a dominant conventional wisdom which self-confidently asserted an interlocking set of optimistic propositions.

- We had seen 25 years of a trend towards securitisation, and 10-15 years of an explosion of structured credit and credit derivatives, and (Slide 1) it was believed that this growth of more structured and actively traded approaches to credit intermediation, had increased the resilience of the global financial system by dispersing risks into the hands of those best suited to hold each combination of risk, return and liquidity.

- We had seen a rapid increase in financial globalisation with dramatic increases in the scale of cross-border financial flows (Slide 2) in the form of on-balance sheet bank cross-border claims, both within developed economies and to emerging economies, and in the form (Slide 4) of increased holdings of equity and debt securities including, as shown here, those of emerging market securities. And this increasing financial globalisation was seen as an integral part of the wider globalisation of trade and long-term direct investment capital, which it was asserted, was spurring a more efficient allocation of capital, more innovation, faster productivity growth.

- Financial innovation and financial globalisation were therefore seen as among the factors producing the strong global growth record of 1998-2007 (Slide 4), among the best decades of global growth ever, and for the first time strong simultaneously in most of the developed world and most of the developing.

- And all it seemed without a downside of instability. Only a decade earlier, in 1997 to 1998, we had faced a financial crisis in emerging markets, a crisis which we should remember produced in those countries far more dramatic falls in output and employment than the major developed countries have faced over the last year. But by 2007 that seemed firmly in the past: we seemed to be enjoying the 'Great Moderation', low and stable inflation, steady as well as strong growth, and less volatile financial markets. And there were plenty of commentators ready to explain why this was not just good luck, but rooted in more complete and more efficient markets.

But those analyses, and the supporting academic theories of market completion and self-equilibrating markets, turned out quite wrong. Instead we have suffered enormous financial instability and a major setback to economic growth. And while there are signs that the huge policy interventions are beginning to have effect – fragility and confidence collapse giving way to slow recovery – the cost of those interventions is going to burden taxpayers in several countries for many years, and in some emerging economies, for instance in Eastern Europe, we are still very much in the fragile phase. We need to learn the lessons to make sure that in another decade's time we do not face another variant of extreme financial instability.

One of the striking features of this set-back has been how poor we have been at foreseeing it. And by that I mean that not just that we failed to foresee the crisis before it began in 2007 but how wrong were our forecasts of the economic impact <u>even once</u> the crisis has already clearly begun. In autumn 2007, after the initial hedge funds collapse in June, after the Northern Rock collapse in the UK in September, after a major spike in

inter-bank lending spreads and falling credit securities prices, very few people and certainly not the major official forecasters of the world foresaw that within a year the crisis would intensify so dramatically, and end in the state-backed rescue of major banks.

And even when the full scale of the financial crisis was clear, by October 2008, very few forecasters foresaw that some of the biggest GDP reductions would be seen in major manufacturing and trading nations, Germany, Japan, and Singapore for instance, rather than in the financial intensive economies where the crisis first originated. (Slide 5) In October 2008 most forecasters still anticipated positive GDP growth in Japan this year, not a fall of 4% in the first quarter. Global trade in manufactured goods fell (Slide 6) off a cliff in the final two months of 2008: few people had foreseen that only two months in advance.

We failed to realise that in an interconnected world of intricate and large financial flows – intermediated by banks and by securities purchase and sale – fragility in the financial system would have such dramatic and rapid effects. We failed to anticipate the rapid increases in leverage would be followed, once confidence disappeared by a strong deleveraging trend.

Or to anticipate that that deleveraging would be particularly focused on cross-border financial flows. Cross-border bank lending (Slide 7) has been dramatically cut back both between developed economies and from emerging market economies, as major global banks, suffering losses and capital impairment, have concentrated on the home markets they know best and in some cases have been encouraged to do so by governments which have used taxpayers' money to recapitalise – taxpayers who want to see the benefit in maintained domestic lending. And cross-border securities flows

in both equities and debt securities also initially declined. The fear has been expressed that the world financial system is deleveraging but also, to a degree, deglobalising.

And it is certainly being re-regulated; national regulators imposing more stringent capital and liquidity requirements on banks, and bodies like the Financial Stability Board and the Basel Committee and IOSCO striving to design internationally agreed responses to the crisis – in respect to bank capital adequacy and liquidity, the regulation of credit rating agencies and the operation of the credit derivatives market.

One fear expressed is whether we will overdo the regulation, and undo the benefits of financial innovation and financial globalisation while addressing its harmful side effects. I recognise that possibility, but I believe the bigger danger is that we fail to recognise how far what has occurred, following what occurred in the developing economies only a decade earlier, challenges our assumptions about where free financial markets work and where they do not, and fail therefore to use this opportunity radically to reduce the dangers of a similar crisis in future.

The origins of this crisis will be debated by economic historians for decades, but some key elements of the story are I think reasonably clear. At least six factors played a role: (Slide 8)

- macroeconomic imbalances;
- financial innovation;
- increased leverage;

- increased and changed forms of maturity transformation;
- a change in the nature of the securitised credit model;
- and a wave of irrational exuberance and then despair.

The macroeconomic context was one of exploding current account imbalances (Slide 9) driven by high national savings rates in major East Asian countries and in oil exporting countries. Combined with fixed or managed exchange rate policies, these imbalances produced a huge accumulation of risk-free or close to risk-free government securities, (Slide 10) producing historically low risk-free interest rates. And those low interest rates in turn made possible credit growth which further exacerbated the imbalances and produced a ferocious search for yield uplift.

That search for yield uplift in turn was met by a wave of financial innovation, focused on the origination, structuring, distribution and trading of ever more complex credit securities and credit derivatives: innovation predicated on the belief that by slicing and dicing and structuring, and thus creating more complete markets, we could deliver to end investors combinations of risk and return and liquidity more favourable than previously available.

This wave of financial innovation in turn was facilitated by and produced two important developments which exploited inadequate regulation:

- An increase in leverage, in multiple forms – on the balance sheets of commercial banks and investment banks, in their off-balance sheet vehicles, and embedded in products.

- And a shift in the scale, nature and location of maturity transformation, with maturity transformation increasingly performed by non-banks and shadow banks (SIVs and mutual funds and broker dealers) and increasingly achieved through short-term secured lending against assets long in their contractual maturity, but apparently liquid because traded in apparently liquid markets.

Together, these developments produced a profound shift in the nature of the securitised credit model away from its original proposition. Securitisation of credit was originally described as a mechanism to take credit off the balance sheets of banks: credit derivatives originally described as a means for banks to reduce their credit exposure. But what is striking, (Slide 11) as these IMF figures make clear, is that when the music stopped, the vast majority of credit securities, and the vast majority of the losses arising, were on the balance sheets of banks and investment banks. The model had been described as 'originate and distribute' but had become 'acquire and arbitrage'; one part of a bank originating and distributing but another part buying other banks' securities to trade in pursuit of proprietary gains.

Finally, this newly evolved system was then subject to a wave of self-fulfilling irrational exuberance of the sort familiar from other liquid financial markets – equities, commodities, foreign exchange – but this time focused on the market for securitised credit, largely held on the balance sheets of the banks, so that when the bubble burst, banking system

capital was impaired and confidence in banks and between banks collapsed.

Those elements of the story of the 2007 to 2008 crisis are now well familiar. But underlying them are I think three more general points about the nature of market efficiency and market rationality, some of which were relevant also to the 1997 to 1998 crisis, and which have implications for our overall philosophical approach to financial regulation. (Slide 12)

- Efficient markets are not necessarily rational.

- Market irrationality matters more in some markets than in others.

- And not all financial innovation is socially useful, indeed much of it is not.

First, market efficiency and market rationality. We are here as securities and commodities market regulators. And one of our guiding principles is that it is better for markets to be liquid, efficient and fair – free from the possibilities of abuse which illiquidity and intransparency can produce, providing clearly defined prices and low bid-offer spreads. And those are undoubtedly in themselves useful objectives. But what we must not do is to assume that market efficiency is any assurance of market rationality, of markets free from herd and momentum affects. For the boom and bust in credit securities prices which we saw from 2002 to 2008, has illustrated yet again that liquid financial markets are inherently susceptible to herd and momentum effects, to occasional bouts of irrational exuberance followed by irrational despair, in processes which have been described over the decades by economists and economic historians such as Charles

Kindelberger[1] , Hyman Minsky[2] Robert Shiller[3], and indeed John Maynard Keynes[4]. These herd and momentum effects can occur in markets for foreign exchange, commodities, equities and credit securities. For two reasons:

- First, because even if individuals operating in markets do so in line with the predicted behaviour of rational economic man, asymmetries of information, the pattern of principal/agent relationships, and the structure of incentives can produce self-reinforcing momentum effects at the level of the whole market.

- And, secondly, because as behavioural economist such as Daniel Kahneman[5] have shown, individuals are not guided in their behaviour solely or even primarily by rational decision making processes, but by heuristics, rules of thumb and emotion.

We must therefore recognise the potential for market irrationality rather than assume it away. And we must recognise that market discipline can be a very imperfect mechanism for influencing firm or country behaviour, and can generate severe procyclical effects.

- Market prices of bank CDS and equities (Slide 13) provided no warning of the crisis before it occurred, and sent signals which encouraged rather than constrained risky firm strategies. Once the crisis had broken, however, market prices and market commentary swung to the other extreme; it sometimes appeared that there was no

[1] Charles Kindelberger, *Manias ,panics and markets* (1978)
[2] Hyman Minsky, *Stabilising an unstable economy* (1986)
[3] Robert Shiller, *Irrational exuberance* (2000)
[4] John Maynard Keynes, *The General Theory* (1936) , Chapter 12 'The state of long term expectations'
[5] Kahneman, Slovic and Tversky, *Judgment under uncertainty: heuristics and bias* (1982)

limit to the capital required to convince the markets that banks were safe.

- Similarly in the emerging market crisis of the 1990s, as Maurice Obstfeld and Alan Taylor have argued, capital markets appeared to impose very little discipline on risky country strategies before the crisis occurred, and then switched to an excessively harsh discipline thereafter.[6]

My second point, however, is that this inherent potential for market instability seems to have far greater potential to produce economic harm in some markets than in others. The internet share price boom of 1998 to 2000 and subsequent bust was undoubtedly an example of irrational exuberance, and significant misallocation of real resources resulted, but at the macroeconomic level its consequences were relatively slight. In the face of equity market volatility, the optimal policy is probably just to accept that markets are occasionally irrational and imperfect allocators of resources but still far better than any alternative and that volatility can be absorbed by equity investors who have consciously chosen to be the provides of shock absorbing capital. Booms and busts in the price of credit securities, however, seem far more harmful, for two reasons:

- First, because if many of the credit securities are held on the balance sheets of banks, the bust results in the impaired capability of banks to perform their essential functions of credit intermediation and maturity transformation.

[6] Maurice Obstfeld and Alan Taylor, *Global Capital Markets : Integration , crisis and growth,* Cambridge 2004

- Second, because irrational exuberance in the price of credits – first underpriced and then overpriced – has a more direct effect on the behaviour and the financial soundness of firms and households than irrational swings in equity prices, given the fixed nature of debt servicing commitments, and the large and irreversible economic costs of bankruptcy.

Irrational swings in credit prices may simply matter more than irrational swings in equity prices. Similarly, the lesson of the 1997 to 1998 crisis seems to be that irrational swings in capital flows and exchange rates have far more potential to cause harm in smaller or low and middle income countries, than in large and richer ones.

Third, and finally, one implication of potentially irrational markets and ineffective market discipline is that we cannot assume that all financial innovation is useful, with valueless innovation winnowed out by the discipline of market competition. One of the striking features of the last 25 years of financial liberalisation and globalisation has been a remarkable expansion of the size of the wholesale financial services sector. Thus (Slide 14) while measures of total economy wide leverage show some increase in the leverage of corporates and households, what is really striking is the explosion of intra-financial sector leverage, of financial claims between different banks and investment banks, resulting from the mesh of complex relationships created by the acquire and arbitrage model of securitised credit and credit derivatives. And alongside this explosion of balance sheets, financial sector profits as a percent of GDP grew significantly as did financial sector market capitalization as a percent of total equity market cap.

Some of this growth may be inherent and beneficial – it may be required to perform the more complex financial intermediation functions needed in a world of global trade, global capital flows and fluctuation exchange rates. But it seems likely that some of the profit growth is illusory – the consequence of rising asset prices, leverage and mark-to-market accounting. And some of it probably represents rent extraction, arising from the asymmetry of information and understanding between producers and consumers, and the opacity of complex structured products, which make innovation in financial markets less clearly and in all circumstances beneficial than innovation in, say, consumer durables, retailing, restaurants, or pharmaceuticals.

Not all innovation is equally socially useful. If by some tragedy the world lost the ability to create one of our major drugs, human welfare would suffer badly: if amid the financial turmoil we have mislaid the instructions for creating a CDO squared, I suspect we will get along quite well without. In the decade running up to the crisis parts of the global financial system probably grew to a scale beyond that the socially useful level.

Those three fundamental lessons – that financial markets are inherently susceptil to herd effects and imperfect providers of discipline; that that matters most in t market for credit; and that we cannot assume that financial innovations are definition socially useful – carry important implications for our priorities regulatory reform.

Several reports have recommended what those priorities should be. There is stro consensus around many of the actions needed and in particular these six (Slide 15)

- First, more and higher capital across the banking system. This cri has brutally reminded us how vital are the functions banks perform the real economy, how important is confidence in and between t banks, and how potentially fragile. We cannot remove volatility fr financial markets and oscillations from the real economy; so we sim need more shock absorbing capacity in the banking sector, more equ capital supporting the vital functions of maturity transformation a credit intermediation. And we need more capital in particular agai trading activities – for reasons I'll come back to later.

- Second, some sort of simple non-risk sensitive gross levera constraint. In theory, of course, that should not be necessary: why ha a crude non-risk sensitive measure, treating all assets as equal ri when we have developed sophisticated measures of risk, weighted r assets? The reason is that however sophisticated we become assessing risk, it is still an imperfect art, and when, despite our ri sensitive measures, problems arise, the bigger the size of the balar sheet, the bigger the potential losses.

- Third, countercyclical capital buffers should rise in good years so t they are available to draw down in recessions, reducing the procycli link between bank profitability and the price of credit extension – the way up and on the way down – offsetting the tendency for t banking system itself to amplify economic cycles. And the F believes that that countercyclicality in regulatory capital should also reflected in published accounts, with dynamic provisions or economic cycle reserve which reflect forward-looking assessments likely losses through the economic cycle.

- Fourth, a dramatically increased focus on liquidity issues, issues whe to be blunt, the world regulatory community took its eye off the b amid all the focus on the new Basel 2 regime for capital adequacy. V need better oversight and tighter controls over the extent of matur transformation occurring within individual banks and across the wh system, and over the extent to which banks and near banks are relyi on liquidity through marketability to justify the funding of contractua long-term assets with short-term liabilities.

- Fifth, the general principle of regulation according to econon substance, not legal form. The origins of this crisis developed in p within legal vehicles – SIVs, conduits, mutual funds, broker dealers which were using high leverage to perform bank-like functions, l which, because of their legal status, escaped prudential controls capital and liquidity; in future we need to focus on the economic reali And while hedge funds were not to any significant extent prime driv of this crisis – with leverage often less than popularly supposed – 1998 LTCM did play an important destabilising role, and large higl leveraged hedge funds could do so again in future. We need to gatl information on hedge funds, to understand their aggregate impact market trends and stability and we need the power to extend prudent regulations to any individual hedge funds which do evolve to beco bank-like in function and potentially systemically important.

- The sixth priority is a macro-prudential approach to analysing financ system risks and how to offset them, at the national and at the glol level. That's been said so often that it is in danger of becoming cliché, but it is vital. Many of the most important threats to financ stability can only be identified at the aggregate system level – becau they derive from the inherent interconnectedness of financ

institutions, from irrational price movements across whole markets a classes of asset, and from the complex feedback loops betwe aggregate banking system capital and liquidity positions a macroeconomic cycles.

And to offset emerging risks – asset price bubbles, over-rapid cre extension – we need to be able to pull macro-prudential levers, such countercyclical capital requirements, alongside the classical interest r lever of monetary policy – using regulatory actions as well as inter rates to take away the punch bowl before the party gets out of hand.

That amounts, of course, to a major shift away from the domin conventional wisdom of the last six years – the Greenspan doctri which doubted whether any policy, monetary or regulatory, should could be used to lean against the wind of irrational exuberance, doub the ability of the authorities to judge whether asset prices had beco irrational, and explicitly assumed that market disciplines and mar incentives would control any irrational exuberance before a major cri was reached. But that doctrine is no longer tenable.

Those six priorities command a significant consensus support. They would amou to a dramatic shift in the regulation of banks and bank- like activities, and a ma shift in intellectual philosophy – placing less reliance on markets and mar discipline to ensure a stable and socially optimal result.

That shift in philosophy also defines how we should approach two other issues where the precise way forward is more subject to debate.
(Slide 16)

First, what should be the regulatory approach to the capital market activities and proprietary trading activities of commercial banks? It's a

crucial issue because it was in the fixed income trading books of commercial banks and of investment banks which are now largely owned by commercial banks or have themselves become bank holding companies, that this crisis initially emerged. It was a crisis born in the interface between on-balance sheet banking and securitised credit trading. Two worlds which for many decades after the financial crisis of 1929-33 were largely separate, whether because of Glass- Steagall type restrictions or out of market and institutional conventions, but which became closely intertwined over the 30 years running up to the crisis, particularly so in the last ten, after the removal in the US of the remaining Glass-Steagall restrictions.

In the UK, there has been considerable discussion as to whether those worlds should now be re-separated, with several respected commentators arguing that narrow banks supported by retail deposit insurance and implicit taxpayer guarantees should be forbidden from risky capital markets activities. In my Review I cast doubt on whether a hard and fast legal distinction is either optimal or feasible way forward. Securitised credit probably will continue to play a major role in the world credit system, and major commercial banks probably do need to play a significant role in securitised credit market making, alongside interest rate derivative and foreign exchange market making, in order to provide services to corporates operating in a complex global economy.

But equally we must recognise a problem which requires a response. Part of the story of the crisis was that some large commercial banks took the benefits of retail deposit insurance, retail funding and implicit too-big-to-fail status, and used those to support risky propriety trading activities which produced large bonuses for individual bankers but large bills for

taxpayers and large harm to the economy when their bets went wrong. We need to make sure that doesn't happen again. We need banks focused on providing services of real value to corporates and household customers, not on risky position taking and over complex innovation a little social value.

The key policy needed to achieve that end is a major change in the capital treatment of bank trading activities, where VAR-based measures of trading risk have proven clearly deficient and strongly pro-cyclical. Dramatic increases in capital requirements – increases of several times – are likely to be justified. The open issue is whether simply changing the capital requirements will be sufficient, or whether, as Paul Volcker has suggested in his Group of 30 report, there should also be more direct regulatory limits on the scale of risks which commercial banks are allowed to take[7]. But whatever the resolution, the philosophy of approach is I think clear. We cannot assume that allowing institutions freedom to do whatever the market will support will necessarily produce beneficial results.

(Slide 17) The second, and somewhat related issue, is how should banking and securities market regulators, deal with credit derivatives? CDSs were originally developed and lauded as a technology for managing and reducing bank credit risk, and their proponents argued effectively against the imposition of securities markets regulations on the grounds that regulation would limit this beneficial role. But CDS in practice also facilitated the creation of synthetic credit risk, credit risk where none had previously existed, and in doing so played a major role in driving the scale and complexity of structured credit markets. In addition the over-the-counter nature of the CDS market, has created potential operational risks,

[7] *Financial Reform: A Framework for Financial Stability,* report of committee chaired by Paul Volcker, Group of 3 2009

with large un-netted positions and a lack of central counterparty clearing arrangements.

The crucial issue going forward is whether our response should be solely focused on addressing the operational and infrastructure issues, or whether we should also be attempting to influence more fundamentally the uses to which CDS are put and their financial stability and economic consequences. There is wide agreement on the need for central counterparty clearing systems; considerable support for shifting as many contracts as possible to standardised exchange traded form; there are some who would like to use high capital requirements or outright bans to limit the scope for OTC CDS not traded on exchanges, and some people who argue that it should be forbidden to take a CDS position if one does not have an insurable interest in the underlying credit. Where along that spectrum sensible regulation lies is unclear and requires careful debate. But the philosophical position is again clear. We cannot accept, as we did in the past, that the financial innovation of a new product category is axiomatically beneficial because it creates previously nonexistent markets: we need to be willing to make judgements as to when markets deliver benefits and when not.

(Slide 18) Thirdly and finally, what should be the regulatory approach to global cross-border banks, and indeed to the liberalisation of global cross-border securities flows, to capital account liberalisation? The essential problem with global cross-border banks is that they are global in life but national in death. That they want to operate as integrated global businesses, but that if they get into trouble national legal entities and bankruptcy laws matter, and it is national governments which decide whether to provide fiscal support even though the consequences of failure

of global. That makes life uncomfortable for the host supervisors of large operations of global banks or investment banks, such as the FSA last year faced with the Lehmans failure: but also uncomfortable for the home country governments of banks which are very large relative to home country fiscal resources.

Faced with that problem, we can go in two directions – and we probably have to go a bit in both. We can intensify global cooperation as much as is possible in a world which lacks a global government or even a global treaty-based organisation – through colleges of supervisors, predetermined crisis coordination plans, and maybe even discussions about whether fiscal burden sharing to prevent crises would be feasible. Or we can go in the other direction, demanding that banks hold more capital and liquidity in local operations, seeking to increase the likelihood that local bank operations can survive the failure of the global firm, and at the limit making global banks holding companies of national banks.

Many in the private sector would strongly prefer the more global integration route, and argue that increasing localization will create unnecessary costs and make permanent the trends towards deglobalisation of the financial system which I referred to earlier, with harmful effects on global trade and capital flows.

But we need to analyse carefully if that really is the case. Clearly greater localization of capital or liquidity could increase costs of operation for individual banks, but whether it would have a harmful macro-economic impact by impeding valuable cross-border capital flows, is less clear and requires careful analysis. Different specific cases need to be distinguished. If we are thinking about the trading room activities of banks spanning

major financial centres, the macro-economic impact depends on whether that trading activity was truly value creative for society – and that may or may not be the case. If we are talking about commercial banking activities, for instance in an emerging economy which is a net importer of capital, a fully capitalised subsidiary can still borrow on global money markets, either from its own parent or from others, and useful medium capital flows can therefore still be supported. And some countries, faced with the recent sudden withdrawal of foreign bank lending in response to impaired capital, may conclude that there is some merit in having banking systems which are to a greater extent based on local funding sources and less reliant on potentially fickle inflows from abroad: and may believe that they can have such systems, but still gain the benefits of competition and global transfer of expertise, by welcoming foreign banks which establish fully capitalised local subsidiaries.

The debate about the appropriate regulatory approach to cross-border banks therefore overlaps somewhat with a broader debate about the advantages and disadvantages of short-term capital flows, and the advantages and disadvantages of rapid progress to capital account liberalisation.

That question was much to the fore amid the emerging market crisis of 1997 to 98. And the best answers to it have been nuanced ones[8] – tending to support long-term progress towards capital account liberalisation, but wary of overstating the benefits or understating the risks if appropriate conditions are not in place. It is for instance unclear that China has suffered any significant disadvantages from taking financial market liberalisation and capital account liberalisation at a more measured pace than was

[8] See Obstfeld and Taylor op cit

typically urged on it during the years when we are so confident that freer financial markets were by definition beneficial.

In deciding how to regulate large cross-border banks we therefore need to understand better the relationship between institutional freedoms and useful global capital flows. And in the wider debates about financial sector liberalisation in emerging markets, we need to recognise pros and cons which need to be carefully weighed, rather than assuming that rapid liberalisation is axiomatically beneficial.

I started with this slide (Slide 19) and I will end with it. I have argued that in deciding priorities for regulatory reform we need consciously to reject the conventional wisdom of the decade running up to the crisis, which too readily assumed that markets were self-equilibrating, that financial innovation is always beneficial, and the market discipline and incentives would lead bank managements to make optimal decisions. We need to base financial regulation on a richer understanding of the very specific nature of financial markets, which are essential to the workings of a market economy, far better than the alternatives as a means of allocating capital, but inherently susceptible to irrational behaviours and imperfections, which are more extensive and more potentially damaging than those which afflict most other goods and services markets.

That richer understanding of financial markets will I think also equip us better to spot future vulnerabilities and to design appropriate responses to the future currently unknown problems which will undoubtedly merge. In the years running up to the crisis, we reached the mistaken conclusions shown on the slide, not only because the empirical evidence of the Great Moderation appeared to be compatible with them, but because of a

dominant intellectual mindset, a dominant conventional wisdom which assumed that these conclusions must be true, because more markets and more complete markets meant better markets and better economic results. We now know that that wasn't true. We need to build a future regulatory system on a sounder intellectual basis.