

Paper One

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International Regulation, Risk Management and the Creation of Instability.

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One of the key conclusions of a recent paper on international regulatory standards entitled *Financial Sector regulation: Issues and Gaps*, prepared by the staff of the Monetary and Financial Systems Department of the IMF, is that:

“The objectives of regulation and regulatory components could be more expressly linked to the goal of system-wide financial stability. The standards are useful to regulators charged with assessing the strength of regulated entities within each sector. However, their use in addressing system-wide stability issues is limited, partly because they were not written for this purpose. The standards take little account of structural issues, or of interlinkages among different types of financial firms and markets” (IMF, 2004a, p.30).

In contrast to many of the international regulatory developments in finance since 1975 (the Basel Accord, Basel I, etc.) a lack of focus on the changing *systemic* characteristics of the international financial system has become a characteristic of international regulatory developments in the past few years. It is certainly a characteristic of Basel II, surely the most important practical expression of the contemporary theory of international regulation. And via Basel II, it will be a characteristic of European Union's regulatory directives.

What are these “changing systemic characteristics”? The *Background Paper* that accompanies *Issues and Gaps* lists them as¹ (IMF 2004b, pp.4-17):

Increased conglomeration and risk transfer.
Significant and growing internationalisation.
Growing dollarization.

1. Two other factors considered are (a) weaknesses in infrastructure underpinning regulatory systems, and (b) government ownership of financial institutions. However, these are not *trends*, but characteristics influencing the success of prudential regulation.

Paradoxically, in the face of these significant *macroeconomic* trends, regulatory standards have retreated from macro concerns, concentrating on essentially *microeconomic* issues – as is the case with the Regulatory Standards. Pillar 1 of Basel II in which regulatory capital requirements are based on the risk models *of firms* is another major example. And at the same time, the impact of the externalities created by risk-taking institutions has been lost in the emphasis on market-compatible regulation - consider Pillar 3 of Basel II that seeks to enhance disclosure, transparency and market discipline.

Externalities and the macroeconomics of systemic risk

Financial risk-taking is a concern of public policy because associated with the risk-taking actions of individuals there are externalities; i.e. costs and benefits accruing to the society that are *external* to the calculations of the individual investor, and not accounted for in the market place². A major financial failure imposes costs on society going far beyond the losses suffered by the investors. In an economy where there are important externalities, competitive markets will be socially inefficient. The task of public policy, in this case of financial regulation, is to attempt to mitigate these inefficiencies.

Financial externalities are particularly potent because they are transmitted *macroeconomically*.

Financial markets are markets for stocks of current and future assets, the value of which today is dependent on the expectation of their future value. To the extent that expectations are shared any factor that leads to a general shift in expected future values will have an immediate impact on financial markets, and on the major macro-financial variables, such as the interest rate and the exchange rate.

So the failure of a single firm can, by influencing expectations, have an influence not only on its immediate counterparties, or even just on firms dealing in similar products, but also, through its impact on expectations, on financial markets as a whole, and then via the interest rate or the exchange rate the contagion may spread to the real economy at home and abroad.

Yet despite the presence of externalities and potential contagion, a peculiarity of market expectations is that they can be remarkably stable (or tranquil) for substantial periods of time, even when underlying real circumstances might be decidedly unpropitious. In consequence, the financial markets can resemble the cartoon character who, having run off the edge of the cliff remains suspended for some time in the mid-air, with no visible (or rational) means of support, before suddenly plunging into the abyss.

Periods of tranquillity defined by stable expectations and stable market confidence may sustain the illusion that financial markets are truly reflecting a strong real economy. The shattering of that illusion can be catastrophic.

2. There are a number of other important market failures in the financial sector which attract the concerns of public policy, most notably the asymmetry of information between individual savers and market professionals that is the motivation of consumer protection. This lecture deals solely with the market failure manifest in systemic risk.

One of the tasks of financial regulation is to keep markets away from the cliff edge, and when they rush over, to ensure that the damage to the economy as a whole is minimised.

The analytical framework

What analytical framework should underpin the development of international financial regulation of macroeconomics of systemic risk?

The origins of the externality of systemic risk are in large part manifest through what the economist John Maynard Keynes called a “beauty contest”. In Keynes’s contest beauty is not in the eye of the beholder. Instead, the game is won by those who can accurately assess what others think is beautiful. In financial markets, it is knowing what others believe to be true that is the key to knowing how markets will behave. The market is driven by participants’ belief about what average opinion believes average opinion believes and so on (Keynes, 1936, chpt.12; Eatwell and Taylor, 2000, chpts.1 and 3).

If such markets are to be liquid and reasonably stable then, as Avinash Persaud has emphasised (Persaud, 2000, 2001) it is not enough that markets should be large, it is also a fundamental requirement that they should be characterised by a wide range of participants with heterogeneous objectives *and* with confident expectations that markets will be stable.

A market is liquid when buyers are broadly balanced by sellers.

Markets become illiquid when objectives become homogeneous. When everyone believes that everyone will sell, liquidity vanishes. Markets fall over the cliff when average opinion believes that average opinion has lost confidence in financial assets.

So what contributes to heterogeneity?

First, individual investors and traders must be highly heterogeneous, with different financial objectives, different methodologies, different institutional structures and infrastructures. In traditional economics this was described as the difference between those seeking income certainty and those seeking wealth certainty, with different patterns of risk aversion, different investment time horizons and so on (Robinson, 1951),

Second, investors may have differing access to information, so even if their goals might be the same they will behave differently.

Third, when average opinion believes average opinion believes that markets are stable, then stability becomes a convention. Convention (meaning belief in stability) is vital in financial markets, because convention *creates* and *sustains* heterogeneity. This power of stable expectations should not be underestimated – by defining the *expected* range of movements in asset prices it fixes the *actual* range of fluctuations in

current asset prices. But of course once convention is breached, then the flood will follow³.

Fourth, investors may be forced, by government regulation, into segmented markets – heterogeneity is effectively imposed by the authorities. For example, the UK mortgage market used to be legally separated from other investment markets, and allocation of mortgages was not entirely by price – queuing was also important. Similarly the Glass-Steagall Act segmented US financial markets, and exchange controls segmented national financial markets.

Taking these four dimensions as a starting point it is striking that the systemic changes identified in *Issues and Gaps* have tended to increase the homogeneity of markets – and even more striking that in many cases this tendency has been reinforced by the regulatory response.

The liberalisation and hence internationalisation of financial markets that has taken place over the past 3 decades has inevitably reduced heterogeneity in financial markets.

By definition liberalisation and internationalisation have broken down market segmentation - cross-market correlations have risen sharply.

And with liberalisation has come a growing professionalisation of financial management (BIS, 1998, chpt.V), and extensive conglomeration of financial institutions (Group of Ten, 2001; IMF 2004a, 2004b). Most investments are now managed by mutual funds, pension funds, insurance companies and so on; and these funds are themselves locked into sophisticated wholesale money markets, securitising and packaging and hence homogenising funds from previously segmented markets. Professionalisation has reduced the heterogeneity of investor preferences as expressed in the marketplace. The professional investor is subject to a continual competitive pressure to maximise (short-term⁴) returns, and is constrained by the well known institutional dilemma that “it is better for reputation to fail conventionally than to succeed unconventionally” (Keynes, 1936, p158). So whatever the preferences of the private investor might be, convergence on “professional” or “conventional” strategies by institutional investors are homogenising the market. And with professional investment go professional information services – both in sources and processing – again making for a more homogeneous environment.

Conglomeration is clearly a major homogenising force too. As conglomeration proceeds risk management procedures acquire common characteristics throughout the financial sector, whether in banking, securities or insurance. Where once management techniques were sector specific, they are now becoming firm specific, applied across sectors.

3. The most powerful convention of all is that imposed by governments. When the exchange rates of the future Euroland currencies were declared prior to being irrevocably fixed on 1st January 1999, the markets rapidly converged on those rates.

4. “... there is a peculiar zest in making money quickly, and remoter gains are discounted by the average man at a very high rate.....It is the long-term investor ... who will in practice come in for most criticism, wherever investment funds are managed by committees or boards or banks” (Keynes, 1936, p.157).

Dollarization has also reduced the heterogeneity of policy response. National institutions that might have pursued distinctive policies related to national needs find their powers significantly diminished. In addition to the familiar problem of balance sheet currency mismatch, the central bank has little scope to pursue an independent policy on dollar deposits (IMF 2004b, p.11).

Finally, what of the impact of increased risk transfer? In principle risk transfer should enhance the heterogeneity of risk bearing, transferring risks toward those with a previously unrequited appetite for risk. A number of questions arise: Has risk indeed been transferred or has it been concentrated (there is clearly a significant concentration in credit risk transfer intermediaries, most notably JP Morgan Chase)? Has risk been transferred to those institutions with not just a greater appetite for risk, but a greater capability for managing risk? When there is a lack of liquidity is the central bank still able to target effectively the provision of liquidity to the market? How will CRT change the risk-taking behaviour of both buyers and sellers of risk? All these questions are at present unresolved, with only tentative answers on offer (see Bank of England, 2001; FSA, 2002; IAIS, 2003; BIS, 2004; BCBS, 2004; Wagner and Marsh, 2004). However, what does seem clear is that risk transfer will become a powerful homogenising force across financial institutions⁵. The efficient management of banking risk by non-banking risk purchasers will tend to converge with efficient management of banking risk by banks.

It would therefore appear that underlying the concern expressed over the impact of changing systemic characteristics of the international financial system is the tendency of these changes to reduce heterogeneity in financial markets.

Regulatory principles

As has already been noted, financial sector regulators, are tending to reinforce this homogenising process. The most important reaction to the recurring crises that have followed the process of liberalisation since the 1970s has been the development of international regulatory standards and procedures. In this context the IMF-World Bank FSAP programme is of particular note since it locates regulation within a treaty framework under Article IV of its Articles of Association. FSAP surveillance concentrates on the adherence of national regulation and practices to core principles developed by the Basel Committee, together with the International Organisation of Securities Commissions (IOSCO) and the International Association of Insurance Supervisors (see IMF, 2004a, 2004b). But it is the principles underlying Basel II that the embody the most important intellectual foundations of the new international financial architecture are revealed.

Those principles have been critically appraised by, amongst others, Persaud (2001) and Jonathan Ward (2002).

5. 'With higher activity in risk transfer markets, financial market participants with traditional business lines could assume completely different roles as "virtual insurers" or "virtual bankers"' (OECD, 2002, p.2).

These are the three so-called pillars of Basel II: Pillar 1 - the determination of regulatory capital now heavily weighted toward use of banks' internal risk weighting models, as well as the views of ratings agencies; Pillar 2 – supervision; and Pillar 3 – market discipline enforced by greater disclosure of banks' financial status as well as their internal risk management procedures.

What is particularly noticeable is the emphasis on the role of firms' own risk management procedures and on market discipline. A rather odd way to confront systemic risk, which is by definition an externality that internal procedures do not encompass and is not accounted for in the market place.

But perhaps of even greater importance is the powerful tendency of Pillar 1 and Pillar 3 will tend to increase the homogeneity of financial markets.

First, there is the emphasis on the use of firms' internal risk management systems, systems that are by definition, market sensitive. Whilst firms' models may differ in detail, they are constructed on similar analytical principles, estimated on similar historical data, and sensitive to the same market information.

Good risk management will result in firms holding a portfolio of assets that are not volatile and the prices of which are not highly correlated – not correlated in normal times that is. Suppose however that the volatility of a given asset rises sharply, the models will tell all the firms to sell. As all try to sell, liquidity dries up. As liquidity dries up, volatility spreads from one asset to another. Previously uncorrelated assets are now correlated in the general sell-off, enhanced by the model driven behaviour of other institutions caught up in the contagion. Whilst in normal times such models may encompass a wide range of behaviour, in extreme circumstances the models will encourage firms to act as a herd, charging toward the cliff edge together⁶ (Persaud, 2000).

Second, the emphasis on disclosure reduces the diversity of information that has in the past created diversity of views. Today information is ever more readily available, and disclosure of price sensitive information is legally required. Insider dealing on private information is, rightly, characterised as market abuse. But the attainment of equal information is bought at a cost – increased homogeneity and hence potentially reduced liquidity.

In the light of the enforcement of greater homogeneity by Pillars 1 and 3, considerable weight is placed on Pillar 2 (enhanced supervision) to inhibit the behaviour that generates systemic risk. Unfortunately it is not at all clear that an essentially subjective, personal interaction between bureaucrat and risk taker can be either consistent or effective, particularly on an international scale (Ward, 2002; IMF 2004a).

6. Philippe Jorion (2002) has rejected this argument. However, his defense of risk management systems is not convincing: he claims that “financial markets are no more unstable recently than over the past century”, when the key comparison is with the 1950s and 1960s; he admits that the “jury is still out” on herding and acknowledges pro-cyclical effects; he argues that VaR models should be smoothed, ignoring the impact of daily-earnings-at-risk systems.

The drive toward homogeneity is not confined to the Basel II banking proposals. Regulators are responding to the creation of seamless financial markets, spanning banks, securities firms, insurance companies, pension funds, and so on, by requiring that they all follow the same regulatory regime. For example, in considering the relationship between banking and insurance, Sir Howard Davies of the UK Financial Services Authority argued “Our general view is that the capital treatment should in principle be the same, where the risks are the same” (Davies, 2002). The homogenising pressure exerted by the regulators was evident in the FSA’s Consultation Paper 142 on *Operational risk systems and controls* (which enunciates policies that apply to all regulated firms) and is a defining theme of the preparatory materials for the two forthcoming EU directives, the Capital Requirements Directive and the Market in Financial Instruments Directive.

So the competitive pressures for homogenisation throughout financial markets are being reinforced by the regulators.

Macroeconomics

The IMF has justified its move into financial regulation by reference to the powers of macroeconomic surveillance embodied in Article IV. It might therefore be hoped that the macroeconomic dimension of systemic risk would be to the fore both in its analysis and in its regulatory proposals.

And indeed, the IMF has proposed the construction of “macroprudential indicators” (MPIs) to assess the “health and stability of the financial system”. MPIs “comprise both aggregated microprudential indicators of the health of individual financial institutions and macroeconomic variables associated with financial system soundness” (Hilbers, Krueger and Moretti, 2000; see also Evans, Leone, Gill and Hilbers, 2000).

This attempt to link micro risk to the performance of the macro economy is laudable, and is exactly where the debate on effective international regulation should be going. However, there is a flaw in MPIs as currently conceived: there has been no attempt to link the microeconomic risk-taking to the risk created by the inter-actions of firms⁷. Just adding up micro data won’t do. The whole is not just greater, but behaves very differently, from the sum of the parts. It is not that the key issue of homogenisation is not addressed, by concentrating on micro structures it is regarded as a virtue.

A complementary manifestation of the relationship between microeconomic risk and macroeconomic performance derives from the links between risk management, financial contagion and the trade cycle. Strict regulatory requirements on risk exposures will result in firms reducing lending as a result of a downturn in the economy, thus exacerbating the downturn. In an up-turn, the perceived diminution of risk and the availability of regulatory capital will tend to increase the ability to lend, stoking up the boom (see Jackson, 1999; BIS, 2001).

7. Even at the most simple level these interactions undermine the calculation of MPIs. For example, not only is the value of capital, and hence the capital adequacy ratio, directly effected by the revaluation of assets consequent upon a change in the interest rate, but also declines in the level of activity can rapidly transform prudent investments into bad loans.

This pro-cyclicality of regulation is further amplified by the contagion-inducing techniques of the micro risk management encouraged by the regulators. During the Asian crisis, for example, financial institutions followed the instructions of their risk models by reducing their exposure to emerging markets throughout the world. These cutbacks helped spread the crisis, as reduced lending and reduced confidence fed the financial downturn.

The key to the problem is, once again, the link between micro-economic actions and macro-economic consequences. Rational risk-management by individual firms precipitates a macro-economic reaction that, in a downturn, can place those firms and other firms in jeopardy, indeed could overwhelm the firms' defences entirely.

Yet because the links between regulation and macroeconomic policy are so little understood, there is no coherent policy response to this perverse consequence. Under pressure, regulators have adopted the pragmatic solution of "regulatory forbearance". At the onset of the Latin American debt crisis in the early 1980s many major US banks were technically bankrupt, since Latin American assets held on their books had lost their entire market value. Nonetheless, US regulators allowed those worthless assets to be evaluated in the banks' balance sheets at their value at maturity, hence boosting the banks' notional capital and preventing a sudden collapse in lending and liquidity⁸. In the autumn of 1998, many assets held on the balance sheets of financial institutions in London and New York were, if marked to market, worth nothing. Again, the regulators did not insist on an immediate (potentially catastrophic) write down.

For all countries, there is the further difficulty that even if some sort macroeconomic response were available to offset the procyclicality of regulation, macroeconomic policy is essentially national, whilst the problem may well be international in origin and scope.

An international approach

And it is the international dimension that is notable, and oddly, missing in the IMF's new approach. The FSAPs are appraisals of *national* financial systems. Yet many of the risks faced by a given national economy may well, in a seamless international financial system, emanate from outside the juridical boundaries of the nation state. It is precisely the national focus of regulators that has been persistently exposed as inadequate in recurrent crises in the past twenty years. It seems quite unsatisfactory to conduct an appraisal of the financial health of Colombia, for example, when many of the risks to which that country is exposed are external. And equally unsatisfactory to conduct an FSAP of UK, when Britain is so obviously an integral part of a worldwide financial system. At very least IMF should be conducting FSAPs on major collectivities of states, say the G7, or the East Asian economies taken together. This is supposed to be the responsibility of the Capital Markets Division of the IMF. But there seems to be little linkage between the FSAPs and the work of that Division.

8. This does not mean that regulatory standards were abandoned entirely: "... money centre banks whose loans to heavily indebted countries exceeded their capital in the early 1980s were allowed several years to adjust – but there was no doubt that they would have to adjust" (Turner, 2000).

What is to be done?

The current approach to reform of the international financial architecture is increasing the homogeneity in behaviour, is struggling to construct its policy proposals to take account of the inter-relationship between micro-economic risk taking and macro-economic performance, and is still trapped within the historical perspective of the nation state. In these circumstances the likely consequences cannot be regarded with equanimity.

A better response to the economic losses imposed by the increasing volatility of financial markets should be to move in a rather different direction. Reforms should seek to increase liquidity by enhancing heterogeneity, should strengthen the forces of underpinning stabilising convention, should take full account of the possibilities of macro-economic measures to reduce systemic risk, and should be conceived on an international scale.

There is an urgent need for a detailed consideration of the relationship between enhanced risk management techniques and homogenisation. In normal times, when risk is predominantly confined to the individual institution, modern risk management is likely to reduce the probability of failure, and so be substantially stability enhancing. Modern risk management will tend to keep firms further from the cliff edge. But it is when the interlinkages between firms and markets come to dominate behaviour, i.e. at times of extreme events, that the homogenising impact of common risk management techniques is likely to predominate, increasing instability and market volatility. Effective regulation in normal times creates destructive behaviour at times of crisis.

So what is to be done?

First, on the need to increase heterogeneity - faced with a collapse in liquidity in the 1930s the policy response was to severely segment financial markets, a market structure that was further reinforced by the Bretton Woods agreement. Controlled financial markets served the immediate post-war era rather well.

But is there no other way that doesn't involve the cry of "forward to the 1950s"?

There is. The benefits of an open international financial system can be secured if there is a far greater recognition of the risks imposed on society by individual risk-taking investors, and that investors are made to bear a fairer proportion of the social costs of those risks. This would mean paying far greater attention to the accumulation of macroeconomic risks that tend to signal the transition from normal times to extreme events, and developing a far more powerful structure of international rules and charges associated with risk taking investment. For example, the increasing size of bank mergers represents a threat to systemic stability. Yet the banks are not paying the costs of the potential risk they create – they reap the benefits, but shift the costs onto society at large. Of course, the externality varies between banks and financial institutions according to their size, ability to manage risk, and so on. But the externality should attract a charge. Similarly, proposals to impose bailout requirements on lenders and to permit repayment standstills in the face of financial crises are steps in this direction. These measures will tend to increase the cost of

funds. But this is what should happen, since too often funds are available today, and risks are taken, at well below their true social cost.

Second, the failure of rules in the past has been primarily due to their becoming outdated. What is necessary is that there should be an integrated international policy function with the powers to develop a more flexible structure of rules and rule making. And, of course, there need to be appropriate surveillance and enforcement powers, applicable to all (not just countries that need funding from the IMF).

Third, a new financial architecture must encompass macro-economic concerns. The Financial Stability Forum was founded in response to these concerns, linking regulators with treasury departments as well as central banks. This approach should be extended, particularly with respect to developing countries. They should be permitted to substitute macro-economic controls for the resource intensive firm-level regulation that is espoused in the current FSAP approach.

Fourth, the rules need to make greater use of the new work on extreme, rare events⁹, and this too should be integrated with a macro view.

Fifth, it should be acknowledged that in pursuing all these goals efficiency requires that the domain of the regulator should be the same as the domain of the market. None of the standard tasks of a financial regulator – authorisation, the provision of information, surveillance, enforcement, and the development of policy – are currently performed in a coherent manner in international markets.

The establishment of a World Financial Authority or WFA was recommended in 1998 (Eatwell and Taylor, 1998). The role of the WFA was to create a framework of truly *international* regulation. The probability of a WFA being actually established is not far from zero. But the proposition is valuable as a test of the regulatory needs of today's liberal financial markets. Whether a WFA is created or not, the tasks that the model WFA should perform must be performed by someone if international financial markets are to operate efficiently.

Today an institutional structure of international financial regulation is emerging which embodies, albeit imperfectly, a few of the features of an idealised WFA.

The authorisation function is the responsibility of national regulators, with access to markets being determined by agreements specifying the terms of mutual recognition.

The information function is performed by national regulators supplemented by the international financial institutions, particularly the BIS and by the International Financial Reporting Standards of the International Accounting Standards Board.

The surveillance function is performed by national regulators, supplemented now by the World Bank-IMF financial sector programme¹⁰.

9. See Medova and Kyriacou, (2002)

10. In addition the international surveillance of financial crime, particularly money laundering, is conducted by the Financial Action Task Force (see Alexander, 2000).

The enforcement function is the responsibility of national regulators, but is being developed internationally as an implicit outcome of the World Bank-IMF financial sector programme.

The policy function is in the hands of the BIS committees, IOSCO and the IAIS, the Financial Stability Forum, the IMF, and national authorities.

This list of international regulatory activities has 3 major features:

1. If the same list were compiled 10 years ago most of the regulatory functions would lack any international dimension. Today in all areas other than authorisation, international bodies are taking up some of the regulatory tasks.
2. The list deals only with major international regulatory developments, and omits the growth of *regional* regulation, notably in the European Union.
3. Measured against the template of a WFA the international regulatory structure is limited, patchy, even incoherent. It portrays a response to crises rather than a coherent reaction to the international propagation of systemic risk.

Conclusions

A number of principles that should guide the design of the new international financial architecture:

full cognisance should be taken of the social costs of the externality of systemic risk, particularly its macro-economic impact;

homogeneity of market behaviour is a threat to liquidity, particularly at times of high volatility when convention has broken down, it is therefore important to enhance heterogeneity wherever possible;

and financial markets are today international, and hence policy formation and policy implementation should be international in scope too.

On the basis of these principles it would be possible to design a regulatory structure that would maximise the social benefit of open financial markets.

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