

Some preliminary proposals for re-regulating financial systems*

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Abstract - Our opinion is that we are facing the last episode of a string of crises originated by the structural evolution of the financial systems in the last decades. Adopting a systemic approach, we summarise this evolution in six critical points and show the necessity of a more radical overhaul of the regulatory framework than the one up to now coming from national and international authorities. A preliminary scheme of consistent regulatory measures is then proposed, aiming at an acceptable degree of systemic stability while reasserting the fundamental function of the financial sector of promoting private productive investments and innovation.

JEL: G2, F33, E44, G01, G28

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1. Introduction

While policy-makers are trying to impede the current crisis producing a deep and prolonged global recession, regulatory authorities are beginning to discuss the modifications to introduce to the current schemes of financial regulation and supervision in order to avert future repetitions of similar events. It is curious that, prompted by the seriousness and costs of the crisis, the authorities and the financial industry are offering rather homogeneous analyses of its causes and of remedies.¹

The current financial structure is the result of a process that started some decades ago when the management of international imbalances was increasingly left into the hands

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¹ See, for instance, CRMPG III (2008), EC (2008), Financial Stability Forum (2008a, 2008b), G20 (2008), IIF (2008), IMF (2008).

of private finance. This required both a more generalised opening of the capital account of the balance of payments and a mix of deregulation, in effect a liberalisation, and re-regulation of national financial systems. At that time the change was depicted as the passage from a structural to a prudential approach to financial regulation. Basically the new vision asserts that banks must be free to assume all types and amounts of risks they want at the condition that they hedge them; and that capital is the best way for hedging unexpected risks. For the banking sector the new approach has taken the form of the international standard produced by the Basel Committee of Banking Supervision (BCBS), initially based on hedging only credit risks with a minimum risk-sensitive capitalisation. In particular, the USA progressively abandoned the defences built by the Glass-Steagall Act, complementing their previous bank supervisory process with Basel requirements, while leaving investment banks practically unregulated. As a result of a first experience with the application of what is now termed Basel I, market risk was later added for computing risk-weighted assets. In 2004 a new framework was issued, termed Basel II, whose aim is to render capital requirements more sensitive to a wider set of risks. Accepting the advances made by financial modelling, Basel II tends to make regulatory capital converge to the economic capital computed using banks' best practices. In Europe the new scheme has become effective starting from January 2008, while, before the current crisis erupted, the USA and other countries planned to adopt it in 2009 or later.

The old and the new Capital Accord are built following a bottom up, or micro-stability approach, according to which resilient single banks help to construct a resilient banking system. The BCBS is clear that its standard constitutes a necessary though not a sufficient condition to attain systemic resilience. The Core Principles for Effective Banking Supervision (BCBS 1997, 2006a, 2006b) state that a set of institutional and policy preconditions are necessary to render prudential regulation effective. In Minskyan terms, an effective systemic cushion of safety must complement micro-safety margins based on capitalisation.

The first response of international and national authorities to the current crisis contained proposals that did not envisage significant changes to the above design. In their view, financial crises always existed and we will have to live with them in the future. Their attention was focused on idiosyncratic aspects of the financial turmoil originated in the sub-prime sector, with a generalisation that did not go beyond the securitisation processes. The design of the financial structure was considered as basically sound. At the international level, the re-direction of the IMF to primarily assume the role of global supervisor for the application of international standards and codes was reasserted and

stressed.² As for regulation, the adoption of Basel II must be hastened, although introducing some changes to cope with opacity and distorted incentives responsible for moral hazard and conflict of interests. More severe stress tests should make capitalisation able to absorb shocks, while for liquidity requirements only some generic principle is for the moment offered. As it has been repeatedly asserted, e.g. by the President of the Financial Stability Forum, revisions of the current regulation must not interfere with market forces, particularly with their pursuit of financial innovations.

With the deepening of the crisis, three recent reports (G-30, ICBM Geneva Reports, de Larosière) go a step further, stressing its systemic aspects. Their proposal is to complement the micro-prudential approach of Basel with macro-prudential measures. In fact, the current crisis has patently shown the incapability of the preconditions singled out in the Core Principles to maintain financial instability within acceptable limits. The main interventions should concern pro-cyclicality (to oppose with capital and liquidity buffers and a revision of fair value accounting), the extension of supervision to all systemically relevant intermediaries and the standardisation of OTC derivatives, with the creation of centralised clearings. Although apparently presenting radical regulatory proposals, some of which undoubtedly useful, they do not consider the Basel scheme as fundamentally flawed, just incomplete. Hence, their proposals add to the new Basel Accord further rules and enlarge on existing principles, meant to complete its micro-stability measures with macro-stability ones.

From a theoretical standpoint the current regulatory approach might appear schizophrenic. On the one side, it follows 'market fundamentalism' leaving market forces free, equating competition and freedom, and taking the latter as the base for efficiency and long-term stability. On the other side, it follows the 'market failure approach' considering that rules on capitalisation are necessary to fill a gap on autonomous market decisions and producing with the Second Pillar of Basel II a sort of Manual to which good bankers should conform their risk management practices. However, these theoretical approaches have more common features than conflicting ones. In both cases the analyses are based on micro-partial models, which are essentially static and uncertainty-free. Macroeconomics has been reduced to the search for its micro-foundations, at best full of agency problems and moral hazard behaviours. It is only since the dangers posed by the current crisis were realised that the word 'systemic' is not being laughed at, as well as the disturbing notion that macro is not necessarily the sum of representative micros. The now much-cited, and

² This and vague expressions on cooperation and increasing IMF's lending capacity is all the Declaration of the November G-20's Washington Summit (G-20, 2008) contains on international strategy.

often misquoted, Hyman Minsky was considered an eccentric, if not a charlatan. As for the Basel scheme, the array of agency problems and moral hazard behaviours revealed by the current crisis, which push for introducing amendments to the New Accord, is a symptom that its approach is bended towards market fundamentalism. More important, however, is the nature of the advanced methodologies for credit, market and operational risks which the Basel Committee considers the long-term landing-place for all banks. These methodologies are essentially based on the hypotheses that markets are efficient and the so-called unexpected risks may be estimated. The Basel Committee has derived these methodologies from what it considers the industry's autonomous 'best practices' and fundamentally looks for regulatory capital to conform to the economic capital banks compute following those practices. The LTCM lection went unheard.

Our opinion is that the current crisis is not specific: although the turmoil originated in the mortgage markets, the crisis is not a sub-prime one. Furthermore, too scant attention has been paid to the structural fragilities stemming from the international financial architecture. Starting from the observation that financial crises are becoming more frequent and violent, the first part of the paper tries to argue that their roots go deeper and have more common features than has been commonly recognised. Hence, with reference to the financial evolution of the last decades, an attempt is made to single out six main features responsible for the extreme fragility assumed by the financial sector. The second part of the paper builds on the previous analysis in order to present a very preliminary proposal for re-regulating the financial system. We mean to radically depart from the approach hitherto adopted, which has been based on prudential risk measurements; our proposal is based on risks control and some structural rules. We also explicitly favour a regulatory over-reaction given that the fiscal and quasi-fiscal costs of the current crisis will leave governments and central banks with very few ammunitions for fighting another financial war in the next decade or more.

2. The evolution of financial fragility in six points

Before the current crisis erupted, it was commonly held that financial liberalisation, de-regulation and financial innovation processes had produced significant net positive economic results.³ The question is too complex to be dealt with here in some details. However, some rough indicators for the US economy cast at least some doubts on this position. As the following table shows, if we compare the 1954-71 period with the more recent 1983-2008 one, the latter presents a lower average rate of growth and a lower volatility of GDP, while being affected by several mayor bank and market crises.

³ This position is also shared by a prudent observer as Claudio Borio (2007).

Table 1 - USA

Periods	Average rate of growth of GDP, at constant prices (%)	Normalised SD of the rate of change of GDP	Number of mayor financial crises	International setting
1954-1971	3.70	0.67	0	Bretton Woods
1983-2008	3.18	0.45	7	Private finance

Despite the wave of important innovations characterising the real sector in the second period, it does not seem that the more innovative and internationally active financial sector has been able to raise the average rate of growth of US GDP (note that the trend of GDP growth for the entire period is downward sloping). Furthermore, we might have expected that the more unstable macro-economic environment of the first period should have caused more injuries to the financial sector: the opposite is true. Hence, without appearing to be more helpful for real growth, and despite a more effective Taylor-type macro-management by the Fed and US Treasury, the financial sector has recently produced several mayor financial crises possessing predominant endogenous features.

2.1 International structural disequilibria

To understand the repetition of systemic, or potentially systemic, financial crises we have to trace its roots on the evolution of the international financial system, at least since the '970s.

The Bretton Woods Accord was borne with several serious limits: it was unipolar and asymmetric, non-systemic, i.e. thought for isolated imbalances, and able to treat only temporary balance of payment disequilibria. In short, its reference was a structurally static global economy.

The world economy is, on the contrary, structurally dynamic. Uneven regional development and growth processes produce, also in a context of mature technologies, a re-design of the map of economic power and persistent balance of payment disequilibria.⁴ History shows how the repression of the endogenous tendency to economic multipolarity may lead to any sort of crises. The Second Post-War period saw the increasing emergence of a multipolar world economy, with new actors asking to redefine the distribution of value along the production chain, from inputs to intermediate and final goods and services. Balance of payment disequilibria coming from such processes are neither temporary nor idiosyncratic. An approach to solve those disequilibria should then be both systemic and oriented to medium-long term solutions.

⁴ With persistent imbalances we intend balance of payment current account disequilibria computed with reference to sustainable social and political conditions.

The breaking of the Bretton Woods system in the early '970s did not lead to re-design the public financial international architecture along multipolar lines. Instead, the private international finance was definitely charged with managing problems that were essentially public, and persistent balance of payment disequilibria came to be increasingly financed by means of private capital flows possessing high mobility and volatility.⁵ In Minskyan terms, international finance produced speculative positions, easily escalating into ponzi ones. The ensuing fragility puts the system on the verge of crises every time large and non transitory balance of payments disequilibria emerge.

This result worsens when clusters of technological innovations are considered. First, they tend to break previous equilibria, re-designing the map of relative national and international economic positions, with lasting consequences on balance of payment disequilibria. Second, as Carlota Perez shows in a book of some years ago (Perez 2002), periods of strong technological discontinuities lead finance to emerge as the dominant actor, normally accompanied by booms and busts.⁶

In the last decades these two quantitative and technological dynamics were present, with their interaction amplifying global financial fragility. Past crises as well as the current one must necessarily be considered inside this international picture. When it is stated that in the last period the international economy was 'awash with liquidity', it should be specified that persistent balance of payments disequilibria pose liquidity problems as far as they are predominantly managed by private intermediaries and markets.

2.2 Regulation based on liberalisation, capitalisation and risk measurement

As we said in the Introduction, the logic behind the current regulatory approach is that intermediaries, banks in particular, should be free to take all types and quantities of risks they want as far as these risks are properly hedged. While anticipated losses should be hedged by provisions, unanticipated ones find their proper cushion in capitalisation. As Merton concisely puts it:

The management of risk has traditionally focussed on capital. Equity capital is the 'cushion' for absorbing risks of the institution. It is a wonderful, all-purpose cushion. Why? Because management need not know what the source of the unanticipated loss is. They do not have to predict the source of the loss, because equity protects the firm against all form of risk; it is in that sense an all-purpose cushion and thus it is very attractive for managing risk. As we all know, equity capital also can be quite expensive for exactly that reason. One can formally employ theories of agency costs, taxation and so forth to supply reasons why equity financing can be expensive. (R. Merton, 1995, p.464).

⁵ On these processes see Cornfold and Kregel (1996) and Kregel (2004), (2008a), (2008b).

⁶ See also Burlamaqui and Kregel (2004).

Although we “need not know what the source of the unanticipated loss is”, we must, however, be able to measure, or more precisely to estimate, its underlying risks. In addition, since capital is “quite expensive”, we cannot expect that capitalisation may reach the level required to cover really extreme events. It follows that such a regulatory approach cannot be calibrated to effectively hedge systemic events. Its bottom-up, or micro-stability, approach may then be effective for cushioning the banking system in normal times, i.e. under conditions of restricted macroeconomic instability. Other and more general conditions are necessary to protect the financial system from being subject to excessive fluctuations, whose downward severity easily wipes out any affordable amount of capital.

That is precisely the route taken by the Basel Accords, which adopt a bottom-up approach, do not limit risk-bearing, are based on capitalisation and explicitly require the existence of systemic preconditions to make them effective (Core Principles). In particular, Basel II:

- Tends to make regulatory capital to converge to the economic capital that banks compute utilising industry’s best risk practices.
- Consequently accepts an approach based on ‘fine tuning’ estimations of risks.
- Adopts a Value at Risk methodology, which in practice smoothes the occurrence and severity of systemic events.

The Basel’s construction rests on several critical points.

First, its micro-stability approach puts heavy responsibilities for systemic protection on a series of preconditions. Some of these preconditions should play a pre-emptive role, especially the ones based on institutional features; the others, mainly safety nets and fiscal and monetary policies, should produce a systemic cushion capable of absorbing and smoothing excesses of instability hitting the financial and real systems. However, the institutional preconditions singled out by the Core Principles are meant to ease the working of a liberalised financial system, not to impede its endogenous excesses, which may on the contrary be left freer to operate. Policy and safety nets preconditions are not capable to prevent endogenous systemic crises and are severely tested when negative systemic events appear. A high instability, with its large and sudden call on liquidity and virulent financial and real contagions, seriously strains the resources of safety nets, central banks and governments, up to the point that even the more advanced economies find it hard to cope with them. This division of responsibilities between supervisors and policy makers then produce a void in the required systemic cushion, so that we may expect this sort of regulation to be at best effective in normal times. As we have shown elsewhere (Montanaro and Tonveronachi 2008b), calls by policy makers for more severe standards

applied by supervisors are not justified if they mean that Basel's Second Pillar should assume a macro-stability role.

Second, in a liberalised financial system, where intermediaries are free to assume and endogenously create all the risk they like, it is highly questionable that an effective regulatory scheme may be built on a fine tuning approach to risks. The techniques employed for estimating risks *de facto* assume the existence of a sort of invariable mathematical generator, whose output, although complex, may be in time understood and future events foreseen with a high degree of confidence.⁷ If, on the contrary and partly due to endogenous forces, the generator shifts in time to configurations that produce different and unexpected wave structures, the information content of the past becomes a poor guide for the future.⁸ When changes reach, especially in a rather short period, a critical level, quantitative statistical estimations come to be the base for significant risk mispricing. Since public authorities have no superior knowledge about the shifting generator, their own action follows what, without humour, is called market sentiment. Such distortions are likely to increase when supervisors, adopting Basel II's approach, are obliged to follow the industry along the risk-shifting and risk-mitigation chain, which requires at each step a fine tuning estimation of risks. The multiplication of de-structured and re-structured products increases the probability of mispricing, especially for tailored instruments whose value is not checked in secondary markets.

Again, the regulatory structure appears to be effective when all is going well, i.e. when it is less necessary. In reality, this regulatory system should require extreme systemic events not to occur or being foreseen well in advance; unfortunately this is not what reality is showing with increasing force since at least four decades.

Dictating homogeneous and distorted methodologies to all banks, Basel's regulation also decreases diversity, thus increasing herding-type behaviours (endogenous instability) and consequently reducing systemic liquidity.

Third, although systemic liquidity problems have recently shown their full force, they find no equal status with the risks dealt with in Pillar I. The indications we have so far on the revision of their regulatory treatment seem to follow the usual bottom up approach accompanied by stress testing. No fresh reflexions are coming on the pyramid of liquidity (see below, par. 2.3).

A regulation based on the freedom of risk-taking also means freedom in combining risks inside old and new forms of intermediaries, hence with no operational limits on typologies of assets and on counterparties. This leads to far-reaching developments. As

⁷ This image has been suggested by the paper of Taleb and Pilpel (2004).

⁸ See also Danielsson and Shin (2002) and Danielsson (2008).

we will see in the following paragraphs, this approach allows new products to multiply and disseminate (the so-called financial innovation), higher capital contiguity and larger size and increased complexity of intermediaries.⁹ It also favours agency problems, as the current crisis has so violently exposed. Following its inner logic, the current regulatory approach may deal with agency problems in two ways: disseminating principles of best practices and eventually pushing for the adoption of internal Chinese Walls, whose monitoring by supervisors encounters, however, serious difficulties; and stress testing operational risk to build up more capital buffer, which means to be aware of the existence of relevant deviations from those good practices. It is like government inviting a tax evader to set aside some money for hedging the risk of being detected.

The concentration of recent official recommendations on more severe stress tests makes it plain the fragility of the entire regulatory structure. Adding buffers to buffers, the result is an increase in regulatory costs without rendering banks systemically resilient: systemic crises wipe-out any reasonable amount of capital and any micro-designed liquidity buffer. A serious inconsistency appears from supervision applying rising, distorted and ineffective regulatory costs to tackle situations whose seriousness is amplified by the laissez-faire approach on which the current regulatory architecture is based.

2.3 The financial pyramid and liquidity

The financial evolution of the last three decades produced an impressive global increase of financial deepening. Measured in terms of GDP, a huge pyramid of financial instruments has been built over a reduced primary and secondary liquidity base, producing a financial multiplier, or leverage, of an enormous magnitude.¹⁰

Ordering the layers of the financial pyramid in terms of decreasing qualities of liquidity,¹¹ we have: central bank's liabilities, treasury bonds, commercial banks' liabilities, private securities and finally derivatives (particularly those traded in OTC markets). The point is that the layers that experienced the most rapid growth are the ones whose liquidity is of a lower systemic quality, given its dependence on market volatility. Furthermore, more fragile Minskyan positions gather in those layers. As we witness during a financial turmoil, the flight to quality means flight to liquidity of a higher order. Hence we have an upward

⁹ The increased size and complexity of financial institutions is also the result of a regulation that allowed intermediaries to mix banking, securities and insurance. The 1999 repeal of the US Glass-Steagall received an overwhelming approval by economists for its beneficial effects on risk diversification, thus contributing to safety and soundness of banking. See, for example, Barth, Brumbaugh and Wilcox (2000). See also Barth, Caprio and Levine (2000).

¹⁰ For the effects of the evolution of the last decades on financial deepening see Borio (2007) and Schinasi (2007).

¹¹ We follow the definition of liquidity in terms of value, probability and time.

pressure to produce enormous layers of liquidity of an inferior quality during periods of bonanza, whose cumulated fragility inevitably leads to ruinous portfolios' unbundling, or deleveraging. Serious problems derive from both the enormous size and the volatility of the financial pyramid.

The current system has no defence against huge increases of the financial multiplier and its sudden busts. Nor any institutional changes have been adopted to structurally enhance the ability of the layers of better quality to sustain the violent increases of the demand for it coming from the deflation of the other layers. On the contrary, the belief that central banks must pursue inflation targeting policies and governments must contain their deficits has been reinforced, thus slowing down policy reactions. Furthermore, the huge size reached by the more volatile part of the pyramid puts enormous strains on public resources and makes emergency public policies less effective.

The recent evolution of financial systems also polluted an important slice of the better layers of liquidity. The increased contiguity between banks and markets has increased the share of banks' assets and liabilities that depends on market liquidity, thus subjecting the whole banking system and their traditional liabilities to increased funding liquidity risks. Furthermore, the practical disappearance of liquidity requirements and the inefficacy of minimum capital requirements have significantly increased banks' leverage measured with reference to un-weighted assets. Banks then actively participate to inflate the financial multiplier and to deleveraging.

2.4 The financial pyramid and debt

The increase of financial deepening has been based on the growth of indebtedness by non financial sectors, such as households. The softening of liquidity constraints was lifted by new financial products; however, its roots are to be found in the endogenous push to financial growth unleashed by the liberalisation of the financial sector.

For simplicity let's distinguish between the maximum potential growth permitted by the financial sector (FG) and the sustainable growth coming from real conditions (RG). Freed from liquidity requirements and eluding capital regulation, financial intermediaries have been able to strengthen their quest for value, thus enhancing the potential rate of organic growth of the whole financial sector. An FG higher than RG raises the question if it can permanently lift RG enough to equilibrate the two. The point is that the increase of the real growth potential requires stressing the ability of the financial system not just to choose a correct allocation of resources; it should also unrealistically push for the continuous creation of new winning innovations in the real sector at a pace determined by its potential. In these conditions a disequilibrium between FG and RG normally results. One solution is

to weaken the liquidity constraint for the non financial sector, thus pushing aggregate demand and debt.

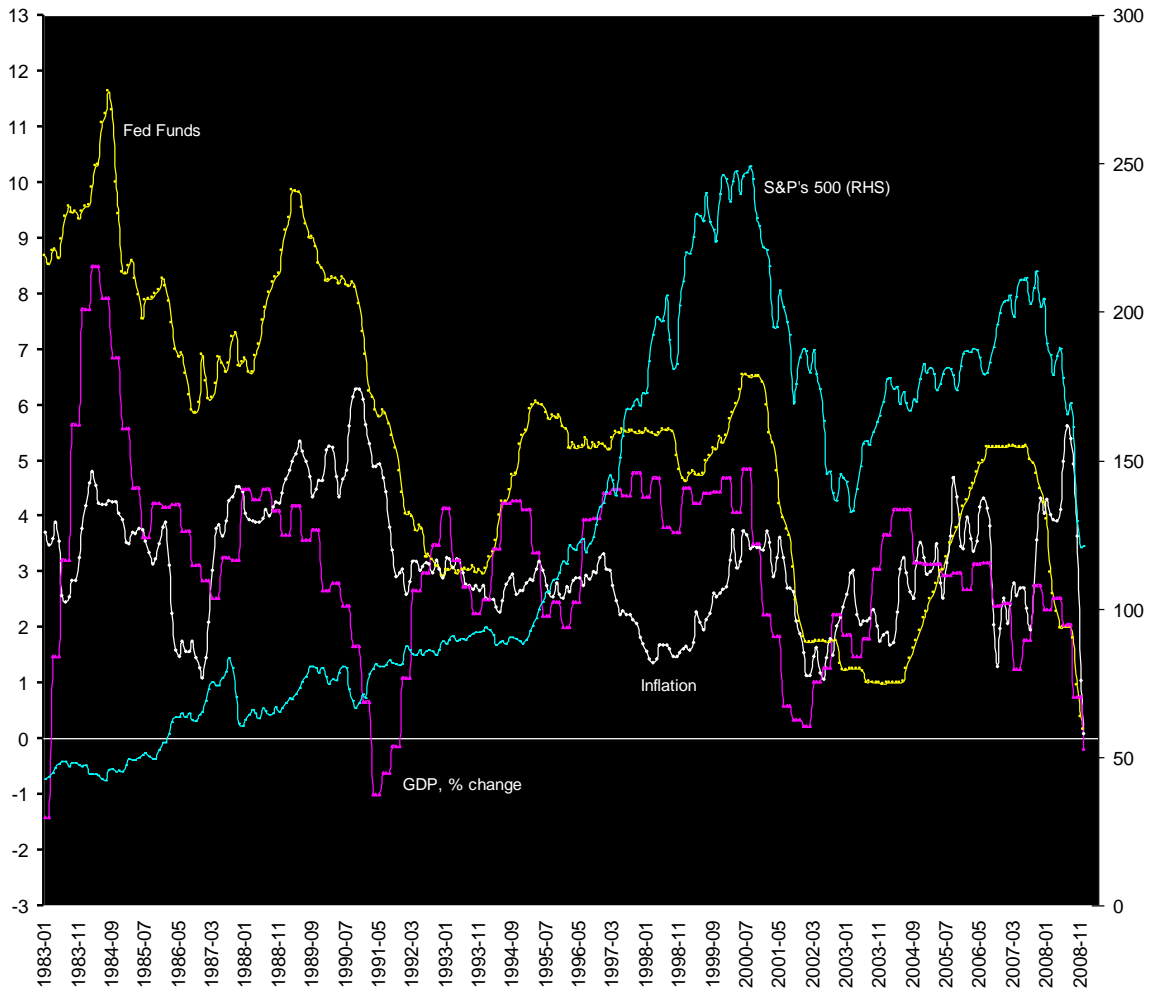
This process cannot go on indefinitely since the increasing burden of debt service subtracts resources to the dynamics of the aggregate demand and, in Minskyan terms, lowers the safety margins of the indebted units. Their fragility increases, up to multiply the importance of ponzi positions. When many units reach the point where current cash flows are insufficient for debt servicing, and are obliged to refinance their position with new debt, debt assumes an autonomous upward dynamics. The entire economy becomes increasingly sensitive to financial conditions.

Highly leveraged-speculative financial institutions (par. 2.3) then combine with fragile non-financial ones. A highly indebted economy, full of weak speculative and ponzi positions, structurally requires low interest rates. An inconsistency is thus generated between the (lower) interest rates required to maintain financial stability and the (higher) ones necessary for monetary stability. Spells of easy monetary policy prompted by actual or expected financial turbulences validates fragile positions and push for their further accumulation. Growth and fragility then progress together. Any attempt to resume a monetary stance more consistent with monetary stability inevitably produces financial distress, prompting a new spell of easy money. Eventually the entire enhanced growth process comes to a halt creating the conditions for a financial crisis followed by a debt deflation. Since the crisis leads to an overreaction in deleveraging, repositioning the system on a stable and sustainable path of indebtedness takes time: long periods of debt deflation are highly probable.

The experience of the US in the last 25 years seems to follow this type of Minskyan repeated process. As shown in figure 1, the movements of the Fed Funds rate have increasingly very little to do with inflation. Every time the Fed tried to push interest rates towards 'normal' conditions it was obliged to go back, and increasingly so. We have then a long-term Minsky Moment that finally exploded in 2008.

Figure 1

USA. January 1983 - December 2008



LEGENDA

Fed Funds = average monthly nominal effective rate

GDP, % change = quarterly % change on year earlier

Inflation = CPI monthly % change on year earlier

S&P's 500 = average monthly index at constant prices, CPI January 1959=100

Correlations	FF vs.	FF vs.	FF vs.	S&P's vs.
	Inflation	GDP	S&P's	GDP
1983 - 1993	0.43	0.47	-0.77	-0.53
1994 - 2008	0.13	0.47	0.17	0.11

In Minsky's terminology, it is the financial system's success in terms of its high profitability that increases the fragility of the entire system. Phases of leveraging and deleveraging may then be read as periods of over-lending and sub-lending characterised by systemic risk mispricing.

2.5 Capital contiguity

Capital contiguity is an old phenomenon, especially in countries at a low stage of development. In these countries wealth concentration often leads to cross-ownership between the real and financial sector, so that when a financial crisis hits it becomes difficult to find strong shareholders able to refinance banks. This is also why foreign direct financial investments are seen as helping to strengthen the financial sector.¹² In many case public intervention is called for, being the only source of non contiguous capital.

The same effect comes from the dissemination of financial instruments whose risks are maintained at an idiosyncratic level as far as their amount remains contained. This is particularly the case for derivative instruments traded among financial operators, offering insurance against market, credit and counterparty risks. Their dissemination produces an extreme correlation of portfolios, with the impossibility to honour these contracts in case of negative systemic events. In this context counterparty risk becomes a leading player. The principle is simple and well-known: a system cannot insure itself.

Furthermore, while the shift and dissemination of financial risks outside the financial sector is normally considered as strengthening its resilience, it also increases the contiguity of capital among the various actors of the economy. In other terms, the dissemination of financial instruments for risk transfer and risk mitigation enhances the fluidity of the economy in good times, but increasingly builds into a systemic threat.¹³ We have, therefore, a further case of systemic risk mispricing.

2.6 Systemic dimension of financial intermediaries

For a long period the extent and consequences of the too-big-to-fail problem were not fully realised. The systemic threat is posed not just by each single large institution but by a cluster of closely interconnected large ones.

The enormous increase of their size and complexity was eased by their international role (see before, par. 2.1) and supported by some piece of theory according to which large size leads to efficiency, which in turn is a necessary condition for long-term stability. This approach also served to strengthen forbearance by weak anti-trust authorities, especially when M&As were used to save failing banks. The ignorance on risk concentration now expressed by supervisors and policy-makers is then overplayed.

¹² However, the current crisis shows that foreign banks may also export their fragilities.

¹³ These instruments and mitigation techniques are now being criticised for the opacity that long chains of risk transfer produce on the understanding of where risks go and how much they are concentrated. This is relevant for contagion; it is, however, the impossibility of endogenous systemic hedging that is at the heart of many current problems.

The '980s foreign debt crisis should have alerted on the danger posed by the common exposure to risks by few large international banks. From that episode the right lesson was not learned. The only material result was the Basel Capital Accord, which afterwards resulted completely ineffective to prevent further systemic crises. In the following years the size of international institutions have exploded, while their micro-justifications were vanishing as financial innovations came to permit scale and scope economies at much lower volumes of activity, and an increasing number of studies have shown that diseconomies of scale are now clearly present.

Finally, by dictating common and risk-sensitive reactions to the same events, Basel regulatory standards, especially when complemented with fair value accounting, add enormously to global instability when few large, complex and interconnected institutions are left to dominate the international arena.

3. A new international financial architecture

Profound changes in the organisation of international financial relations should be at the forefront of proposals aimed at making national and global financial systems more resilient. A new approach is badly needed after having experienced the fallacies of laissez-faire international capital allocation models and the extreme damages produced by the private management of international funds.¹⁴ Structural balance of payments disequilibria have to be met with structural financing, which cannot be private.

Participants at an eventual Bretton Woods II should stick to the physiology of international financial relations, i.e. to financing international trade and foreign direct investments. The capital and financial account of the balance of payment should be left open for only these items, with limits given by conditions of long-term sustainability of foreign debt. This international architecture would also enlarge the scope for country-specific features in regulatory schemes built on a common international base.

All this requires multilateral public international institutions assuming not just the role of the international lender of last resort, but of lender of first resort for non transitory imbalances that should be linked to medium- or long-term conditionalities. The IMF and World Bank should then stop adopting standards and codes produced by external institutions, such as the Basel Committee, IOSCO, IASB, etc., when playing their recently

¹⁴ For a discussion of the post-war experience and of alternative solutions to global imbalances, see Cornfold and Kregel (1996).

invented role as international public rating agencies.¹⁵ All these standards suffer from being based on a micro-stability and not coordinated approach and linked to a laissez-faire conception of national and global financial systems.¹⁶

In the proposed new context these institutions should be given a real multilateral governance, be enforced with powers to assess and sanction also too-big-to-be-monitored countries (such as the USA), take a global long-term perspective, also working as public international development banks.

The alternatives to this approach are leaving substantially things as they stand, or retreating into regional competing blocks, each with its own IMF and WB. The first alternative will go on producing more frequent and violent global systemic crises. The second alternative does not solve problems of global inconsistencies and could easily escalate into a new form of beggar thy neighbour, although it could be thought as a starting point for a true global solution.

We are well aware of the political difficulties that a radical solution along the previous lines will encounter, not least for the enormous damage it would inflict to private interests, especially those of large financial intermediaries. Their size, status and returns would receive a strong blow. The system designed on their freedom of action was repeatedly given its chance, and it failed. We must imagine what a Vegan observer would think of countries and regions left to the mercy of the vagaries of such private interests, ready to become social costs, even miseries. As economists we have the duty to look for solutions that better the well-being of societies, leaving to politicians the responsibility of choice. Each category is open to errors. However, it is high time that also academics and professional journals were evaluated according a social impact factor.

4. From a risk-measurement to a risk-control approach to financial regulation

Although a solution for the international management of financial flows is critical for attaining a higher global resilience, a new set of measures of financial regulations, alternative to the existing ones, may be useful per se. Thought to be consistent with the international arrangements sketched above, they may be, however, independently implemented.

¹⁵ We refer to the Financial Stability Assessment Program jointly coordinated by the IMF and World Bank.

¹⁶ A discussion of these problems may be found in Montanaro and Tonveronachi (2008a)

From the previous synthetic analysis we derive that radical changes have to be made to the engine of the financial vehicle, not just some patches in its shock absorbers. A new perspective must be taken where:

1 - The financial system must go back to its fundamental role, i.e. to allocate financial resources to the economy. A casino style financial system, creating paper value just to force changes in wealth distribution inside and outside it, with systemic distortions in resource allocation, enhanced fragility and frequent bubbles and busts, represents a net cost for the economy. From a social perspective let's for example think to the effects it creates for social welfare nets, increasingly based on private financial instruments. This means reverting financial deepening to functional and sustainable dimensions and cleansing the financial pyramid of the dominance of fragile forms of liquidity.

2 - Financial regulation must be designed to be effective to contain the force, frequency and social costs of systemic crises without relying upon imaginary strong systemic preconditions.

3 - If some types of risks are 'hard to value', pose systemic threats and no micro-hedging is effective to contain their consequences, simply they must not be created, or in any case it must be impeded their transformation into systemic ones. In other terms, risks must be restricted to typologies and levels that can be managed at the micro-level (intermediaries), and monitored and contained at a systemic level (authorities). This means that structural regulatory measures must be reinserted in our tool box and that we must shift from a risk measurement-based regulation to one based on risk-control.

4 - Regulation must profoundly revise its incentives and forbearances in order to contain the size of financial intermediaries within functional and non-systemic limits. Furthermore, if different intermediaries are borne to perform different functions (banks, pension funds, insurance companies, etc.) they should be guided to adopt distinct strategies and policies, not to herd on homogeneous short-term reactions, often the result of regulation obliging to follow unreliable external or internal ratings.

In what follows we put forward a set of very preliminary proposals. They are just intended to show the direction that the above proposed new perspective could take for a regulatory scheme alternative to the Basel one. Furthermore, for the moment insurance companies and non-leveraged financial intermediaries are only partially taken into account.

4.1 Re-regulating financial intermediaries

A - Definitions

- Leveraged institutions are intermediaries collecting debt of any sort.
- Upper Tier 1 capital is equity capital plus disclosed reserves, net of participations in financial firms.
- Net Upper Tier 1 is Upper Tier 1 net of fixed assets.
- Leverage is defined as the ratio of un-weighted assets to Net Upper Tier 1.
- Liquidity requirements refer to cash and public debt with sovereign risk not higher than the home country's one, marked to market.
- The size of an intermediary is defined in terms of the value of total assets.
- The customer funding gap is defined as $(\text{Loans} - \text{Retail deposits})/\text{Loans}$.

B.1 - General rules

- Regulators should agree on "a positive list of financial instruments and institutions. Anything that is not explicitly allowed is forbidden." (Buiter, 2009)
- All leveraged institutions are regulated according to the common rules here proposed, although different quantitative requirements for capital and liquidity may be used in order to give intermediaries incentives consistent with their basic functions.
- Clear and binding crisis resolution procedures for all leveraged institutions must include conservatorship and receivership, dictating the transfer of losses to shareholders and unsecured creditors and change of management.
- Derivatives, contingent liabilities and commitments are not allowed to be registered as off-balance sheet items.
- Assets classified on the banking book cannot be shifted to the trading book.

B.2 - Rules for international financial intermediation

- Regulated institutions are forbidden any type of direct or indirect relation with countries whose institutions and markets do not possess a regulation homogenous with their own.
- Foreign banks are allowed only as subsidiaries incorporated according to the law of the host country. Subsidiaries must satisfy regulatory requirements dictated by the host country on a local basis. Intra-group lending of any sort is not allowed.

C - Structural rules

- Functional categories are defined for intermediaries, such as commercial banks, investment banks, etc., which must be constituted as separate legal entities also when within a single holding or group. All regulatory requirements must be observed both on a stand alone and consolidated basis.
- Non financial firms, directly or through their financial divisions, cannot operate in the fields proper of investment firms, banks and other financial intermediaries.
- Leveraged financial companies may only distribute and not produce insurance products, pension funds included. Insurance companies and pension funds cannot be included in holdings or groups in which leveraged institutions are present.
- Leveraged financial companies may only distribute products of Collective Investment Schemes (CIS). CIS cannot be included in holdings or groups in which leveraged intermediaries are present.
- Insurance companies, pension funds and CIS can hold participations in leveraged intermediaries. These participations cannot lead, directly or through voting syndicates, to the control of leveraged intermediaries.
- Regulated institutions are not allowed to enter into securities and derivative contracts not traded in organised secondary markets.

D - Prudential rules

D.1 - Capitalisation

- Maximum leverage ratios are imposed, distinguishing between banking and trading books. The maximum leverage for the trading book is lower than the one allowed for the banking book. The trading book is defined in terms of its gross value, at market prices.
- Maximum leverage requirements are established in relation to categories of intermediaries defined in terms of size intervals. Larger the size, significantly lower is the maximum permitted leverage ratio. The size refers to the consolidated balance-sheet distinguishing between the banking and the trading books.

D.2 - Liquidity

- Coefficients to limit maturity mismatches are introduced.

- Different liquidity requirements are introduced for the banking and the trading book.
- For the banking book the liquidity requirement is an increasing function both of the value of the book and of the customer funding gap.
- For the trading book the liquidity requirement is an increasing function of portfolio's market value.
- For both the banking and trading book, liquidity requirements must be consistent with systemic events.
- The above liquidity requirements take the form of reserves deposited at the central bank. These reserves cannot be mobilised and, when in the form of cash, are remunerated in accordance to the deposit facility rate decided by the monetary authority.

D.3 - Other measures for smoothing pro-cyclicality

- Dynamic provisions are introduced as a direct function of net income. Fiscal treatment of provisions must follow supervisory rules, and not vice versa.
- Fair value accounting is applied neither to the banking nor to the trading book. The banking book is evaluated at amortised cost. The trading book is marked to market. A specific Reserve Fund for Trading Losses, not eligible as own funds, is set up to smooth the effects of potential gains or losses on the income account.

D.4 - More on Capital contiguity

- Savings in capital, liquidity and provisions requirements coming from risk transfer is admitted only when all risks are integrally shifted to unconnected subjects. These operations lead to capital and liquidity savings only if no residual risks remain and no new obligations are linked to them.
- The direct or indirect participation of non-financial entities into the capital of financial firms is not allowed. Participations of leveraged institutions in non financial firms are limited according to criteria used for limiting concentration risk; to this end participations are added to loans exposures.

D.5 - Transparency

- False information to the supervisory authorities are considered as corporate fraud and are subject to prosecution for criminal penalties. They include all significant misstatements of provisions and allowances for credit and portfolio losses.

E - Non-leveraged financial institutions

- Non-leveraged financial institutions, such as money-market funds, investment funds, hedge funds, private equity funds, sovereign funds, must comply with rules of asset composition. In particular, minimum liquidity requirements are applied, with ratios that increase with their size.

4.3 Re-regulating markets

- In approving financial instruments to be traded in a market, the competent supervisory authority obliges markets to adopt strict standards of transparency and will not allow hard-to-value instruments.

- Market operators are not allowed to possess ownership stakes in organised markets.

- Minimums for haircuts and margin requirements must be observed, at levels consistent with extreme historical market volatility.

5. Comments on the above proposal

When compared to Basel II, the above proposal is disarmingly simple for intermediaries to implement and supervisors to monitor. Regulatory and supervisory costs that, especially for less developed countries, constitute a serious problem are minimised.

We are aware that any fixed rule is potentially destabilising. Linking liquidity requirements to wholesale funding, making capital and liquidity requirements function of market values and building ample reserves for market risks partly offset such effects. Our emphasis is, however, on the structural prevention of credit and market bubbles rather than relying only on automatic macro-stabilisers. Our belief is that stabilisers necessarily leaves excessive room for regulatory elusion and forbearance. Furthermore, the consequent necessity to evaluate systemic risks increases the probability for serious errors in risk evaluation. Therefore, our proposal focuses on structural limits and ex ante incentives. In the statistical jargon, the point is not the evaluate expected fat tails (just an impossible task), but to slim them.

The proposed regulatory framework should help to reach the four objectives stated in the previous paragraph 2. It may be helpful to underline some of its more specific features.

The framework tends to prevent regulatory arbitrage, including the existence of regulatory heavens; furthermore, it eliminates regulatory loopholes and black holes. So no 'shadow banking' will per permitted.

Restricting the holding of financial assets to those traded in organised secondary markets and forbidding the trading of hard-to-value financial instruments adds to the quality of liquidity and transparency.

However, transparency must assume more meaningful and binding features. A regime of previous authorisation applied to all intermediaries and instruments makes easier to define adequate standards of information. Putting false information to supervisors on the same foot as corporate fraud, regulatory enforcement is greatly strengthened.

To give more force to ex ante incentives, an effective system of crisis resolution will have to be adopted, whose credibility should rest on binding rules.

A point that has to be seriously considered relates to supervisory failures. The Basel Accords leave large discretionary powers to supervisors, push them towards a market-friendly attitude and require for them a regime of autonomy from the political power. As the current crisis shows, no supervisory authority has escaped criticisms of being guilty asleep. The structural approach characterising our proposal lessens the probability of such failures. Other measures will probably have to follow.

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