

# **The Pending Challenges in Global Financial Regulation Reform: Liquidity Insurance for Systemic Crises**

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## ***Abstract:***

The financial crisis which began in the summer of 2007 has its roots in the underestimation of systemic risk, in turn due to the absence of a macroprudential approach to the design of financial regulation and macroeconomic policies, as well as the excessively optimistic judgment of the originate-to-distribute model of banking. The ongoing process of reform of the global financial system aims to correct these mistakes. After a brief overview of the challenges ahead, this paper focuses on issues regarding the regulatory treatment of liquidity risk, looking at them through the eyes of the liquidity insurance arrangement proposed in Perotti and Suarez (2009).

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## 1. Introduction

The financial crisis which began in the summer of 2007 has its roots in a big collective mistake: the under-estimation of systemic risk. This mistake has two important dimensions. A first dimension is the absence of a macroprudential view in the design and practice of financial regulation and economic policy (especially monetary policy, but possibly also the fiscal and exchange rate policies that helped sustain global imbalances). A second dimension is the excessively optimistic judgment of the process of securitization and the supposed virtues of the originate-to-distribute (OTD) model of banking.

This second dimension of the mistake was partly sustained by the lack of data and historical experience with the OTD model, as well as by the general acceptance of naïve extrapolations of financial theory, regarding the virtues of diversification and greater market completeness. Potential asymmetric information and agency problems were overlooked, ignoring many of the insights provided by the academic corporate finance and banking literatures over the last 30 years.

The risks associated with in the OTD model of banking, including risks due to maturity mismatch, were not essentially different in nature to those present in the traditional domestically oriented banking systems. However, due to the effective lack of transparency of the OTD model, its greater complexity and interconnectedness, and the lack of prudence resulting from both ignorance and negligence, these risks were both less well understood and much more dangerous.

A truth evidenced by the crisis (but denied by many before its outburst) is that short-term wholesale liabilities constitute, in practice, a *less* stable source of funds for banks than retail deposits. This lower stability comes partly from the fact that banks' non-deposit, short-term debt lacks an arrangement similar to deposit insurance. Deposit insurance protects the financial system against traditional deposit runs by reassuring depositors about the value of their deposits when there are rumors about the likely insolvency of their banks. Short-term wholesale creditors did not get similar reassurances until very late in this crisis.

The news about the US housing losses around the summer of 2007 and the perception that these losses could spread in an unpredictable way throughout a system of interconnected global banks produced a modern form of global bank panic among money market investors. For banks that relied on international money markets for their funding, liquidity problems become immediately obvious. Many other banks suffered second-round effects, after being hit by direct losses, fire sales, asset price declines, higher margin calls, and costly deleveraging processes, all of which were part of intertwined downward spirals observed during the buildup of this great crisis (Brunnermeier, 2009).

The presumption that money markets without explicit government support were a good source of market discipline for banks and would always remain liquid for sufficiently solvent institutions was fundamentally wrong. The recognition of this in the current crisis came probably too late, after Lehman Brothers went bankrupt, and pushed governments into an ad hoc extension of guarantees and rescue of many institutions that, by then, were badly damaged. The massive rescue plans caused concern and scandal among ample groups of the public opinion, hostile to the idea of using taxpayers' money to assist institutions blamed for the crisis. Partly in response to this, the day-to-day management of the crisis then became accompanied by the plan to seriously and urgently reconsider regulation of the entire financial system.

In addition to the short-term need to calm the public with the announcement of a new financial architecture, the current re-regulatory efforts aim to correct some of the weaknesses and excesses perceived as causes of the crisis so as to, hopefully, minimize the risk and severity of any future financial crises.

In the remaining sections of this short paper I will first provide a brief overview of the main challenges in the current re-regulatory process (Section 2) and then focus on a more detailed discussion of issues regarding the regulatory treatment of liquidity risk and the institutions required to deal with it in a systemic crisis (Sections 3-6). In the longer second part I will extensively build on the proposal launched with Enrico Perotti in February 2009.<sup>1</sup>

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<sup>1</sup> See Perotti and Suarez (2009). For possible updates, check <http://www.cemfi.es/~suarez>.

## **2. Overview of the challenges in financial regulation reform**

There are at least two political economy reasons to believe that the current process of financial regulation reform constitutes a good window of opportunity to effectively improve the safety and soundness of the global financial system. The first reason is that the costs of doing it wrongly are still fresh in the memory of policy makers, practitioners and the general public. The second reason is that the financial industry is in its weakest position in decades to influence the process to its own advantage. There is, however, a risk of over-reacting. The public demands exemplary punishment for those who led to the crisis and politicians want to find agents and institutions, other than themselves, to blame for the crisis. In this context, without much time for deep economic analysis, some aspects of the re-regulatory process may respond to a “killing the messenger” logic, disorderly touching on every aspect that seems to have played a role in originating or amplifying the current crisis (hedge funds, rating agencies, credit risk derivatives, short-selling, globalisation, etc.).

A balanced assessment of the alternatives for regulatory and supervisory reform should take into account the fact that there is room for self-correction in the system. Private losses have been important, data has accumulated, tail risk can be re-estimated and re-priced, rating agencies have considerable reputation to regain, and supervisors will probably enforce with greater care some of the existing regulations

A balanced assessment of the alternatives should also consider the risk of creating new regulatory arbitrage opportunities, as some of the old ones are dismantled. The financial sector is particularly sharp at finding ways around any regulation, so future regulations should not presume that enforcement is guaranteed and, while devoting resources to the effective enforcement of the rules (i.e., supervision), should also try to make the system more resilient to the innovations and shadow-system developments that might circumvent the new rules and put the system at risk of another crisis.

The specific challenges and alternatives for the design of the new financial architecture are manifold and providing a systematic review of them will exceed the scope of this

paper. Some reports produced in the early stages of the discussion provide excellent summaries of the underlying trade-offs and the main alternatives (e.g., Brunnermeier *et al.*, 2009, and The de Larosière Group, 2009).

A good grasp of the dimension and richness of the topics under consideration can be obtained by looking at the structure of the final report produced by the G20 Working Group 1, “Enhancing Sound Regulation and Strengthening Transparency” (March 25, 2009). The report begins with a list of the weaknesses identified in the financial system:

- a. Weaknesses in underwriting standards
- b. Lack of oversight of systemic risks
- c. Lack of oversight of unregulated pools of capital
- d. Weak performance by credit-rating agencies
- e. Procyclical tendencies fed by regulatory and accounting frameworks
- f. Shortcomings in risk management practices
- g. Outpacing of risk management by financial innovation
- h. Weaknesses in disclosure
- i. Weaknesses in resolution procedures
- j. Lack of transparency in various over-the-counter (OTC) markets

The report also motivates and describes up to 25 recommendations to the leaders of the G-20.<sup>2</sup> <sup>i</sup> As one can appreciate in the original document and in my summary of its recommendations, the emphasis on the need for a macroprudential approach to financial system stability is very clear but, perhaps paradoxically, the issues of liquidity risk and crisis management occupy relatively little space in the discussion and recommendations.

Issues regarding the regulatory treatment of the systemic implications of liquidity risk will be the focus of the discussion in the remaining sections of this paper. I will describe in some detail the policy proposals on these issues that Enrico Perotti and I launched in February 2009. The proposal is consistent with the goals expressed in recommendations R1 (focus on systemic stability) and R16 (liquidity) in the report mentioned above, although we defend an alternative different to the liquidity buffers mentioned in R16. Our proposal can also be interpreted as a step forward in terms of the developments

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<sup>2</sup> A personal summary of these recommendations (R1 to R25), numbered and grouped by theme as in the original report is given in the Appendix.

encouraged by recommendations R3 (macroprudential tools) and R12 (mitigation of procyclicality).

### **3. The case for liquidity insurance charges and pre-packaged assistance**

The proposal contained in Perotti and Suarez (2009) is to establish a liquidity and capital insurance arrangement that would compactly solve some of the problems associated with the excessive reliance of banks on short-term wholesale funding, the political resistance to assist banks during a systemic crisis, and coordination problems associated with the rescue of international mega-banks.

The proposal is to establish a mandatory liquidity insurance charge that would be paid continuously during good times to a supervisor who, in exchange, would provide emergency liquidity (and perhaps capital) during a systemic crisis. This charge should work like a Pigouvian tax on pollution, discouraging bank strategies that create systemic risk for everyone (“financial pollution”). For this purpose, the charge should be proportional to banks’ short-term liabilities, increasing in the maturity mismatch between assets and liabilities, and levied on all potential beneficiaries of safety net guarantees. Its aim would be to make short- and long-term bank debt financing more comparable in cost, inducing a lower reliance on the former. Importantly, retail deposits would be exempted from the charge (and excluded from short-term funding in the measure of mismatch) since their own (and separately priced) insurance already seems to make them sufficiently stable during crises.

The main goal of the liquidity insurance charges would be to realign funding incentives among the beneficiaries of the safety net. Reducing reliance on short-term market funding would reduce the spread of panic in a confidence crisis and ultimately reduce systemic risk. We think that the lower cost of short-term funding partly reflects the fact that short-term lenders bear little risk, partly because they are able to shift it away to other stakeholders (equity holders, other banks, and taxpayers) when they dismantle their positions at the first sight of trouble. Thus, the charges would make banks internalise the damage caused to others when things go awry.

Revenues accruing from these charges would go into a fund, say an Emergency Liquidity Insurance Fund (ELIF) that would have legal autonomy, pre-packaged access to central bank liquidity, and the backing of government funds, if required. The relevant macroprudential supervisor (e.g., the Financial Stability Board worldwide or the planned European Systemic Risk Board at the EU level) might authorise the extension of assistance from the ELIF as soon as systemic problems were detected. Specifically, the ELIF might deploy liquidity support, guarantees on uninsured wholesale funding and, perhaps, even some pre-arranged capital injections. Assistance may be accompanied by specific constraints on management, such as restrictions on executive compensation, dividends or other decisions with prudential implications. Critically, no assistance would be provided to institutions that suffer problems of an idiosyncratic, isolated nature.

Given this aspect of the arrangement, the liquidity insurance charges would work as an insurance premium: a pre-payment for the contingent support that banks and assimilated institutions eventually receive during episodes of systemic distress. These charges and the existence of an ELIF would make emergency intervention politically more acceptable, especially after the public concern raised by current rescues.<sup>3</sup>

#### **4. Advantages relative to other proposals**

Flat liquidity requirements or higher capital requirements do not constitute the best possible solutions for the management of the systemic component of liquidity risk. A plain liquidity requirement may be too rigid an imposition for banks, impeding their optimisation on a smoother basis. Essentially, that type of requirement imposes a “price” of zero for increasing maturity mismatch if the relevant measure of liquidity remains above the required minimum, and a price of infinity for increasing it if liquidity falls below that minimum. Additionally, in order to guarantee sufficient liquidity in the (hopefully) unlikely event of a crisis, the liquidity requirement would probably have to be large, forcing the financial system to hold excessive liquidity in normal times.

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<sup>3</sup> Related cases for insurance arrangements have been made by Acharya et al. (2009), Caballero and Kurlat (2009), Gersbach (2009), Kashyap, Rajan, and Stein (2008), and Milne (2009), among others.

With capital requirements the story is similar. For them to provide effective protection against liquidity problems (if at all), bank capital would need to be really large during normal times. This has obvious direct costs and several more subtle disadvantages. The latter include the fact that shareholders tend to see bank capital as an asset to which they are fully entitled. So banks with plenty of capital on their books may be subject to pressure from their shareholders to “lever it up,” not necessarily through leverage (which might be constrained by capital requirements) but through riskier investment strategies. Another disadvantage is that shareholders’ claims on bank capital are a source of trouble in bank interventions since, at least under current bankruptcy and supervisory intervention procedures, seizing or intervening in a bank ahead of formal default tend to be seen as a violation of private property rights.

In contrast to these alternatives, the insurance scheme proposed in Perotti and Suarez (2009) arranges for the availability of sufficient liquidity (and, perhaps, capital) in systemic crises only, and is intended to penalise systemic risk creation in a continuous manner, especially in normal times (using charges per unit of wholesale short-term funding that, as already mentioned, would increase with maturity mismatch).

An advantage of the proposed form of the liquidity insurance charge is that maturity mismatch is relatively easy to compute. Systemic risk —namely the simultaneous realisation of correlated tail risk— is hard to estimate, as extreme co-movements are rarely observed, and may be triggered by a different asset class each time. But liquidity runs play an important role in the escalating phase of *all* systemic crises and have a clearly negative amplifying effect. So liquidity mismatch can be considered a “proxy” of potential systemic risk. In this sense, liquidity insurance charges would discourage the creation of systemic risk associated with short-term funding.

To eliminate the incentives to excessively rely on short-term maturity funding when the term structure of interest rates is characterised by a high positive slope (which tends to occur during good economic times), the liquidity insurance charge might be increasing in the slope of the short-end of the yield curve (say, up to one year). With this feature, the charge would be naturally countercyclical, leaning against the wind when liquidity is abundant and short-term rates are very low. In addition, if necessary, an explicitly countercyclical proportionality factor might also be introduced.



The liquidity insurance charge proposed in Perotti and Suarez (2009) would probably make it more expensive for banks to rapidly expand their lending above their deposit base, but it would certainly not block it.<sup>4</sup> Banks would most likely react to it by using a greater fraction of long-term funding, which might advantageously imply greater monitoring from the corresponding creditors. Finally, with better incentives and counting on the contingent assistance of the ELIF in case of a systemic crisis, the residual short-term creditors would be less prone to panic.<sup>5</sup> In each of these dimensions, the proposed solution would imply a significant correction of problems that have contributed to the severity of the current crisis.

## **5. Implementation and institutional details**

Properly defining the perimeter of the markets and institutions subject to prudential regulation and supervision will be key to the achievement of a truly more stable financial system. Some clear lessons from the crisis are that the old distinction between commercial and investment banks was obsolete, that the existence of opportunities for regulatory arbitrage encouraged the creation of a dangerous uncontrolled shadow banking system, and that the connections between elements of that system (such as special purpose vehicles), the hedge funds, and the systemically important institutions were instrumental to the spread and amplification of the crisis.

Future regulation and supervision will hope to cover all institutions that either for their size or for their interconnectedness are systemically important (and, thus, likely receivers of assistance in a crisis), irrespectively of whether they fit into the traditional

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<sup>4</sup> Financial intermediation theory shows that there circumstances in which funding long-term assets with short-term liabilities is conducive to an efficient allocation of resources (Diamond and Dybvig, 1983) and in which short-term funding can play a disciplinary role (Calomiris and Kahn, 1991, Diamond and Rajan, 2001).

<sup>5</sup> Recently, Gorton (2009) has argued that some features of the securitisation process prior to the crisis might have responded to the increasing demand for high-rated assets that can be used as “collateral.” In fact, quantitatively important markets such as the repo market, the markets for credit default swaps (CDS), and other derivatives markets use collateral (and margin calls) to deal with counterparty risk. In Gorton’s interpretation, the shadow banking system might have played a fundamentally justified role in the provision of collateral but caused large losses in the crisis because it was unprotected against panics—very much like the traditional banking system prior to the introduction of deposit insurance.

definition of a bank or not. In this sense, the proposed liquidity insurance arrangement for systemic crisis should cover all of them.

Skeptics may fear that the liquidity insurance charges defended in the proposal will encourage the system to shift activities that make heavy use of short-term funding into yet another shadow banking sector. This is a serious risk not only for our proposal, but for essentially all re-regulatory proposals: as soon as a shadow system is regulated, the roots of another are possibly established. However, the shift of some short-term funded activities to the shadow banking system is not likely to be sizeable or to imply a big danger for the regulated sector if regulators and supervisors stick to the principle that the unregulated agents should enjoy very limited (or otherwise strongly penalised) recourse to the regulated ones.

Accordingly, for deals between regulated and unregulated sectors our proposed scheme should assign charges increasing in the unregulated borrowers' own mismatch, if it were at all verifiable. Otherwise, any potentially mismatched asset funding should be fully charged. For instance, bank credit lines to institutions such as hedge funds might be treated as non-contingent commitments and fully charged.

The international implementation of the liquidity insurance arrangement for systemic crisis is another complex but important challenge. Ideally, in order to properly deal with banks that have a significant presence in several jurisdictions, an international ELIF should be created. This ELIF might operate in coordination or under the management of the relevant international macroprudential supervisor. Countries should choose to participate by requiring either all their regulated institutions, or at least the largest or systemically relevant ones, to join an international ELIF, pay its liquidity insurance charges, accept its supervision, and count on its support in a systemic crisis.

The establishment of an international ELIF may sort out commitment problems. Countries that do not join should not benefit *ex post*. The scheme would constitute an explicit coordination device for the rescue of large international banks, preventing the issue of burden-sharing to be left for difficult *ex post* negotiations. In this sense, the liquidity insurance charges, accepted as insurance premia during normal times, would provide a mutually agreed metric for systemic risk and offer an objective basis for

burden-sharing in crisis times. In the described setup, it would be reasonable to accept that, in case of need, countries will contribute to funding or recapitalising the ELIF in proportion to the share of each national banking sector in the liquidity insurance charges paid during the pre-crisis period, rather than on the basis of costly and time-consuming *ex post* negotiations or some politically debatable country quotas.

## **6. Conclusions**

The process of reform of the regulation and supervision of the global financial system motivated by the current crisis has many important and challenging dimensions. This short paper has first provided an overview of its origins and scope and then devoted most of its length to describing the liquidity insurance arrangement for systemic crises proposed in Perotti and Suarez (2009). Such an arrangement addresses a number of key challenges related to the treatment of systemic liquidity risk in a global economy: (i) the proper regulatory “pricing” of liquidity risk (taking its contribution to systemic risk into account), (ii) the establishment of some form of pre-packaged assistance to banks during systemic crises (that helps prevent or attenuate these crises in the same form as deposit insurance prevents panics among retail depositors), and (iii) the improvement of coordination in the management of crises involving internationally operating mega-banks.

As discussed in previous sections, the charges associated with the proposed liquidity insurance arrangement would be primarily aimed at making banks internalise the external costs of their funding strategies, discouraging the forms of short-term funding or extreme maturity mismatch that create and amplify systemic risk. The arrangement would also provide some prepayment of intervention costs (making early intervention politically more acceptable). In its international implementation, it would constitute a starting step to ensure public assistance to international mega-banks with cost-sharing based on *ex ante* rules rather than negotiations or politically debatable country quotas.

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## **Appendix**

### **Summary of the Recommendations included in the Final Report of the G-20 Working Group 1 “Enhancing Sound Regulation and Strengthening Transparency” (March 25, 2009)**

This is a summary based on a subjective interpretation of the original wording of the recommendations in the above-mentioned report. The 25 recommendations are numbered and grouped by themes as in the original document.

#### System-wide Approach to Financial Regulation

R1. Give an explicit financial system stability mandate to the relevant authorities.

R2. Ensure coordination between authorities at the domestic level.

R3. Search for and establish suitable macroprudential tools to address systemic vulnerabilities, considering the possible use of: (a) simpler leverage measures and better measures of balance sheet exposures, (b) cyclically-adjusted capital requirements, (c) new loan-loss provisioning standards, (d) longer data bases, (e) a stronger focus on loan-to-value ratios for mortgages.

R4. Create an international table to coordinate authorities across jurisdictions.

#### Scope of Regulation

R5-R8. Create an expanded, more focused, and dynamically flexible perimeter of regulation and oversight.

#### Oversight of Credit Rating Agencies

R9. Make credit rating agencies subject to registration, a harmonized code of conduct, and oversight.

#### Private Pools of Capital

R10. Make private pools of capital (including hedge funds) subject to registration and appropriate disclosure requirements.

#### Transparent Assessment of Regulatory Regimes

R11. Adhere to the Financial Sector Assessment Program (FSAP), publish its conclusions, and include sections on macroprudential oversight and compensation schemes.

### Procyclicality

R12. Develop and implement supervisory and regulatory approaches to mitigate procyclicality in the financial system by promoting the build-up of capital buffers during economic expansions and by dampening the adverse interaction between fair valuation, leverage and maturity mismatches in times of stress.

R13. Strengthen the accounting recognition of loan loss provisions and correct the adverse dynamics associated with fair value accounting, including improvements to valuations when data or modeling is weak.

### Capital

R14. Encourage the build-up of capital buffers and their effective use in bad times.

R15. Support the progressive adoption of Basel II, which will be improved on an ongoing basis.

### Liquidity

R16. Promote stronger liquidity buffers at banks. Develop tools for assessing the resilience of banks' liquidity cushions and for constraining any weakening in liquidity maturity profiles, diversity of funding sources, and stress testing practices.

### Infrastructure for OTC Derivatives

R17. Strengthen the infrastructure for OTC derivatives markets, encouraging standardization and clearing through a central counterparty.

R18. Make central counterparties subject to transparent and effective oversight.

### Compensation Schemes and Risk Management

R19. Compensation frameworks at large financial institutions should be consistent with their long-term goals and with prudent risk-taking.

R20. Financial institutions should stick to the sound practice principles on compensation established by the Financial Stability Forum (FSF); variable components should vary symmetrically with performance.

R21. Prudential supervisors should oversight compensation schemes.

### Transparency

R22. Reduce the complexity of accounting standards for financial instruments and facilitate the assessment of financial statements by their users.

R23. Facilitate the global convergence towards a single set of high-quality accounting standards.

### Enforcement

R24. Make the effective enforcement of regulation a priority for all financial regulators.

### Technical Assistance and Capacity Building in Emerging Market Economies

R25. Commit to assist other national authorities, especially from emerging market economies, in order to enhance their capacity to strengthen their regulatory frameworks.

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