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*Memorandum on a new financial
architecture and new regulations*

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The financial crisis is global and is deeply rooted in a decade-long misuse of the financial market for rent-seeking. The financial industry has largely abandoned its role as a service industry, supposedly charging reasonable fees for the services of spreading risk and allocating capital and credit. Instead it provides a market for corporate control—mergers and acquisitions— and a casino for betting on or hedging practically any kind of risk—the derivatives market—. Finance, broadly understood, has gone from 2% of the American economy to 20% of Gross Domestic Product (GDP) since the early 1990s—yet there is little or no evidence that the value of its services to consumers and businesses are worth one-fifth of GDP—. The growth of finance seems to be largely due, on the one hand, to deregulation, leading to liberalization of capital accounts all over the world, and to financial innovations on the other.

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But this innovation has led to the development of new financial instruments that are not well understood by their users or even their initiators. Financial derivatives, Mortgage Backed Securities (MBS), Collateralized Debt Securities (CDS), Collateralized Debt Obligations (CDOs), and so on, have clearly been misused. But besides that, some critics argue that they were misconceived as well: the formulas for pricing and using them rested on unacceptable assumptions about the distribution of probabilities.

After capital market liberalizations, many countries experienced major episodes of financial instability, sometimes with devastating effects on economic activity, resulting in boom and bust cycles. These tended to bring about declining economic activity, large output losses and a terrible impact on the low income segments of the population and small businesses, indeed, all those unable to insure themselves against large financial and real shocks. The bursting of the real estate bubble in the United States (US), Spain, and the United Kingdom (UK), and the world-wide fall-out for the US and Euro-Zone credit and banking system has already had severe real effects, triggering what may be a long and deep recession in the US and many other economies.

It was in order to prevent just such events that many countries instituted financial regulation after the Great Depression of the 1930s. The new regulatory institutions provided public screening and monitoring of the financial markets, and required firms and banks to adhere to strict standards of accounting and to publicly reveal information on assets, debt and earnings. The theory was that more and better information tamed exuberance and made prices conform to the risks banks were taking relative to their capitalization. Fast unravelling of these long-standing regulations –starting in the 1990s– allowed extreme leveraging on an unprecedented economic scale with untested instruments.¹ With insufficient financial market regulation this leveraging carried great and poorly understood risk.

¹ With high leveraging risk will be extreme with: 1) inexperienced and loose supervision; 2) no disclosure requirement; 3) no screening and monitoring of financial institutions and 4) no secure safety net for the financial institutions (for example, insurance for bank deposits as enacted for US

The recent collapse has roots in the inadequate understanding of the new financial instruments, especially subprime mortgages and securitized mortgage instruments. The flaws in these instruments magnified into a credit crisis and a global financial market meltdown. The use of these terms is not hyperbolic. Since the end of last year, central banks have tried to help the private banking sector with an extraordinary injection of liquidity, even including the purchase of bad assets, for example from Bear Stearns. But this has not worked; the contagion of financial panic continues, sometimes subdued, but on occasion, virulently. The Group of Seven (G-7), anticipating dire consequences to financial markets, met in April 2008 to consider recommendations of the Financial Stability Forum (FSF). But nothing happened, only a declaration, and this had no effect.

In early Fall, the European Union (EU) Parliament required the EU commission to draft new directives for strengthening and harmonizing financial regulations in Europe. In the US, in September, Secretary Paulson brought to Congress a \$700 Billion rescue plan to bail out failing investment banks. Initially the idea was to buy up their non-performing assets. Congress rejected this, accelerating the stock market downturn. Then it accepted a modified version, including capital injections into weakened banks, as proposed in the UK. By this time the contagion had already spread, first to the UK and then to Europe. The guarantee of bank deposits by the Irish Government had put the UK and other EU Countries under pressure to do the same. The electronic bank runs became too dangerous. The 27 Head of States of the EU met in Paris at the beginning of October to suggest a joint rescue plan for Europe and the global economy. The G-7 followed

banks in the 1930s and in Britain and Ireland in the midst of the credit crises in October 2008). MacAvoy and Millstein pointed out the excessive risk taking and corporate Governance failure in the Enron case 2001, which triggered the Sarbanes-Oxley Act of 2002, see Paul MacAvoy and Ira M. Millstein's, *The Recurrent Crisis in Corporate Governance* (New York, Palgrave-MacMillan, 2004). Additionally, politicians, regulators, financial economists and financial market modellers now admit that the financial dynamics of the global economy and its markets has not been sufficiently understood so far. Economic development now often moves as boom-bust cycles, see a detailed analysis in Willi Semmler, "Asset prices, booms, and recessions" (New York, Heidelberg, 2006).

this up and put forward the suggestion of a new international financial architecture to be decided by a summit meeting in December in New York. Although some core European countries (UK, France, Germany) decided on national guarantees for bank lending operations and agreed to guarantee deposits, this was not enough to calm the stock market or loosen up the credit markets.

As these efforts took place credit around the developed world became frozen. To build up confidence the US treasury took additional action to purchase stocks of investment firms and banks threatened by bankruptcy. This helped a little to calm down the stock market and improve the climate for credit. But now a real recession is looming on the horizon, calling not only for a rescue plan but also for a new and stronger stimulus package.

The focus should shift now to the long run, to a new financial architecture. Here are some points of agreement among concerned academics and policymakers regarding financial market bubbles, new financial architecture and regulations.

THE BACKGROUND OF THE CURRENT FINANCIAL AND REAL ESTATE MARKET BUBBLE AND MELTDOWN

To start with there are good grounds to distrust the market valuations of financial assets, both before the collapse and now, after the bursting of the bubble. The (imperfectly understood) financial innovation of re-packaged and securitized subprime mortgages resulted in both significantly overpriced houses and securities. The risky loans were sold because they were securitized through CDOs—which were supposed to make the economy safer by spreading risk—. Instead, their widespread use in the mortgage market contributed to a typical financial and real estate market bubble very similar to others that the US and other advanced macro economies have seen.² These bubbles

² These go back a long time: there was the Florida real estate bubble in the early 1920s, the stock market bubble in the late 1920s, the tech stock bubble in the late 1990s, the real estate bubble in the UK in the early 1990s, and the US since 2000, and the bubble in the futures market for oil and other resources, in recent times.

have tended to happen more frequently, the more the financial market has been deregulated.³

Usually, as a financial bubble develops, asset price inflation and credit expansion move in tandem. The bubble will be particularly pronounced when the financial sector expands more rapidly than the rest of the economy, as has happened in the US starting in the early 1990s. This pattern can be seen in the subprime market: with a low cost of borrowing (low interest rates) and expected prices of subprime assets rising (due to expected adjustable interest rate), incentives developed to hold an excessive amount of subprime CDOs. This also created incentives for banks to finance such holdings through loans (even though the collateral might be suspect): eventual sales of such securities seemed to promise huge profits. Yet, the data on returns from CDOs is scarce, and there were only a few academic studies on how large the expected margins might be, as compared to returns on other assets.

Furthermore, the pricing of these assets compounded through a pattern of interaction known as ‘relative pricing’. As soon as one investment bank placed a new credit product in the market, other financial market players built on that price, even though it may well have been arbitrary, drawing on their models, to extrapolate the prices of even more complex products. Since there was no specific, well established market to evaluate such assets—or the actual profitability of CDOs and their more risky tranches—the initial prices did not have a sound basis. It is now clear that the practice of relative pricing was all along inadequate and dangerous. Moreover, the models used to price credit derivatives were based on artificial default intensities that had no link to the real potential risk of large-scale default if the real estate market went through its natural cycles. So the credit market went down due to

³ The Glass-Steagall Act was introduced in the 1930s, to prevent this sort of bubble. It restricted banks from holding financial assets other than treasury bonds and prohibited a bank holding company from owning other financial companies. But it was repealed in 1999 by the Gramm-Leach-Bliley Act. There is a debate as to whether the weakened controls were a chief cause of the current crises, because investment banks with commercial insured deposits are in better health than those without. But both are in trouble. A major contribution of the 1999 deregulation to the bubble is that it helped expand leverage by creating large actors such as Citibank.

unanticipated higher default risk and lower recovery rates. It is now clear that the entire industry severely overpriced credit derivatives, and that it sold these products to customers that are now suffering losses.

Financial bubbles have negative effects, in addition to the immediate damage they inflict when they burst. For example, they may produce or enhance uneven income distribution (financial tides lift yachts, but not all other boats) and they may lead to misallocation of resources (*e.g.* the huge build up of optical fiber in the us). And even before it bursts, the bubble creates financial instability; other sectors may be pulled into unwarranted booms. When a bubble bursts, it generates huge externality effects: falling asset prices in the bubble will pull down other asset prices, the value of collateral will fall, and loans will be called in; credit markets will contract, and financial institutions will suffer. Many ‘innocent’ agents –who made no unwarranted or speculative decisions– will be dragged down, and this will spill over significantly onto the real side of the economy, reducing employment and output.

Risk

The contours of a bubble emphasize the two risks that, without a coordinating agent to manage them, feed into one another and make the financial system particularly fragile. A striking aspect of the turmoil has been the extent of weaknesses in risk management, especially in regard to two components which are always present.

Specific or idiosyncratic risk

This applies to the individual financial institution. It is the risk arising from high expected margins, based on cheap sources of funding for extremely leveraged speculative or Ponzi positions, often compounded by lack of adequate internal risk assessment in the financial institution itself, and lack of diversification where all parties in an industry follow the same strategies. We also tend to find problems such as lack of sufficient capital requirements,

underrated risk by rating agencies, and lack of accountability. A recent example involving most of the above is the way many financial firms have been selling Lehman Brothers debt insurance against its bankruptcy. These swaps were assets held by investors for returns and by financial institutions to meet capital requirements and for hedging purposes. Since the risk to Lehman was underappreciated, the swaps' value is not known (it is estimated at \$600 billion), and the size of the losses on these swaps and how they will affect various institutions is unknown.

General or common risk

This arises from movement of the entire market, such as higher interest rates, falling consumption and investment demand, sudden increases in risk aversion or perception (emerging credit defaults, swaps and spreads rising), correlated risk through the entire market when extreme events (liquidity drought) happen, as during the current crisis.

Widespread build-up of overpricing of securities can then lead to the emergence, even the sudden emergence, of a dangerous level of common risk. In other words the build up of specific risk can lead to a common risk. The fear of Lehman swap downgrades can lead to more credit problems.

Economists note that bubbles can have good effects depending on their character. For example some bubbles can leave the economy significantly better off as firms invest in productive capacity, which might even include better labor relations with job training and higher wages and income in the long run.⁴ The recent financial bubble is coincident with slow productivity growth, stagnating US household income, and higher poverty rates, and measures of increased innovation are not readily available. Therefore it is likely that except for the larger than average growth in office buildings and housing

⁴ An example of a good bubble with beneficial effects: the technology bubble in the US in the late 1990s. The bubble burst in 2000-2001, but the expansion lasted ten years with significant economic and wage growth. It's worth observing that recent financial market innovations did enhance economic growth and facilitated the purchase of houses for the low income sector, as well as providing credit for small and medium sized enterprises.

stock, this bubble went too far and will cause as it bursts tremendous costs in lost output. The other cost of a bubble burst is a wariness about financial institutions. Such scepticism can result in a 'lost-trust overhang'. We are already seeing the effects in mid October as people move away from all financial instruments towards cash, and blame or even picket Wall Street financial stewards. Even banks move away from each other as the London InterBank Offered Rate (LIBOR) soars. As middle class people flee from financial markets, they may stop accumulating financial assets while we see banks becoming chary of lending.

To sum up, bubbles in some form may be unavoidable, but overly swollen bubbles will burst in a very costly way; this said, bubbles can be contained, and if they are, they may have some positive effects, even enough to outweigh the negatives.

BUBBLES SHOULD BE CONTAINED BY POLICIES, RISK MANAGEMENT, REGULATIONS AND OVERSIGHT –SOME PRINCIPLES

Common themes of the current discussions among national governments and the G-7 are: greater transparency, greater disclosure, and stricter risk management by firms. Yet the discussion should go beyond these easily agreed upon characteristics for an adequately functioning financial system.

A set of beliefs and political structures evolved that caused regulation to fail to keep up with the institutional changes over thirty years that transformed financial markets from an intermediary to a rent-seeker. Regulators assumed that the financial sector was a lot more competent than it was. Regulators assumed that firms and the industry really had the dazzling technical skills that they displayed in their quantitative risk models, and that these supposed skills were relevant to real world markets and enabled them to price and manage risk better than the regulator could. CEO salaries –some the size of the budgets of medium sized towns and large school districts– were surely paid for value received; this added to the assumption of competency.

Yet, it is clear now the industry did not have the proper pricing and risk management tools. In addition, necessary market corrections had been

suppressed by deliberate actions of central authorities removing regulation and creating, for generations of market participants, a firm belief that asset values could keep growing. We are now witnessing serious discussion of the best practices for long term financial management, financial market regulation and adequate, long term oriented tools, and on the regulation and oversight of other financial institutions. This discussion should not be directed toward entirely removing or avoiding financial bubbles or banning speculation, for example short selling or leveraging. First, this may be too much to ask of any government, but second, bubbles don't have to be *suppressed*, but they do have to be *contained*.

What academics have proposed for a financial regulatory framework

- a) The early reforms emphasized personal accountability of the executive decision-makers only with long term incentives, particularly the top CEOs of financial institutions (see the 2002 Sarbanes-Oxley Act⁵).
- b) Academics have been consistent in advocating better pricing and risk management. Risk analysis should always take the possibility of a major crisis into account. Prices need to be fair and transparent to all market participants under all circumstances, so that the payoffs of contracts can be realistically expected to be recovered. Inside financial institutions risk control divisions should be set up, assessing also system-wide break-downs of trading. Proper risk assessments should not only be made through independent rating agencies, which typically consider single firms, but also through federal and international agencies, which should assess the likelihood of a major market meltdown based on research (as was available before the current crisis –international and federal oversight of rating agencies as introduced by the Sarbanes-Oxley Act), see also point (c) below.
- c) Capital requirements should be increased significantly for financial institutions –in particular those that are not required by law to hold reserves at the Central Bank–. Leverage has to be limited to a reasonable level. It has also been suggested to enforce procyclical capital requirements. This means that the banks are forced to build up liquidity in a boom in order to be able to use it in a recession. When the capital

⁵ The Sarbanes-Oxley Act of 2002, H.R. 3763. Sarbanes-Oxley Act, Pub.L. no. 107-204 (July 30, 2002).

requirement is raised in a recession, this will accelerate the downturn since it may intensify a credit crunch or make credit more expensive. Capital requirements, in particular, should be increased for new financial products, such as certain complex credit products. Mark-to-market has to be substituted by mark-to-fundamental value.

- d) Strong incentives should be provided to financial institutions for a diversification of capital, so that financial institutions are discouraged to follow the same strategies –e.g. all holdings promising subprime CDOs with high expected margins and instead try to invent new instruments to service the economy better.
- e) Better and faster enforcement of Basel II agreements (which do not seem to have been enforced much in the US), taking the global nature of the financial market fully into account so that international corporations cannot escape global regulation. According to State regulatory agencies, Basel II has been approved through the Federal State, at the time of the agreement, but not by the regulatory agencies of the States (which appear to act independently).
- f) There should be more transparency, for example, quarterly reports to regulators, transparency of build-ups of risky exposure by banks, investment firms, hedge funds, private equity firms, industries, groups of companies, and households. Independent scholarly work on absolute pricing of contracts in new areas of financial innovations has to be undertaken and made known publicly. The magnitude of returns from assets are roughly known—for example equity returns, bond returns, returns from currency and future markets—but there are no similar studies for new financial instruments, which industry prices in a consensus using relative pricing and marking to market when measuring risk. Similar to the pharmaceutical industry, the finance industry should go through an approval and testing process before launching new complex product lines on a massive scale.

What the Financial Stability Forum (FSF) has proposed

In the US, the Federal Reserve System (Fed) had, under Greenspan, attempted to intervene in the asset price bubbles (tech bubble), but credit and banking crises and a crisis in the bond market are a different matter. A judgement on the real pre-emptive regulatory potentials of central banks, the Fed in the US and the European Central Bank (ECB) in Europe, is still out. In particular, because the capital market liberalization and the new communication technology have set in motion a much greater contagion effect than trade liberalizations (through electronic ‘bank-runs’), international cooperation in this area, in order to avoid the contagion effects of financial crises, is strongly needed.

Already in April the G-7 meeting had accepted a proposal by the FSF, which has suggested actions to “Enhance Market and Institutional Resilience”. The FSF focused on 1) increasing the capital requirements (in particular for complex structured credit products) and strengthening liquidity and risk management (especially for off-balance sheet entities); 2) enhancing and improving transparency and valuation through credit rating agencies; 3) increasing the authorities’ responsiveness to risk (translating risk analysis into action), and 4) extension of the arrangements to deal with financial stress and disruptions (extending Central Banks’ policies to asset purchases and liquidity provisions for the private sector). So far, at least what the press has reported, the increase in capital requirements seems to be high on the agenda. Europe has now undertaken numerous actions to prevent the financial meltdown from spreading to Europe, such as interest rate decrease, liquidity provision by the ECB, rescue operation of the banking system through loans, guarantees and deposit insurance, and planning an EU supervisory board for the credit system in Brussels. But as argued above, this is not enough for a new financial architecture.

Proper practices of risk management

The recent financial market bubble can, in part, also be attributed to a lack of understanding of the nature of underlying forces driving risk. Current risk-management processes for market, credit and liquidity risk make a number of simplifying assumptions about the behaviour of those forces in order to achieve some form of analytical tractability and to reduce mathematical and computational burden.⁶ But if real-life decisions are to be based on these models this is utterly unacceptable.

⁶ An example is the widely adopted hypothesis that fluctuations in financial-asset prices over time can be described by a simple mathematical model, the geometric Brownian motion (GBM). Assumptions of this nature have the consequence that they trivialize the risk present on financial markets. Widely observed phenomena, such as fat tails (*i.e.*, a much larger loss potential than the GBM-model implies), asymmetries (*i.e.*, higher than expected downside risk), correlation breakdowns (*i.e.*, nonlinear dependencies across assets and markets), and volatility clustering (*i.e.*, a strong temporal dependence in the propagation of risk), are largely ruled out in current risk measurement processes.

Financial firms' risk management processes, vendors of risk-analysis software, rating agencies as well as regulatory agencies should be required to adopt more realistic and empirically substantiated models for risk assessment. Specifically, in order to determine the consequences of extreme financial-risk constellations, certain stress-testing procedures have been established. However, they mainly consist of analyzing isolated, extreme events and do not take the interaction of such extreme events into account. Since—even modest—deficits in risk assessment are greatly amplified by excessive leveraging, the consequences of leveraging on a firm-specific, but also macroeconomic level need to be better understood.

In view of these deficits, the financial sector as well as regulatory agencies have to devote more resources to develop sound risk assessment processes.

Hedge funds and private equity

There are other potential dangers lurking. In spite of the implosion of private equity funds and hedge funds, which has had a significant impact on the structure of US and global markets, the industry is largely unregulated in the US.⁷ The above-average returns of private equity funds and hedge funds are in part attributable to over-leverage, use of derivatives and hedging, and participation in highly complex financial transactions inaccessible to other regulated market participants. The systemic risks associated with these characteristics (increased market volatility, liquidity issues, effect of potential fund collapse on the global financial system) need to be addressed. The SEC has sought to establish greater transparency through mandatory registration of hedge fund advisers.⁸ Under this proposal, advisers would have had

⁷ There are two key statutes designed to regulate investment fund practices: the Investment Company Act of 1940 and the Investment Advisers Act of 1940. These statutes, which were designed for investment companies such as mutual funds are outdated in light of recent financial innovation and capital markets developments. Hedge funds and private equity funds rely on exemptions (mainly through avoidance of public offerings) to avoid being caught by the statutes.

⁸ See Rule 203(b)(3)-2 under the Investment Advisers Act, 17 C.F.R. § 275.203(b)(3)-2.

to adopt record-keeping procedures subject to periodic audits by the SEC, and to supply information (financial statements) to investors concerning their results of operations. The SEC was eventually struck down for lack of statutory grounding by a DC circuit decision on June 23, 2006.⁹ A new comprehensive regulatory approach for the industry is needed to manage systemic risk. Several bills have been introduced in the 110th Congress (2007-2008), but none has really been seriously considered yet. Some guiding principles should include greater disclosure of portfolio diversification, risk profile and trading strategies, and some consideration of over-leverage.

LIQUIDITY, INSOLVENCY AND THE ROLE OF THE BANKING SYSTEM

From the above it follows that there should not be any commitment to 'bail outs'. The public should not bear the cost of a bail out when insolvency arises, but the public should bear the cost of providing liquidity so that no insolvency arises due to a lack of liquidity, often resulting from the feedback effects to the two types of risk discussed in section 2 A) and B) above. Note that the view expressed here is similar to a position recently taken in a draft for enhanced financial market regulation by the European parliament. Moreover the form of liquidity should come from the Central Bank, in form of new liquidity injection, swaps of new liquidity for bad assets (as collaterals), swap of equity for debt or bridge loans. Bridge loans given by the central bank or treasury should be given against collaterals, and when the loans are paid back the collaterals are transferred back to the original owners.

Beside the Central Bank the banking system plays important role for the provision of liquidity. Some remarks on the banking system are needed. A

⁹ Goldstein v. SEC, 451 F.3d 873 (D.C. Cir. 2006). Interestingly enough, the Fed was opposed to this mandatory registration proposal. The SEC subsequently tightened restrictions on investors who can invest in both hedge funds and private equity funds (investors must own at least \$2.5 million in investments). This measure fails to address systemic risk and is only concerned with individual risk to investors.

safe banking system is needed for the operation of the real economy and the financial market. Yet, banking cannot exist in its modern form without regulation and supervision; the idea of ‘free banking’ is a myth –or rather harks back to an era in which banks provide safekeeping services, but did not provide the greater part of the money supply–. Money is a public good; taking deposits and making loans is a business, but the fact that deposits are the basis of the payments system constitutes a major externality. The day to day working of the economy depends on the payments system. If the smooth working of that system is undermined the effect on the economy is likely to be disastrous.

Banks depend on trust, and trust in turn is greatly strengthened by effective regulation and enforcement of well-designed rules. Banking customers and money market participants must be certain that banks and financial institutions will behave honestly; if they do not they will be penalized.

Ineffective or ill-designed rules and regulations, on the other hand, will not support trust, may permit unfair and dishonest practices, but worst of all, may not prevent the build-up of excessive risk. When such risk comes home to roost, a lot of businesses and consumers that had nothing to do with the decisions to take on that risk will end up paying a heavy price. So ‘deregulation’ is dangerous, and has, indeed, proved unwise. The changes in regulations allowed for more risk taking by banks and money market funds, with the result that a large fraction of the credit essential to running the economy has dried up, creating problems for businesses and households that had nothing to do with the taking on of excessive risk. This is a major ‘negative externality’, which is neither fair nor reasonable.

Why should the institutions that manage the payments system be allowed to take on risks in the pursuit of profits –profits which they do not share with the rest of the economy– at the expense of the general public? The payments system should be recognized as a public good, and should be managed, not for profit, but in the public interest. Private enterprise may have a role in banking, but the pursuit of private profit must be carefully subordinated to the public interest. Market forces in banking may well tend to bring about

the public good, in banking as in other areas, but they may also run out of control, as we are seeing now. So it is essential that the operation of the payments system, and related institutions, be subject to careful supervision and control.

Overall, it has to be made sure that lessons from this crisis will be firmly implemented to the benefit of generations to come, who will forget about the 2008/September market crash and recession as today's younger generations forgot about the Great Depression.