

# Crisis and Reform: Managing Systemic Risk

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*«Everything which involves turbulence is enormously more complicated, not just a little bit more complicated, not just one year more schooling, just enormously more complicated».*  
(Mandelbrot interview with PBS News Hour, October 21<sup>th</sup>, 2008 by SOLMAN P.) [JEL Classification: E00; E44; E50; E60].

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## 1. - Introduction

Severe financial crises not only involve “turbulence” but also the dramatic reaction of economic agents to the unknown. Perceived complexity builds up quickly and economic agents lose their ability, and hence their appetite, to handle risk. These reactions trigger a chain of events and perverse feedback-loops that quickly disintegrate the balance sheets of financial institutions, eventually dragging down even those institutions that followed a relatively healthy financial lifestyle prior to the crisis. The consequences of these financial implosions for the real economy can be devastating.

While it is understandable that we can argue forever about what is the adequate regulatory framework to strike the right com-

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promise between financial development and systemic safety, there should be little room for debate on the urgent need to stop the free fall once a systemic event develops. Unfortunately, reality is quite different and strange debates do in fact develop in the middle of crises. These debates delay intervention and exacerbate uncertainty at the worst possible time. They reflect political opportunism, the inherent confusion that arises when economic agents (including policymakers and politicians) are shell-shocked, and an ill-timed obsession with teaching (ineffective) lessons to prevent future moral-hazard.

When thinking about new policies to deal with financial crises it is important that these have a first-mover's advantage over the counterproductive debates. I have written extensively about these matters in recent months and I have proposed insurance arrangements that would help speed corrective actions during future crises. In a nutshell, these proposals ask for the government to mandate systemically important financial institutions to purchase government guarantees during the boom phase that would be attached to their assets during a systemic (not idiosyncratic) crisis. (See, *e.g.*, Caballero 2009a, 2009b; Caballero and Kurlat, 2009a, 2009b).

In this article I will revisit some of these arguments but from a different perspective. I will try to place myself in real time as the crisis progressed. I will do so by retracing the paper trail I left in a series of op-eds that reflected the build-up of my own anxieties as fear engulfed the economy. I will complement these op-eds with a description of the main events and debates that triggered these reactions.

The main purpose of doing this exercise is to capture what we inevitably tend to forget with the passage of time, which is how things look from the inside. In particular, I want to capture the debates that block access to the many otherwise available policy tools during crises.

It goes without saying that this is a highly selective representation of what occurred during the crisis. It reflects my views, which often deviate from the conventional wisdom (although probably less so from the views of policymakers who find themselves hamstrung by this conventional wisdom).

## **2. - The Events and Paper Trail**

This section is the core of the paper and contains the main op-eds I wrote during the crisis and, more importantly, some of the events and emerging conventional wisdoms that triggered my reactions. I split these into four phases, namely: Pre-Lehman, Early Post-Lehman, Political Panic, and Recovery. Perhaps the best indicator of the intensity of my concerns in these different phases is reflected in the relative frequency of my op-eds during them.

### *2.1 The Pre-Lehman Phase*

During the summer of 2008, uncertainty was rife in financial markets. In March, the US government orchestrated the sale of Bear Stearns to JP Morgan Chase for \$2 a share, a price that was meant to be punitive. Due to a legal technicality, Bear Stearns was able to threaten to scuttle the deal and JP Morgan was ultimately forced to offer \$10 a share. On June 6<sup>th</sup>, the S&P downgraded the monolines AMBAC and MBIA from triple-A *status*. The second quarter earnings of Lehman, widely seen as next on the chopping block, were eagerly anticipated; it would announce a \$2.8 billion loss on June 16<sup>th</sup>.

Throughout this period, the Fed acted to provide liquidity as a lender of last resort. In March, the Fed auctioned off term loans through the TAF; initiated 28-day repurchase agreements with primary dealers; lent against MBS through the TSLF; and lent against a broad range of investment grade securities through the PDCF. The Federal Reserve Bank of New York provided insurance, but in an *ad hoc* way, by lending \$29 billion to a limited liability entity that would purchase toxic assets from Bear Stearns to facilitate the JP Morgan transaction. However, the liquidity and insurance provided by the Fed were not keeping up with the level of uncertainty in the markets.

Deeply concerned with these events, I decided to vent my frustrations and plunge (temporarily) into the op-ed world.

At this time, populist opposition to the direct bailout of financial firms was relatively quiet. Instead, the furies focused mostly on potential aid to delinquent or underwater homeowners – this was the period, for example, of “*AngryRenter.com*”, a website backed by FreedomWorks, a conservative advocacy group led by former House majority leader Dick Armey and Steve Forbes.<sup>1</sup> But the zero-sum or transactional view of bailouts was already being heard, for example, on the Wall Street Journal editorial page, which lamented the Bear Stearns deal as if it were no more than a transfer from the government to JP Morgan: «Too bad our public officials aren’t as stalwart in standing up for taxpayers as Mr. Dimon is in defending his bank’s commercial interests».<sup>2</sup>

The events in the financial system were already being described in a language laden with moral connotations, as if the financial market were a character-instilling fable for children. Debt was seen as tantamount to profligacy; derivatives were seen as somehow unclean. In an op-ed, «Our Financial Bailout Culture», a former CEO of Nomura Capital (ironically enough!), wrote, «And so we have the insidious modern trend to shirk responsibility and blame others for our missteps. This trend, this ‘victim mentality,’ is a path toward personal disaster».<sup>3</sup>

So I wrote:

#### Moral Hazard Misconceptions (FT 06/16/08)

*«Here we go again. Two pillars of the US and world financial system, Fannie Mae and Freddie Mac, have become embroiled in the*

<sup>1</sup> A typical quote from the AngryRenter website is: «It seems like America's renters may NEVER be able to afford a home. We are the class that has been ignored in this debate. Washington should not make us pay more in taxes to subsidize reckless borrowers and lenders». AngryRenter submitted a petition to Congress urging, «Congress should not pass any bailout programs that reward risky borrowing and lending. Let the free market sort it out!».

<sup>2</sup> «Pushovers at the Fed», *Wall Street Journal*, March 25<sup>th</sup>, 2008.

<sup>3</sup> PENNER E. «Our Financial Bailout Culture», *Wall Street Journal*, April 11<sup>th</sup>, 2008.

*current financial turmoil. To be sure, no one in their right mind expects these institutions to stop operating; the issue instead is whether, how, and when a government intervention takes place.*

*Treasury secretary Henry Paulson has just announced a first package of all out support that involves contingent credit and possibly equity. The terms of the latter are yet unclear but they harbor hope that Treasury has realized how dangerous its previous anti-stockholders strategy had become. Only last Friday the rumor had it that Secretary Paulson was insisting that any potential government rescue plan would not benefit the companies' shareholders. In fact, if he were to continue with the modus operandi he adopted during the recent Bear Stearns intervention, not only shareholders would not benefit, but they would be "exemplarily" punished.*

*The standard rationale for such strategy is that doing otherwise would invite "moral hazard". That is, it would encourage excessive risk taking by equity holders as they can count on not with government insurance for their errors and mishaps. A slightly more cynical interpretation is that a bailout carries a political cost by giving the appearance of favoring the rich over the working families struggling with foreclosures.*

*Unfortunately, while either of these motivations is a sound one during normal times, Secretary Paulson's anti-"moral hazard" strategy has been extremely counterproductive in the current economic environment of systemic distress and recurrent flight-to-quality episodes. This policy simultaneously hampers the private sector's ability to solve the crisis and exacerbates the likelihood of further panics. There are two reasons for this backfiring.*

*First, a private sector solution to the current crisis requires fresh capital infusions into financial institutions. However, in an environment of widespread uncertainty where the instinctive reaction is to run away from risk-taking, private capital is likely to remain on the side for much too long. Thus, the optimal policy response is to encourage and leverage private risk-taking, not to discourage it with a pending threat of exemplary punishment were a fragile situation turn worse, regardless of cause. Economic policy risk is compounding the private sector's reluctance to capitalize financial institutions.*

*Financial institutions, and leveraged institutions more generally, are subject to coordination failures whereby a sudden loss of confidence can cause the demise of an otherwise sound institution. Granted, better managed and capitalized institutions are less likely to encounter a run – it is not a surprise that it was Bear and Stearns rather than JP Morgan that went under a few weeks back – but no institution is immune to panics, as long as it is providing its socially useful liquidity transformation and intermediation role. It has always been understood that it is good economic policy to help financial institutions ride crises of this kind, and that a central role of policymakers in such events is to stabilize expectations with the hope that once the panic is gone, it is private rather than public funds that foster the recovery. In fact, it is this perspective that led both the FED and the Treasury to support Bear Stearns on the days preceding the weekend's forced fire sale. By punishing equity holders, the Treasury chose to hurt those that it had invited to stabilize the situation just a few hours earlier. In doing so, it may have damaged its ability to leverage its policies with private capital support, a key aspect of policy success in dealing with a coordination failure problem.*

*Second, during periods of high uncertainty and the potential for runs, large or coordinated shortsellers are more likely to succeed in triggering socially inefficient panic-selling. Rumor-mongering and persistent selling pressure eventually weaken wary investors and depositors. Unfortunately, by choosing to punish shareholders, Secretary Paulson has rewarded shortsellers and raised their ammunition to cause further financial instability. Again, while shortselling plays a very useful role during normal times, it can turn into a source of instability during periods of high uncertainty.*

*In summary, given the extreme fragility of the current economic scenario, there is no doubt that it is better to err on the side of inducing "moral hazard" than to risk discouraging private capital markets initiatives and eliciting speculative attacks and wasteful predatory behavior. Failing to assess the relative risks correctly and obsessing over "moral hazard" at this time, carries the great danger that the financial system may succumb to a much more serious flight-to-quality problem».*

This column generated a discussion with Martin Wolf, Charles Wyplosz, Willem Buiter and others on the FT Economists' Forum website. They argued that equity holders need not and should not be protected, at all, in dealing with the crisis. For example, Wolf argued, *«It would be better for the shareholders to be wiped out, the institutions to be taken over by the government and then for them to be reprivatised in better times. This was done during the Scandinavian banking crisis. It worked very well»*.

Buiter focused on the special nature of Fannie and Freddie as government-sponsored entities: *«This crisis offers a wonderful opportunity for ending this anomaly either by taking Fannie and Freddie into public ownership, or by properly privatising the provision of residential mortgage financing. This can be done in a number of ways that does not involve the need for a capital increase for [Fannie and Freddie] that depends on attracting private equity capital. The existing shareholders can therefore be led to the slaughter. The existing creditors can be given a haircut. Moral hazard will be minimised. The US mortgage market will not be harmed»*. According to Buiter, *«There is never a right time to tackle moral hazard»*.

And Wyplosz insisted: *«When stock markets crash, shareholders take a loss, cleansing has been done and it is all the way up thereafter. A recession may come, which hurts millions of innocent bystanders, but at least we know where we are. This time we have a banking crisis. A year after it started, the cleansing is far from complete. Banks want to protect their shareholders, which is understandable but not a compelling argument for using taxpayers' money. Caballero suggests that these shareholders should be treated differently because they are needed to be part of the solution. But their protection is part of the problem, a key reason why the crisis lingers. Besides, we do not really need to pamper them, there are other potential bank shareholders. All that is needed is to offer them the right price. We are really talking about what is the right price, not about fund availability»*.

My article was not about Fannie Mae and Freddie Mac in particular, but about the principles behind interventions during crises, so I skipped Willem's remarks (although I obviously take issue with his generic moral hazard remarks) and responded:

*«It seems to me that the main reason behind the differences between both Charles and Martin's conclusions and mine, is that they assume that all the ongoing crises and failures are unavoidable given past investments and decisions, while I do not. Moreover, I believe private capital markets can do most of the job, as long as they are adequately supported.*

*But for private capital markets to do the heavy lifting, we need (at least) two related set of measures: those that encourage new capital to come into struggling but promising businesses before a full blown and socially wasteful crisis takes place, and those that buy time for these investments to happen by slowing down socially inefficient predatory behavior by shortsellers and rumor mongers.*

*Ideally, supporting new capital should come without supporting old capital, but in practice these two capitals are difficult to separate if one is to prevent a crisis altogether. When the Fed and the Treasury make an effort to calm markets, they are implicitly encouraging capital to come to the rescue or at least not to withdraw. The investments that respond to their call are a key part of new capital, even though it is not capital that comes after a liquidation.*

*Moreover, Martin's claim that supporting shareholders would undermine capitalism by removing (negative) risk from equity investment is not tenable in the current context. Many of the old-capital shareholders have lost over 90 percent of their initial investments, and hence have already experienced risk at its worst. In any event, the real concern is that new capital is facing too much real or perceived risk and uncertainty, and hence is reluctant to come to the rescue. Absent new capital's participation, it is hard to see light at the end of the tunnel. Scandinavian type solutions are ultimately more interventionists and riskier in the context of the much more complex and larger US financial markets».*

The gist of the disagreement was this: we all agreed that insolvent institutions need to be eventually recapitalized or wound down. However, we implicitly disagreed about the prices at which to determine solvency. They seemed to regard the correct pricing to use as current market prices or, better yet, the market prices

that would prevail without any abnormal government intervention. Roughly speaking, I viewed the right prices to use as the prices that would prevail under what I viewed as the welfare-maximizing feasible government provision of insurance. And I had a strong hunch that these prices would be higher than the prices set in a market dominated by fear and Knightian uncertainty.

I was disappointed by Wolf's occasional use of liquidationist, consequences-be-damned, rhetoric. And I feared that failing to increase insurance provision to debt and equity holders would have negative consequences. Wolf wrote, *«I am astonished by how little mayhem there has been in the financial sector and by how little impact such mayhem has had on the real economy, so far. So, no, I think the consequences we have seen are in no way extraordinary. On the contrary, they are a welcome, salutary and necessary reminder that the equity risk premium is indeed a risk premium, that lending to people with no assets, income, or credit history is stupid, and that packaging loans in such a way that no one knows what they are worth, what they contain, and how they are to be renegotiated is irresponsible»*.

Wolf was arguing for shareholders to be wiped out and debt holders to take a haircut. Unfortunately, the policy later implemented when Lehman collapsed followed his advice: equity holders were wiped out and debt holders were almost completely wiped out. Then the surprise was unfortunately on the other side: there was mayhem in the financial sector aplenty, and we are still experiencing the aftershocks in the real economy. There was nothing salutary about it. But this was yet to come.

## 2.2 *The Early Post-Lehman Phase*

On June 16<sup>th</sup>, 2008 Lehman posted a second quarter loss of \$2.8 billion. This began a new phase of systemic panic. On July 11<sup>th</sup>, IndyMac was taken over by the FDIC. On July 13<sup>th</sup>, the Treasury department announced an increase in the credit lines of Fannie and Freddie and authorization to purchase equity in either if

needed. On July 15<sup>th</sup>, the SEC banned so-called “naked” short selling of Fannie, Freddie, primary dealers, and commercial banks. The Fed continued to expand its lender of last resort facilities. Again, these measures by the government were helpful, but they were too *ad hoc* to contain the panic.

Luigi Zingales put forward a proposal based on the work of Lucian Bebchuk. Zingales called his proposal “Plan B”:

*The core idea is to have Congress pass a law that sets up a new form of prepackaged bankruptcy that would allow banks to restructure their debt and restart lending. Prepackaged means that all the terms are pre-specified and banks could come out of it overnight... Firms who enter into this special bankruptcy would have their old equity holders wiped out and their existing debt (commercial paper and bonds) transformed into equity. This would immediately make banks solid, by providing a large equity buffer. As it stands now, banks have lost so much in junk mortgages that the value of their equity has tumbled nearly to zero. In other words, they are close to being insolvent. By transforming all banks' debt into equity this special Chapter 11 it would make banks solvent and ready to lend again to their customers.*

*Certainly, some current shareholders might disagree that their bank is insolvent and would feel expropriated by a proceeding that wipes them out. This is where the Bebchuk mechanism comes in handy. After the filing of the special bankruptcy, we give these shareholders one week to buy out the old debt holders by paying them the face value of the debt. Each shareholder can decide individually. If he thinks that the company is solvent, he pays his share of debt and regains his share of equity. Otherwise, he lets it go.<sup>4</sup>*

This corporate finance perspective, while reasonable for an individual bank in distress, misdiagnosed the macroeconomic nature of the problem and, in my view, risked exacerbating the panic. Unfortunately, this view was gaining momentum. I again set pen to paper:

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<sup>4</sup> ZINGALES L. (2008).

Paulson Plan: “Exemplary Punishment” Could Backfire  
(FT 08/29/08; with Pablo Kurlat)

*«Hank Paulson’s \$700bn “bailout” plan unleashed a flurry of alternative proposals, as most people recognize that time is running out. There is an urgent need for a significant intervention to break an accelerating downward spiral that is threatening the very survival of the financial core of the world economy.*

*Most proposals, including the one just agreed to by Congress, have in common a few general principles. First, they recognize the need to recapitalize the financial system and to improve the liquidity of several key asset and insurance markets. Second, there is agreement on the need to protect taxpayers by giving the government a share of the upside as well. Third, most see moral hazard as a reason to limit the extent of intervention and, in particular, to punish shareholders. Not doing so, the argument goes, would make future crises more likely as it would encourage the financial sector to repeat the excesses that caused the crisis in the first place.*

*We share the first two “principles” but are less persuaded by the third one. The main problem of the standard moral hazard view is its disregard for the incentive problems it generates within crises. In real life, unlike in many of our models, crises are not an instant but a time period. This time dimension creates ample opportunity for all sort of strategic decisions within a crisis. Distressed agents have to decide when and if to let go of their assets, knowing that a miscalculation on the timing can be very costly. Speculators and strategic players have to decide when to reinforce a downward spiral, and when to stabilize it. Governments have to decide how long to wait before intervening, fully aware that delaying can be counterproductive, but that the political tempo may require that a full-blown crisis becomes observable for bickering to be put aside. Each of these agents is in the game of predicting what others are likely to do. In particular, the likelihood of a bailout and the form this is expected to take, change the incentives for both distressed firms and speculators within the crisis. These incentives are central, both to the resolution of the current crisis as well as for the severity of the next crises.*

*A standard advice stemming from the moral hazard camp is to subject shareholders to exemplary punishment (the words used by Secretary Paulson during the Bear Stearns intervention). This is sound advice in the absence of a time dimension within crises. With no time dimension, all shareholders were part of the boom that preceded the crisis and as soon as the bailout takes place the crisis is over; the next concern is not to repeat the excesses that led to the crisis. Punishing shareholders means punishing those that led to the current crisis, and it is better that they learn the lesson sooner rather than later.*

*However, this advice can backfire when we add back the time dimension. Now, the expectation that shareholders will be exemplarily punished if the crisis worsens delays the decision to inject much needed capital by stabilizing investors. As a concrete example, sovereign wealth funds are now much less eager to inject equity into the US financial system than they once were. Conversely, destabilizing speculators and short sellers see the value of their strategy reinforced by the policy of exemplary punishment. For both reasons, crises become more acute, as the equity market becomes extremely one-sided when uncertainty and risk rise during bouts of panic and confusion. The anti-moral hazard strategy turns into a crisis enzyme.*

*This perspective leads to several observations regarding how the details of the bailout, many of which are yet to be determined, should be arranged. One objective must be to signal to strategic investors waiting in the sidelines that prices will stop falling and thus discourage speculative waiting. Speculators will not expect that prices of securities will be lower than those established at the Treasury's auction (if indeed an auction is used), at least in the period that immediately follows the auction. Thus the date of the auction provides a clear deadline to any speculative waiting. Announcing a timetable for purchasing a given list of securities may therefore have a salutary effect on prices even before the actual purchases take place.*

*To the extent possible, the first securities to be purchased should be those where the evidence of mispricing is greatest. For instance, certain AAA-rated tranches of subprime mortgage backed securities*

*have been trading at prices that are hard to justify except by the extreme illiquidity of the market. If these securities were first on the Treasury's list this would signal to speculators that the possible gains from speculative waiting will soon disappear.*

*One risk is that if some of the holders of a particular security are especially distressed, this may lead to fire-sale prices when the Treasury purchases the securities. To some extent, this risk is mitigated by the profits the taxpayers would earn on this purchase. Still, there is a concern that purchases at excessively low prices would harm other security-holders, if nothing else from having to mark-to-market their remaining holdings. One way to partially avoid this situation is to commit to purchasing a sufficiently large amount of each security to minimize the impact that any particular security-holder's distress will have on auction prices.*

*Finally, the Treasury's plan contains as-yet-unclear provisions for giving the government an equity stake in the companies it assists. Presumably this will involve diluting the holdings of current shareholders. One way to take into account the within-crisis incentives this policy generates would be to give special consideration (for instance, lower dilution) to firms that raised fresh capital since the start of the crisis.*

*To be clear, our position is not that the standard moral hazard concerns should be disregarded. Instead, our argument is that it is important that when designing policies to address it, we are more mindful of the perverse incentives that they may trigger within crises. The "exemplary punishment" approach is one example of a misguided policy along these lines, letting Lehman go under may have been another one, but there are many post-crisis regulatory responses that could deal with moral hazard without backfiring during the crisis».*

On September 7<sup>th</sup>, 2008, Fannie and Freddie were placed into government conservatorship. The following weekend, Lehman was allowed to collapse. On September 15<sup>th</sup>, Lehman filed for Chapter 11 bankruptcy protection. At the same time, Bank of America agreed to acquire Merrill Lynch. The Fed again expanded the type of collateral it would lend against, but nevertheless, chaos ensued. The collapse of Lehman caused a large money market fund to 'break the buck', leading to a general run on money

market funds. On September 16<sup>th</sup>, the Fed authorized its New York branch to lend up to \$85 billion to AIG. It was amid this turmoil that attitudes against bailouts hardened. On September 17<sup>th</sup>, Barney Frank, Chairman of the House Financial Services Committee, joked that he was going to introduce a resolution declaring Sept. 15 “Free Market Day”. He said, «The national commitment to the free market lasted one day. It was Monday». Evidently, Frank preferred the government’s allowing Lehman to fail over its bailout of AIG.

On September 19, Secretary Paulson called for the government to buy toxic assets from the banks. The TARP legislation giving him funds to do so was voted down on September 29, before being passed on October 3 after cooler minds prevailed in a very reluctant Congress. Also on September 19, the government announced an insurance program for money market funds that stopped the run on money market funds. Goldman Sachs and Morgan Stanley were allowed to become bank holding companies. On September 29, the government entered into a loss-sharing agreement with Citigroup, in return for preferred stock and warrants.

On October 14, Secretary Paulson used a large part of the TARP funds to provide equity injections into the largest remaining financial firms. Smaller financial firms would later receive injections; the FDIC began to insure senior bank debt. Throughout this period of chaos, the Fed expanded its liquidity provision to unprecedented levels.

On November 18, the CEOs of GM, Ford, and Chrysler made the mistake of flying on private jets to a hearing in Washington where they would request public funds. Thereafter, CEOs of financial firms and car companies began to make a big show of driving, taking the train, or flying commercial airliners when they came to Washington.

The steps taken by the Fed and the Treasury in the aftermath of Lehman’s collapse were again useful in combating the problems in financial markets. But because they were *ad hoc* and incomplete, they were not able to reduce panic and stabilize financial markets. Moreover, anti-bailout hysteria in Washington com-

promised the ability of policymakers to implicitly pledge insurance. I wrote:

Knighthian Uncertainty and its Implications for the TARP (FT 11/24/08; with Arvind Krishnamurthy)

*«Financial institutions specialize in handling risk but are not nearly as efficient in dealing with uncertainty. To paraphrase a recent Secretary of Defense, risk refers to situations where the unknowns are known, while uncertainty refers to situations where the unknowns are unknown. This distinction is not only linguistically interesting but also has significant implications for economic behavior and policy prescriptions. There is extensive experimental evidence that economic agents faced with (Knightian) uncertainty become overly concerned with extreme, even if highly unlikely, negative events. Unfortunately, the very fact that investors behave in this manner, makes the dreaded scenarios all the more likely. This mechanism has played an important role in the financial crisis.*

*The main implication of rampant uncertainty for the TARP and its relatives, is that capital injections are not a particularly efficient way of dealing with the problem unless the government is willing to invest massive amounts of capital, probably much-much more than the current TARP. The reason is that Knightian uncertainty generates a sort of double – (or more) counting problem, where scarce capital is wasted insuring against impossible events.*

*A simple example makes the point: suppose two investors, A and B, engage in a swap, and there are only two states of nature, X and Y. In state X, agent B pays \$1 to agent A, and the opposite happens in state Y. Thus, only \$1 is needed to honor the contract. To guarantee their obligations, each of A and B put up some capital. Since only \$1 is needed to honor the contract, an efficient arrangement will call for A and B jointly to put up no more than \$1. However, if our agents are Knightian, they will each be concerned with the scenario that their counterparty defaults on them and does not pay the dollar. That is, in the Knightian situation the*

*swap trade can happen only if each of them has a unit of capital. The trade consumes two rather than the one unit of capital that is effectively needed.*

*Of course, real world transactions and scenarios are a lot more complex than this simple example, which is in itself part of the problem. In order to implement transactions that effectively require one unit of capital, the government needs to inject many units of capital into the financial system.*

*But there is a far more efficient solution, which is that the government takes over the role of the insurance markets ravaged by Knightian uncertainty. That is, in our example, the government uses one unit of its own capital and instead sells the insurance to the private parties at non-Knightian prices.*

*The Knightian uncertainty perspective also sheds light on some of the virtues of the now defunct asset-purchases program of the original TARP. In practice, financial institutions face a constraint such that value-at-risk must be less than some multiple of equity. In normal times, this structure speaks to the power of equity injections, since these are “multiplied” many times in relaxing the value-at-risk constraint. In contrast, buying assets reduces value-at-risk by reducing risk directly, which typically does not involve a multiplier. However, when uncertainty is rampant, some illiquid and complex assets, such as CDOs and CDO-squared, can reverse this calculation. In such cases, removing the uncertainty-creating assets from the balance sheet of the financial institution reduces risk by multiples, and frees capital, more effectively than directly injecting equity capital.*

*Does this mean that there is no role for capital injections? Certainly not. Knightian uncertainty is not the only problem in financial markets, and capital injections are needed for conventional reasons. Our point is simply that these injections need to be supplemented by insurance contracts, unless the government is willing to increase the TARP by an order of magnitude (i.e. measure it in trillion)».*

*Panics are exacerbated by the negative chatter and apocalyptic views of celebrity “experts”. Somehow, people cease to be able to see much beyond their own noses. Policymakers struggle to*

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outline a better future but by then they have lost all credibility. I continued to write:

#### Normality is Just a Few Bold Steps Away (FT 12/17/08)

*«Economic agents of all sorts, from creditors to consumers, are frozen waiting for some sense of normality to be restored amid the financial crisis. However, normality is much closer – just a few bold policy steps away – than is the conventional wisdom.*

*The system we had before the crisis is not permanently broken, but it needs to be made more resilient to aggregate shocks, especially panic-driven ones.*

*I build my analysis and policy prescription on three premises and observations. First, before the crisis the world economy had an excess demand for assets, especially AAA assets, and this will not change significantly once the crisis ends. Second, and contrary to what investors thought at the peak of the boom, the (private) financial sector in the US is not able to satisfy this demand for AAA assets when large negative aggregate events take place. However, the US government does have the capacity to fill this gap, especially because it is the recipient of flight-to-quality capital, even when the core of the global financial crisis is located in the US. Third (and with the benefit of hindsight), the main policy mistakes were made during rather than before the crisis.*

*These observations hint at a policy framework for the crisis and the medium run. For the latter, we can go back to a world not too different from the one we had before the crisis (real estate prices and construction sectors aside), as long as the government becomes the explicit insurer for generalized panic-risk.*

*That is, while monolines and other financial institutions can lever their capital for the purpose of insuring microeconomic risk and moderate aggregate shocks, they cannot be the ones absorbing extreme, panic-driven, aggregate shocks. This must be acknowledged in advance, and paid for by the insured institutions. Reasonable concerns about transparency, complexity, and incentives can be built into the insurance premia. Collective deleverage, as being done,*

*should not constitute the core response; macroeconomic insurance should.*

*The structural policy framework for the medium run also carries over to the crisis-policy itself. The essence of a solid recovery should build not from deleveraging and a forced brutal contraction of the financial sector, but from the explicit and systemic insurance provision against further negative aggregate shocks to their balance sheets caused by panic or predatory actions.*

*The recent intervention of Citi, with a mixture of (paid) insurance and capital, is promising, and so is the second intervention of AIG. These interventions need to be scaled up to the whole financial system (banks and beyond), and it is better to do it all at once, for in this case the likelihood of the government ever having to disburse funds for its insurance provision becomes negligible.*

*The good side of panic-driven contractions (as opposed to those driven by more structural factors) is that the potential for a strong recovery is always around the corner. Although the current crisis has already caused enough collateral damage to add persistence to the recession, there are still plenty of resources waiting on the side to make a sharp rebound possible.*

*I do not mean to say that this recession is an imaginary one. On the contrary, I believe it is a very serious recession. My point is simply that good policy has an opportunity to bring the recession back to familiar turf by defeating the extra gloom, and if this happens, the recession will become a manageable one from which current asset prices, on average, will look like once-in-a-lifetime deals.*

*Along the ideal recovery path described earlier, the real interest rate would remain at record low levels for a long time; risk-spreads and the VIX index (the Chicago Board Options Exchange Volatility Index, known as Wall Street's "fear gauge"), would decline gradually but consistently; asset prices and financial leverage would rise rapidly; the yen and dollar would depreciate vis-à-vis most other currencies, helping net exports in Japan and the US; commodity prices would recover but not to record levels.*

*In addition, non-residential investment, inventory accumulation, and durable expenditures would snap back, joining and leveraging on the fiscal and monetary expansions; global imbalances*

would stabilize and build back a bit; unemployment would peak at single digit levels and then begin to turn around; and inflation would rise only gradually in the developed world, creating the needed space for a recovery consolidation.

*There is no way out of a dreadful last quarter of 2008 and well into the first quarter of 2009. But the big difference with the consensus forecast is in the sharp recovery after that. The source of this difference is in the assessment of the dominant nature of the recession. Slow recoveries follow the typical credit crunch, as financial resources have to rebuild for growth to resume.*

*But while I think this was the nature of the mild recession preceding the events at stricken insurer AIG, and Lehman, the collapsed investment bank, the dominant recession now is very different in nature. It is a systemic run on all forms of explicit and implicit insurance contracts, but with no shortage of resources on the side. If confidence recovers, the resources to support the recovery are abundant and ready.*

*Nick Bloom, assistant professor of economics at Stanford University, provides the best available evidence of how an economy is likely to react to a temporary bout of volatility. He estimates that such a shock causes a sharp contraction for two quarters, which is then followed by abnormally high growth. I think this is the correct way to view the current recession, as long as bold policy actions are undertaken.*

*Of course many things can go wrong to cause a disastrous outcome, but enough has been written about these negative scenarios. It is time to, at the very least, begin to sketch what the good scenarios may look like».*

### 2.3 *The Political Panic Phase*

On December 20<sup>th</sup>, 2008 S&P downgraded eleven of the world's largest banks. On January 16<sup>th</sup>, 2009 the government provided Bank of America with a loss sharing agreement similar to the one Citi had received in November 2008.

These events took place against of backdrop of anti-bailout hysteria. There was a public outcry against any government ac-

tions that might benefit Wall Street, regardless of the impact of those actions on the rest of the economy. This rage increased tremendously after Secretary Paulson proposed the TARP fund in September. Congressmen like Dennis Kucinich and Ron Paul, to the far left and right of their respective parties, took the lead in criticizing the bailouts. Kucinich said on the House floor:

*«Why aren't we helping homeowners directly with their debt burden? Why aren't we helping American families faced with bankruptcy? Why aren't we reducing debt for Main Street instead of Wall Street? Isn't it time for fundamental change in our debt based monetary system, so we can free ourselves from the manipulation of the Federal Reserve and the banks? Is this the United States Congress or the board of directors of Goldman Sachs?».*

Talking about toxic assets on CNN, Ron Paul said:

*«You have to liquidate those mistakes. Those mistakes were made due to monetary policy. So you have to allow the market to adjust prices downward. And that's what we're not allowing to do.*

*If there are too many houses and the prices are too high, the sooner we get the prices down to the market level, as soon as we quit trying to encourage more housing – this is what we're doing. They're trying to stimulate houses and keep prices high. It's exactly opposite of what we should do.*

*So, we should get out of the way and not buy up bad debt. There's illiquid assets, but most of those are probably worthless. They're mostly derivatives. And we're sticking those with the taxpayer. So we have to recognize that the liquidation of debt is crucial. And if we did that, we would have tough times, there's no doubt about it, for a year. But if we keep propping a system up that's not viable, we're going to have a problem for decades, just like we did in the Depression»<sup>5</sup>*

As exemplified by these quotes, this type of rhetoric often shifted beyond criticizing the bailouts to calls to fundamentally reshape the US economy, for example, by curtailing central bank independence, even among the less traditionally populist members of Congress.

<sup>5</sup> PAUL R., *Buying Bad Debt is the Wrong Solution*, CNN, October 1<sup>st</sup>, 2008.

Politics and populism can really complicate policymaking. And they likely prevented a more systemic approach to providing insurance to the financial markets.

Others advocated a nationalization or Resolution Trust Corporation-type approach to the crisis. Paul Krugman wrote about “Gothamgroup”, a thinly veiled stand-in for Citigroup:

*A better approach would be to do what the government did with zombie savings and loans at the end of the 1980s: it seized the defunct banks, cleaning out the shareholders. Then it transferred their bad assets to a special institution, the Resolution Trust Corporation; paid off enough of the banks’ debts to make them solvent; and sold the fixed-up banks to new owners.*

*The current buzz suggests, however, that policy makers aren’t willing to take either of these approaches. Instead, they’re reportedly gravitating toward a compromise approach: moving toxic waste from private banks’ balance sheets to a publicly owned “bad bank” or “aggregator bank” that would resemble the Resolution Trust Corporation, but without seizing the banks first.*

*Sheila Bair, the chairwoman of the Federal Deposit Insurance Corporation, recently tried to describe how this would work: “The aggregator bank would buy the assets at fair value.” But what does “fair value” mean?*

*In my example, Gothamgroup is insolvent because the alleged \$400 billion of toxic waste on its books is actually worth only \$200 billion. The only way a government purchase of that toxic waste can make Gotham solvent again is if the government pays much more than private buyers are willing to offer.*

*Now, maybe private buyers aren’t willing to pay what toxic waste is really worth: “We don’t have really any rational pricing right now for some of these asset categories,” Mrs. Bair says. But should the government be in the business of declaring that it knows better than the market what assets are worth? And is it really likely that paying “fair value,” whatever that means, would be enough to make Gotham solvent again?*

*What I suspect is that policy makers – possibly without realizing it – are gearing up to attempt a bait-and-switch: a policy that looks like the cleanup of the savings and loans, but in*

*practice amounts to making huge gifts to bank shareholders at taxpayer expense, disguised as “fair value” purchases of toxic assets.*

*Why go through these contortions? The answer seems to be that Washington remains deathly afraid of the N-word-nationalization. The truth is that Gothamgroup and its sister institutions are already wards of the state, utterly dependent on taxpayer support; but nobody wants to recognize that fact and implement the obvious solution: an explicit, though temporary, government takeover. Hence the popularity of the new voodoo, which claims, as I said, that elaborate financial rituals can reanimate dead banks.<sup>6</sup>*

Joseph Stiglitz, writing on the same day that I did, advocated against insurance and for nationalization:

*It seems that some of our government officials have finally gotten around to doing some of this elementary arithmetic. So they have come up with another strategy: We’ll “insure” the banks, i.e., take the downside risk off of them.*

*The problem is similar to that confronting the original “cash for trash” initiative: how do we determine the right price for the insurance? And almost surely, if we charge the right price, these institutions are bankrupt. They will need massive equity injections and insurance.*

*There is a slight variant version of this, much like the original Paulson proposal: Buy the bad assets, but this time, not on a one by one basis, but in large bundles. Again, the problem is – how do we value the bundles of toxic waste we take off the banks? The suspicion is that the banks have a simple answer: don’t worry about the details. Just give us a big wad of cash.*

*This variant adds another twist of the kind of financial alchemy that got the country into the mess. Somehow, there is a notion that by moving the assets around, putting the bad assets in an aggregator bank run by the government, things will get better.*

*Is the rationale that the government is better at disposing of garbage, while the private sector is better at making loans? The record of our financial system in assessing credit worthiness – evi-*

<sup>6</sup> KRUGMAN P. «Wall Street Voodoo», *New York Times*, January 19, 2009.

*denced not just by this bailout, but by the repeated bailouts over the past 25 years – provides little convincing evidence.*

*But even were we to do all this – with uncertain risks to our future national debt – there is still no assurance of a resumption of lending. For the reality is we are in a recession, and risks are high in a recession. Having been burned once, many bankers are staying away from the fire.*

*Besides, many of the problems that afflict the financial sector are more pervasive. General Motors and GE both got into the finance business, and both showed that banks had no monopoly on bad risk management.*

*Many a bank may decide that the better strategy is a conservative one: hoard one's cash, wait until things settle down, hope that you are among the few surviving banks and then start lending. Of course, if all the banks reason so, the recession will be longer and deeper than it otherwise would be.*

*What's the alternative? Sweden (and several other countries) have shown that there is an alternative – the government takes over those banks that cannot assemble enough capital through private sources to survive without government assistance.*

*It is standard practice to shut down banks failing to meet basic requirements on capital, but we almost certainly have been too gentle in enforcing these requirements. (There has been too little transparency in this and every other aspect of government intervention in the financial system.)*

*To be sure, shareholders and bondholders will lose out, but their gains under the current regime come at the expense of taxpayers. In the good years, they were rewarded for their risk taking. Ownership cannot be a one-sided bet.*

*Of course, most of the employees will remain, and even much of the management. What then is the difference? The difference is that now, the incentives of the banks can be aligned better with those of the country. And it is in the national interest that prudent lending be restarted.<sup>7</sup>*

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<sup>7</sup> STIGLITZ J.E., *Commentary: How to Rescue the Bank Bailout*, CNN, January 26<sup>th</sup>, 2009.

Again, I felt these arguments minimized the role of the panic itself and what these policies could do to it. I then wrote:

#### A Capital-less Financial System (FT 01/26/09)

*«World financial markets are being ravaged by uncertainty and fear. The prices of all forms of explicit and implicit financial insurance have skyrocketed and hence, by a basic identity, the prices of risky assets have plummeted or the corresponding markets have disappeared.*

*Nowhere is this scenario more problematic than in institutions with strict capital requirements, such as banks, insurance companies, and monolines. For them, fire sale asset prices quickly wipe out their capital and, simultaneously, destroy their option to raise new capital since equity values implode.*

*The conventional advice is for these institutions to deleverage and to raise capital. While this is sound advice when dealing with a single institution in trouble, I believe this is exactly the opposite of what we need at this juncture of a massive systemic crisis. Forcing institutions to raise capital, be it private or public, at panic-driven fire sale prices threatens enormous dilutions to already shell-shocked shareholders, further exacerbating uncertainty and fuelling the downward spiral. This is self-defeating.*

*The question then is whether it is feasible to run a (nearly) capital-less financial system until the panic subsides. If it is, then a solution to the financial crisis is in sight since it would free up trillions of dollars of hard to raise funds, covering more than even the most extreme estimate of losses.*

*I believe it is feasible to run such a system for a while, because, essentially, distressed financial institutions need (regulatory) capital for two basic purposes: to act as a buffer for negative shocks, and to reduce their risk-shifting incentives by exposing them to their losses. However these two functions can be replaced, respectively, by the provision of a comprehensive public insurance, and by strict (and intrusive) government supervision while this insurance is in place.*

*A few days ago the UK announced a policy package that almost got it right, by pledging to insure banks' balance sheets and other private liabilities. Unfortunately, it backfired and caused a worldwide run on financials because it did not dissipate, and even exacerbated, the fear of forced capital raising (or nationalization).*

*The events following Lehman's demise should have taught us that this fear needs to be put to rest until we can return to normality. Financial institutions are too intertwined to predict with any precision the impact of diluting any significant stakeholder, and the markets are too fearful to feed them more uncertainty. Strong guarantees with strict supervision, and the commitment of no further capital injections at fire sale prices (directly or through convertible bonds) should go a long way in building a foundation for a sustained recovery.*

*With some dismay, I read that an enormous amount of time is being spent discussing what should be the price of the insurance and the first-loss threshold. It seems to me that given the extreme severity of the crisis and the asymmetries involved in failing in one or the other direction in each of these issues, the answers are rather obvious: the price of the insurance should be very low – say risk-neutral pricing plus 20 or 50 basis points of markup; and the first-loss threshold should be sufficiently low that no new capital will need to be raised in the short run if a loss arises.*

*The second intervention of Citi offers a micro-model of such an intervention, but it needs to be scaled up within each bank and massively across all banks and other key financial institutions. It also needs to be made much more attractive to all systemic financial institutions, even those that are not in deep distress.*

*What about the taxpayers? The best that can happen to all of us is that the financial crisis ends as soon as possible. This is the first priority, the rest can wait. If the transfer to the financial institutions ends up being too large for society's taste, then it is always possible for the government to undo some of it through ex-post taxation of excessive earnings. Conversely, if the transfer is too low (the price of the insurance and the first-loss threshold too high), it may well be that we do not get another chance, at great cost not only to financial institutions but also to taxpayers».*

On January 19<sup>th</sup>, 2009 the government of the UK announced a comprehensive bank rescue program. At the center of the program was the asset protection scheme, which provided insurance against 90 percent of losses above a “first-loss” threshold on portfolios of corporate and leveraged loans, commercial and residential property loans, and structured credit assets such as RMBS, CMBS, CLO, and CDO obligations. Initially, over a half a £ trillion of assets were insured at RBS and Lloyds Banking Group. The main criticism of the UK’s approach is that they charged such a high fee for the insurance that most banks chose not to opt in, leaving the overall economy more exposed to their failure than was socially optimal.

On February 10<sup>th</sup>, the new US Treasury Secretary, Timothy Geithner, in a widely anticipated speech announced principles for a comprehensive approach. Although markets reacted negatively to the lack of details in the speech, the general principles laid out were largely the correct ones, and by the end of February, the details of the stress tests and subsequent capital injections were laid out.

At the same time, the anti-bailout backlash grew. In a moment that galvanized a nascent “Tea Party” movement in the US, in February 2009, a CNBC editor named Rick Santelli gave a historic rant on the floor of the CME: «How about this, new President and new administration, why don’t you put up a Web site to have people vote on the Internet... to see if we really want to subsidize the losers’ mortgages... How many of you people want to pay for your neighbor’s mortgage that has an extra bathroom and can’t pay their bills?... President Obama, are you listening?... We’re thinking of having a Chicago Tea Party in July».

Nouriel Roubini continued the push for nationalization. He wrote:

*Even in the guarantee-after-first-loss model (No. 2 above), there are massive valuation problems, and there can be very expensive risk for the taxpayer, as the true value of the assets is as uncertain (as in the purchase of bad assets model).*

*The shady guarantee deals recently done with Citigroup and Bank of America were even less transparent than an outright government purchase of bad assets, as the bad-asset-purchase model at least has the advantage of transparency of the price paid for toxic assets.*

*In the bad-bank model, the government has the additional problem of having to manage all the bad assets it purchased, something that it does not have much expertise in. At least in the guarantee model, the assets stay with the banks. The banks know better how to manage – and also have a greater incentive than the government to eventually work out such bad assets.*

*The very cumbersome US Treasury proposal to dispose of toxic assets, presented by Geithner, taking the toxic asset off the banks' balance sheets as well as providing government guarantees to the private investors that will purchase them (and/or public capital provision to fund a public-private bad bank that would purchase such assets). But this plan is so non-transparent and complicated it got a thumbs-down from the markets as soon as it was announced. All major US equity indexes dropped sharply.*

*The main problem with the Treasury plan – that in some ways may resemble the deal between Merrill Lynch and Lone Star – is the following: Merrill sold its CDOs to Lone Star for 22 cents on the dollar. Even in that case, Merrill remained on the hook in case the value of the assets were to fall below 22 cents, as Lone Star paid initially only 11 cents (i.e., Merrill guaranteed the Lone Star downside risk). But today, a bank like Citi has similar CDOs that, until recently, were still sitting on its books at a deluded value of 60 cents.*

*Since the government knows no one in the private sector would buy those most toxic assets at 60 cents, it may have to make a guarantee (formally or informally) to limit the downside risk to private investors from purchasing such assets. But that guarantee would be hugely expensive if you needed to convince private folks to buy at 60 cents assets that are worth only 20 – or even 11 cents.*

*So the new Treasury plan would end up being again a royal rip-off of the taxpayer if the guarantee is excessive in relation to the true value of the underlying assets. And if, instead, the guarantee is not excessive, the banks need to sell the toxic assets at their true underlying value, implying that the emperor has no clothes.*

*A true valuation of the bad assets – without a huge taxpayer bailout of the shareholders and unsecured creditors of banks – implies that banks are bankrupt and should be taken over by the government.*

*Thus, all the schemes that have so far been proposed to deal with the toxic assets of the banks may be a big fudge – one that either does not work or works only if the government bails out shareholders and unsecured creditors of the banks.*

*So, paradoxically, nationalization may be a more market-friendly solution to a banking crisis. It creates the biggest hit for common and preferred shareholders of clearly insolvent institutions and, most certainly, even the unsecured creditors, in case the bank insolvency hole is too large; it also provides a fair upside to the taxpayer.*

*Nationalization can also resolve the problem of the government managing the bad assets: if you're selling back all the banks' assets and deposits to new private shareholders after a clean-up, together with a partial government guarantee of the bad assets (as was done in the resolution of the Indy Mac bank failure), you avoid having the government manage the bad assets.*

*Alternatively, if the bad assets are kept by the government after a takeover of the banks and only the good ones are sold back, through a privatisation scheme, the government could outsource the job of managing these assets to private asset managers. In this way, the government can avoid creating its own Resolution Trust Corp. bank to work out such bad assets.*

*Nationalization also resolves the too-big-to-fail problem of banks that are systemically important, and that thus need to be rescued by the government at a high cost to the taxpayer. This too-big-to-fail problem has now become an even-bigger-than-too-big-to-fail problem, as the current approach has led weak banks to take over even weaker banks.<sup>8</sup>*

I wrote:

Nationalization without Prices: A Recipe for Disaster (FT 02/17/09)  
[See also, An Insurance Complement to TARP II (WSJ 02/17/09)]

*«In all likelihood, political constraints severely limited the ambition and effectiveness of the US financial stability package. Economists need to unite behind relaxing these constraints. Talking light-*

<sup>8</sup> ROUBINI N., «Nationalize Insolvent Banks», *Forbes.com*, February 12<sup>th</sup>, 2009.

*ly about nationalization, as is increasingly taking place, does exactly the opposite.*

*There are two types of arguments for nationalization. One argument is a gut reaction that enough-is-enough and we must stop transferring resources to Wall Street's "crooks and oligarchs". This reaction only adds fuel to the fire and exacerbates self-destructive mob-mentality behavior. We need to stop this. The second argument is more reasoned and wonders whether it is not too late for any other solution. At current prices banks are either insolvent or will soon be, hence the only option is a time-out in which the government takes control of some of these banks, at least temporarily.*

*While I sympathize with this second view on the underlying premise that policy has been behind the curve and the call for a time-out, I disagree with its policy conclusion. This view takes for granted that nationalization would buy us the time-out. I think this will do just the opposite. The risk is enormous that it may trigger fears, uncertainties, and indirect effects that would make the aftermath of the Lehman episode seem like the "good old times".*

*There are at least two reasons why nationalization is likely to backfire: first, there are no (sensible) prices for the key assets in the balance sheets of financial institutions. Uncertainty and fear have ravaged all types of explicit and implicit financial insurance markets, destroying any sensible metric for the fundamental valuation of almost every risky asset. But without these prices, any decision of who is insolvent and needs to be nationalized is arbitrary.*

*Wherever the line is drawn, the fear of nationalization will swallow the next financial institution, and then the next one, and so on. Of course, there is no problem of fear, uncertainty and contagion if the US government takes over all banks, and insurance companies, and pension funds ... and foreign governments do the same with their banks, and insurance companies, and so on. But this is lunacy at best, and it is why the existing evidence of nationalizations in small economies is irrelevant for the case at hand.*

*The second reason, which we should have learned from the Lehman event and the near collapse of money markets that ensued, is that the inter-linkages of the modern financial systems are too*

*complex to risk major dilution of any stakeholder in this jittery environment. We do not know the systemic impact of such an action. This complexity interacts with uncertainty aversion, and could trigger massive flight-to-quality episodes.*

*But if nationalization is not an option, how do we get the timeout? My preferred (part of the) solution is to provide universal insurance for the assets that are currently clogging the balance sheets of banks and other financial institutions. For now, this insurance should be provided at pre-crisis prices for the corresponding asset class (or one notch below). This arrangement should be coupled with tight monitoring of the insured institutions and with retroactive punishments a few years down the road to those institutions (and their management) whose assets underperform relative to their asset class. This retroactive punishment is needed to limit adverse selection problems, where banks insure their worst assets without declaring them as such.*

*Another important aspect of this insurance arrangement is that it effectively removes from these institutions much of the burden of holding aggregate risk in a volatile environment. While some of these financial institutions played an important role in causing the crisis, a significant share of the losses of the surviving financial institutions stem from poor policy responses, which have exacerbated the systemic problem.*

*There is no reason to concentrate the cost of the policy mistakes on these institutions. Once this risk is removed from their balance sheet, the short-run need for recapitalization which is behind the nationalization push is eliminated, and we can wait until normality returns for financial institutions to rebuild their capital if the need is still present.*

*There are related proposals which I also like, such as injecting capital now and determining the price of it in the future, again once normality returns. A problem of this initiative is that it seems to leave the aggregate risk in the balance sheets of financial institutions.*

*US Treasury Secretary Tim Geithner's proposal has elements of both approaches, and it is probably as much as he could get in a heavily-politicized environment. Coupled with the bad bank arrangement and guarantees for private asset buyers, it resembles the insurance solution described above.*

*This mechanism appears more complex to jump start than the insurance one as it depends on more private sector decisions, and it transfers much of the upside to private capital rather than to the financial institutions that have been hurt the most by the systemic crisis. It is also worrisome that this strategy will require further capital injections in the short-run, which given the political environment may not allow the Treasury to honor its commitment to not nationalise the supported institutions. If this concern can be put to rest, the principles behind the Financial Stability Plan point in the right direction.*

*Of course time-outs are not very useful unless we work at restoring the pieces that are needed to return to normality and to restart the key securitization markets. Supporting distressed homeowners and mortgages is an important step, both in alleviating households' debt and in boosting the value and liquidity of the assets clogging the balance sheets of financial institutions.*

*The recent announcements are short on details, and perhaps revealed that the Treasury's economic team overestimated people's ability to distill the good news in an abstract message of principles when in panic mode. But there is good news in them, as they reflect a deeper understanding of the fundamental uncertainty problem than commentators and politicians possess. It is time for us to stop proposing ideas that only add fuel to the fire, and focus instead on facilitating the difficult task which lies ahead».*

However, investors failed to see the silver lining and the stock market, especially financial shares, plummeted. The downward spiral gained new momentum and further complicated the rescue operation. It was time to help but the pundits' game had gained its own counterproductive dynamics. Citing the next shoe that would drop or fueling populist clamors seemed more important than finding a solution to the crisis. I wrote:

How to Lift a Falling Economy (Washington Post 02/22/09)  
[Also see, Dow Boost and a (Nearly) Private Sector Solution to the Crisis (VOX 02/22/09), and A "Deal" Mentality is Bad Macroeconomics (FT 03/09/09)].

*«Hope is in short supply during these trying economic times. Nowhere is this clearer than in the financial system. Since Treasury Secretary Timothy Geithner's recent announcements, shares of the main US financial institutions have imploded yet again. The Dow Jones industrial average keeps falling.*

*And to make matters worse, politics has decidedly entered into the process of economic policymaking, which makes it all the more likely that we will end up with the wrong policy response, one that is probably too late anyway. Talk of nationalizations has become widespread, as if government takeovers were a panacea, further reinforcing the deadly spiral of fear and panic.*

*Already, this illness has spread to the global economy. It has ravaged the wealth of citizens around the world by about \$40 trillion, according to some estimates. This continuous wealth destruction has frozen consumers and companies alike, so the real economy is in a free-fall as well. How do we stop and reverse this process?*

*Here is a proposal: the government pledges to buy up to twice the number of bank shares currently available, at twice some recent average price, in five years.*

*While the policy is about future (and unlikely) interventions, the immediate impact would be enormous. In particular, it would turn around the negative dynamics of stock markets, and it would allow banks to raise private capital.*

*The most direct effect would be an increase in the price of banks' shares, as the pledge puts a floor on the price, but the upside potential is huge once we get over the hurdle posed by this crisis. That is, buying equity from these banks would become like buying Treasury bonds plus a call option on the upside. By the strong forces of contagion, this rise would immediately spread to non-financial shares. Consumers, especially retirees, would see some of their wealth replenished; insurance companies' balance sheets would improve; destabilizing short sellers and predators would be wiped out (as happened in Hong Kong in 1997); and we would have the foundations for a virtuous cycle.*

*The second, and reinforcing, effect would be the stabilization of the financial sector, as banks would possess the conditions neces-*

sary to raise private capital. Until now, banks have not wanted to raise capital because it would be highly dilutive at current prices. Potential investors have no interest in injecting capital because there is an enormous fear of further dilutions, especially through public interventions or, worse, outright nationalizations. A pledge to support the shares would reverse these dynamics and quickly recapitalize the banking sector.

How much would this cost taxpayers? Probably nothing. It is unlikely that the crisis will last five years, especially in the presence of an aggressive policy response, and most banks' shares are likely to soon trade for many times current prices. If the market prices surpass the government-pledged sale prices, there would be no cost to taxpayers.

There would be implementation issues, including how to customize to each bank's needs and the extent of the liquidity discount of the different portfolios. But the market needs good news sooner rather than later. And there is no real reason not to try such a proposal – not unless the “cut off your nose to spite your face” attitude grows even more prevalent».

On March 3<sup>rd</sup>, the Fed introduced the Term Asset-Backed Securities Loan Facility (TALF) program, in which the Fed provided non-recourse funding – the non-recourse element is key – for purchases of asset-backed securities.

I wrote:

#### A Policy Principle to Break the Downward Spiral (WSJ 03/05/09)

«A central aspect of the Obama administration's financial stabilization plan is to stress test the major banks and to recapitalize the ones that do not fare well. Analysts' responses to this plan have been lukewarm at best. Some claim that the aggregate scenarios used for the tests are too rosy. Other analysts think this to be a creeping nationalization policy. Either way, the news for the stock market is awful and, as a result, we have observed massive wealth destruction since the plan's announcement. Rather than help to contain fear, uncertainty has now risen to a new level, further complicating

*the financial health of the very institutions that were supposed to be stabilized under the plan.*

*I argue here that these perception problems can be solved by more directly addressing the core fear issue. This requires a clear policy principle: whatever we do, financial institutions should not be left holding the downward aggregate risk.*

*Under this basic principle, the stress test policy would be slightly modified as follows: each bank would be subject to stress tests as planned (I would advise giving some weight to even more extreme aggregate scenarios than those that have been proposed). In this case, however, the result of the stress test should not be used to determine how much more capital the bank may need in an extreme scenario. Instead, it would be used to determine how much insurance the bank needs to buy from the government to protect itself against these scenarios.*

*The immediate impact of such an apparently small modification would be to narrow the risks perceived by banks and their stakeholders. This would encourage banks to lend because the insurance policy would replace the need for massive self-insurance induced hoarding. It would also encourage private recapitalization. By insulating the financial system as much as possible from the downward risk of the current macroeconomic environment, the policy would break this deadly downward spiral where a worsening macroeconomic environment weakens financial institutions, which in turn further weaken the macroeconomic environment, and so on. With this principle firmly in place, survival risk would be extensively reduced allowing investors to make their decisions based on the long-term prospects of the particular institutions. Without this, investors and banks will remain mired in uncertainty and fear, relegating the natural forces of recovery (and there are many of them) to the sidelines.*

*A key dimension of the policy principle is to think not only about the particular institution in trouble but about the systemic implications of the policy. For example, some could argue that one way of breaking the perverse feedback loop between the health of a financial institution and the macroeconomic environment is to nationalize the bank (which means almost by definition, that the full insurance for the losses rests upon the taxpayer). However, while*

*this would indeed work for an individual bank, it would exacerbate, rather than reduce, the aggregate risk faced by non-nationalized institutions because now, a negative macroeconomic shock would make it more likely that they too would be nationalized. It is important not to fall into a fallacy composition where what is good for one institution in isolation may be just the opposite for the system as a whole. In other words, the principle goal should be the removal of the aggregate downward risk not only from individual financial institutions but from the leveraged institutions as a whole.*

*Who should pay for this insurance? Those most directly protected by the policy. Certainly the shareholders are first in line, but there is no reason to stop here. All preferred shares and debt that are being discounted by uncertainty should also contribute, perhaps by retaining some of the interest payments to service the insurance policy. The government should charge fairly for this insurance, using the same probabilities it assigns to the different scenarios used in the stress tests, and it should mandate that the banks acquire this insurance once they have converged on the particulars of the stress test».*

By mid-March, it started to become clear that generous assumptions about banks future earnings would be used in the stress tests and that no bank would “fail” the stress test. This essentially meant that most banks would not be forced to raise a lot capital at highly dilutive prices, that the stress tests would not be nationalization in disguise, and that woefully undercapitalized banks would be supported by the government if they were unable to raise capital on their own. On March 9<sup>th</sup>, the S&P 500 bottomed, closing at 676.5. On March 15<sup>th</sup>, Ben Bernanke mentioned “green shoots” in a historic interview on NBC’s “60 Minutes”, in which he tried to demystify the Fed for a skeptical public. Although the results of the stress test would not be announced until May 7<sup>th</sup>, some key elements of a successful plan were in place.

The optimism about bank earnings in the stress tests would ultimately be vindicated: in a post-fire sale world, in which sophisticated players were undercapitalized, huge returns were earned on plain vanilla uses of capital, like making markets. However, improvement in the real economy would be much slower; Martin Wolf may have been surprised by what he saw as a lack

of “mayhem” in the real economy in July 2008, but there was no lack of mayhem in 2009.

I wrote:

#### Constructive Solutions to the Financial Crisis (FT 03/16/09)

*«Suppose it was possible to rewind the clock to the first time we had a strong urge to rewrite economic history. A favorite stopping date would be the days before the Lehman-AIG debacle last year. Until then, we were dealing with localized inefficiencies and predatory behaviour among the main financial institutions. There was plenty to fix but it seemed manageable, mostly a matter of accelerating the medicine and aggressively dealing with problems on a case-by-case basis.*

*All of this changed for the worse after the Lehman-AIG event. The problem ceased to be firm-and market-localized, and turned into a severe systemic panic attack. This change in the nature of the problem has strong policy implications, since it requires a systemic, not a case-by-case, remedy. Of course the systemic problem first appears in relatively weaker institutions, but one should not confuse causes and consequences. Surely some financial institutions will appear insolvent in the strict accounting sense; this is what mark-to-market accounting will do to almost any leveraged institution in the midst of a severe systemic crisis.*

*However, simply destroying the intangible capital of a financial institution, or forcing a significant dilution of a stakeholder as a means of dealing with a systemic symptom of fear, is a highly inefficient and counterproductive policy response. It is the economic equivalent of putting out a fire with gasoline.*

*Fortunately, both the US Treasury and the Federal Reserve have the right diagnosis. They understand that the need is to restore systemic confidence with a limited amount of financial and political capital. They are on the right track, although not at the speed we all feel is required.*

*To remedy the latter, we should help, rather than obstruct them. We all have our favorite plans, but at this point we are of little help*

*to anyone when we keep changing the entire policy paradigm. We should take what we know of their current plan as given, and restrict our recommendations to operate within their framework. This is important not only to accelerate the process, but also to eliminate the enormous policy uncertainty that is destroying the stock market, private wealth, and balance sheets.*

*In this spirit, I would propose that any new recommendation should satisfy three constraints:*

*– Only good (policy) news is allowed. Any amendment to their plan must do more, not less, for the financial institutions and their stakeholders. This principle should be advertised broadly right away.*

*– It must have a reasonable cost. The amendment cannot be significantly more expensive for the US government than the current plan, and;*

*– It must be wealth enhancing. It cannot go against, and it hopefully should reinforce, the fiscal stimulus package.*

*The following plan satisfies these constraints:*

*– Raising private capital. Announce today that banks in need of more capital if aggregate conditions worsen (the stress test), will be given an option between the previously announced program and one in which new private capital raised receives a government guarantee for a price five years from now set at the February 2009 price used for the preferred shares. Alternatively, the government may invest in common shares but give the right to new investors to repurchase the government shares within five years at that price plus an interest rate charge. This guarantee holds regardless of whether the financial institution survives the crisis. Any difference between the expected costs of these two options is paid as a premium by shareholders (and possibly debt-holders).*

*– Insuring aggregate risk. The return on hard to value assets, whether they remain on the books of the financial institutions or are sold into the PPIF (public-private investment fund), should be guaranteed by the government at the insurance prices prevailing before the Lehman-AIG crisis. These assets can be subject to a “representations and warranties” clause where the financial institution pays a penalty if the performance of its insured assets is worse than the average of the corresponding category, five years hence.*

*The first item is clearly a positive development for shareholders since it adds an option which has no additional value over the current program if the financial institution's post-crisis future is poor, but is very valuable otherwise.*

*Interestingly, whenever the option has value, it also helps the government since now the private sector injects the capital in exchange for a guarantee that is not likely to be executed in such a scenario. Moreover, by bringing some sense of a floor, this policy also would trigger a stock market boom and hence reinforce the aggregate demand effects of the fiscal package. The second item has similar virtues, and it deals directly with one of the key adverse selection problems complicating asset valuations at this time (that banks will sell and insure their worst assets).*

*Will these policies be enough? Surely not, but if we are all rowing the same boat in the same direction, and keep a cool head, we will get out of this mess sooner rather than later».*

On March 23<sup>rd</sup>, the Treasury announced the details of the Public-Private Investment Plan. I wrote:

A Preliminary Reaction to the PPIP (FT 03/25/09)

(See also A "Legacy-Equity" Mechanism to Recapitalize the Banks (VOX 03/26/09)).

*«We are not out of the woods yet, but the elements of the Legacy Assets program are encouraging. They combine the strengths of the public institutions involved – the US Treasury, the Federal Reserve and Federal Deposit Insurance Corporation – to produce a powerful combination of public equity, loans, and guarantees to leverage private capital in the process of thawing frozen financial markets.*

*The main problem this US program seeks to solve, as an intermediate step in restarting private lending, is the enormous gap between the price at which banks are willing to sell their legacy loans and securities and what investors are willing to pay for them.*

*There are three prominent reasons behind this gap. First, there is asymmetric information about the quality of the assets between buyers and sellers. Second, investors are in panic-mode, which is*

*not in small doses due to macroeconomic and political uncertainty. Third, weak banks cannot afford to mark down the assets as this would create a visible capital-hole, and would be the end of a currently viable “don’t ask - don’t tell” recovery strategy.*

*The first of these reasons is the classic “lemons problem”. It is certainly the most studied of the three problems in economics but it is probably the least important in the context of the new program: the FDIC and most of the potential managers and buyers have significant expertise in analyzing these loans and securities. Moreover, it is always possible to add a “representations and warranties” clause to further protect the buyer against the seller’s misrepresentations.*

*The second reason, aversion to uncertainty, is a central aspect of the financial crisis. The main antidote for this symptom is the provision of insurance and guarantees. The Legacy Assets program hits this issue on the spot, particularly through its use of non-recourse loans. These loans have two bundled effects: the first one is to trim the tail-risk. The second one is simply to raise the expected return of private investment. In an environment with strong uncertainty aversion, the former effect is possibly more important than the latter effect. Put options have maximum value and the government is in a unique position to supply them.*

*The third reason, the capital-hole problem, is also addressed by the Legacy Assets program through its effect on boosting the bid-price for the loans and securities. However, this price increase may not be enough for some banks. In principle, the Capital Assistance program can be used to bridge the remaining gap, but it is not clear at this stage how these two programs – the Legacy Assets program and the CAP – are linked.*

*It would seem useful from the point of view of cleansing the balance sheets to connect these programs more directly, softening the CAP’s terms as the bank disposes of more assets. The “exceptional assistance” clause in the CAP may be the natural conduit to link these two programs for the most extreme cases, but a broader incentive arrangement could also prove useful.*

*What is the bottom line? The Legacy Assets program is well-conceived and deserves to be supported. As the Obama economic team has pointed out repeatedly, it is only one of the pillars of the*

*Financial Stability Plan. The next substantive step is the CAP. An important virtue of the Legacy Assets program that is not shared by the CAP at this moment is that it provides an insurance against aggregate uncertainty.*

*Through the non-recourse loans and the FDIC guarantees, the Legacy Assets program (partially) insulates private investors from worsening aggregate conditions. This is highly desirable in the current environment. In contrast, the CAP seems to leave most of this risk on the balance sheets of the banks (except for the component that is removed through the Legacy Assets program), as it forces banks to self-insure against extreme macroeconomic scenarios through capital over-accumulation.*

*This is not only an inefficient allocation of risks, but it is unlikely to appease panic-driven investors, who are in the mode of envisioning ever more extreme macroeconomic outcomes. One of the most devastating mechanisms at work at this time is the reinforcing feedback between bad news in the real economy and bad news in the financial system. Aggregate-insurance severs this negative feedback-loop. The Legacy Assets program started the job on this front; it is now for the CAP to complete it».*

#### Steady Through this Storm (Washington Post 04/06/09)

*«President Obama recently stated that he is a big believer in “persistence,” and he provided examples of how he will persist in many areas of economic policy. That word and his examples gave me more hope for the future of the US economy than I have had in some time.*

*We are experiencing the mother of all modern financial crises. Real and imaginary counterparty risk, policy uncertainty, and widespread panic have reduced purely private financial transactions to a trickle in many vital markets. Unfortunately, an already complex economic problem is being compounded by an awful political environment, and the prefrontal cortex of our political system is freezing up as well. Politicians and commentators from the left and right are in panic mode and have retrenched to their basic instincts, mov-*

*ing away from reasoned analysis. It is, frankly, scary to hear the right regurgitating the untimely liquidationist claims that Treasury Secretary Andrew Mellon made during the onset of the Great Depression. It is also frightening to see the left going after Wall Street “oligarchs” and the financial institutions they have always hated, which finally are easy prey.*

*Fortunately, some voices of reason remain, and the Treasury, Federal Reserve, and Federal Deposit Insurance Corp. are among them. They have been persistent. It is true that the announcement made in early February by Treasury Secretary Timothy Geithner lacked specifics, but it was not short on principles and general guidelines. These principles recognized the systemic nature of today’s crisis and the critical role that uncertainty has played in it. The announcement of the “legacy assets” program last month confirmed these principles. From this, one can get a sense of perseverance and determination, which are exactly what an economy needs during times of massive uncertainty.*

*The basis of the US financial system and economy is private capital. Policies must encourage rather than discourage private capital participation for the short run as well as the long run. One of the main problems behind the crisis is excessive leverage, which means too much debt relative to equity. We need more, not less, equity and more, not fewer, shareholders. Because it is the government’s responsibility to ensure a well-functioning financial system during episodes of panic, it is not anti-capitalist for the government to support private capital during these episodes, just as it is not anti-capitalist to charge for this service in advance and to regulate financial institutions of systemic importance.*

*The US financial system is worth preserving, and the only safe policy while investors are in panic mode is to preserve it with as few changes as possible, with the government providing the resources needed to get to a point where we can fix the structural problems that contributed to the crisis. Contrary to popular perception, providing this support has nothing to do with the “zombie” policies of the Japanese experience during the 1990s. There, the problem was that banks kept making loans to unproductive companies to avoid having to recognize the losses associated with old loans to those companies. As a result, good companies had less access to loans*

*than they would have otherwise. But a policy of supporting the sale of troubled assets through public guarantees, loans and equity participation, complemented with a public-private program to strengthen the capital of systemically important financial institutions, is the opposite of the zombie strategy. Such a framework builds a solid foundation for new lending and does not create incentives for banks to lend to the wrong clients.*

*If the administration's economic team can keep a steady course, and if it is persistent, we have a good chance of getting out of this mess in the near future. I am hopeful».*

#### A Commission-free PPIP (FT 04/07/09)

*«The most effective antidote for the devastating role of uncertainty in financial markets is some form of public insurance or guarantee. One of the great virtues of the PPIP (public-private investment program) for Legacy Assets is that it provides such a guarantee to potential investors in these assets, and by so doing, it boosts their bid-prices thus facilitating the removal of troubled assets from banks' balance sheets.*

*The reason a cleansing of banks' balance sheets is desirable is not for the sake of selling assets (a point missed by those who complain that recent changes to the mark-to-market rules are contrary to the PPIP objectives), but because by removing the uncertainty associated with these assets from banks' books, their own fears will subside and they will then be willing to assume more new risks through lending. That is, again, the problem is one of dealing with the extreme and freezing caution triggered by uncertainty.*

*The PPIP, as designed, has to deal with two layers of uncertainty: that of the investors and that of the banks. As I have argued before, a more direct mechanism is to insure the assets of the banks directly, as the British have done.*

*The main advantage of this direct approach over the PPIP is that it gives all the benefit of the insurance mechanism to the distressed banks rather than sharing the benefits with outside investors. By doing so it also helps with the recapitalization of the banks. (The current*

*system may do just the opposite and hence it needs to be complemented by a more generous Capital Assistance Program.) The advantage of the PPIP, on the other hand, is that it solves the thorny issue of how to price these legacy assets (or the insurance) as it brings in, as partners, private sector experts who assess the value of these assets.*

*But there is an obvious way of getting the best of both worlds: let the main banks be among the investors (and managers) in these legacy assets.*

*Banks are without-a-doubt the best qualified to value other banks' assets, and thus their participation in the PPIP not only as asset sellers but also as asset buyers offers a low-hanging fruit. To see the point, imagine an abstract scenario where two similar (in terms of their asset composition) banks swap their troubled assets; but by doing so they receive the PPIP implicit guarantee (which would require setting up some sort of SIV). In such a case, banks would simply be swapping high risk assets with low risk assets (or partially guaranteed assets), thus increasing the banks' lending capacity.*

*This compromise solution could raise the concern that these risks will remain on the balance sheets of the banks, having been just swapped around. Clearly though, this concern misses the point, namely, that the PPIP's main virtue is its built-in insurance arrangement. Thus, the compromise solution is just a way of focusing this same insurance directly where it provides the maximum benefit, without having to pay a big commission to hedge funds and other non-bank private investors for their valuation services.*

*Interestingly, this compromise solution is spontaneously emerging from the private sector within the context provided by the PPIP, and hence there is no need to implement substantial new plans. "All" that is really needed is a curbing of the political system's kneejerk reactions».*

Stress Tests and the Decoupling of Main and Wall Street (VOX  
04/20/09)

*«As the date for the release of the stress tests on the largest 19 US banks approaches, anxiety levels and strategic positioning are on*

*the rise. One of the main concerns (from a macroeconomic point of view) is whether the stress tests' parameters are extreme enough given the current scenario. Opponents of the US Administration's CAP/PPIP program (i.e. the Capital Assistance Program and the Public-Private Investment Program) have seized on this concern over the level of severity of the tests – which has some validity – to torpedo the credibility of the entire program. However, I argue here that a small amendment to the CAP would render this debate mute and serve to further stabilize the financial system.*

*While I remain broadly supportive of the financial stabilization program put in place by the Treasury, the Fed, and the FDIC, I have argued before that the CAP component leaves too much of the macroeconomic risk in the banks' balance sheets. This remains problematic because it creates a reinforcing feedback-loop between bad news in the real economy and bad news in the financial system. This perverse loop brought the economy down to its knees during the last quarter of 2008 and first quarter of 2009, and has the potential to abruptly destabilize the incipient recovery in financial markets. This feedback-loop needs to be severed as soon as possible.*

*For this reason, the results from the stress tests should not be used to determine how much more capital a bank may need in an extreme scenario. Instead, it should be used to determine how much insurance the bank needs to buy from the government to protect itself against such scenarios. That is, a bank should be required to have as much capital as needed for the central scenario. If aggregate conditions are worse than expected, the government should cover the shortage of capital without equity compensation. If conditions are better than expected, the government should be paid a fee that compensates it for the insurance it provided. The government should charge fairly for this insurance, using the same probabilities it assigns to the different scenarios used in the stress tests. A weak bank needs to contract for more insurance than a strong bank.*

*The immediate impact of such an apparently small modification would be to encourage banks to lend because the insurance policy would replace the need for massive self-insurance induced hoarding.*

*It makes no sense that the aggregate risk remains on the most leveraged institutions of the system – which is precisely what got us into this mess. Instead, the way to solve this mismatch is to make fair insurance available to the banks rather than to force them to deleverage at great cost for the entire economy».*

#### 2.4 *The Recovery Phase*

With the beginning of the recovery, everyone's attention quickly turned to what longer-term reforms would be implemented in response to the crisis.

Kenneth Rogoff had an interesting exchange with interviewer and broadcast journalist Charlie Rose in November 2009:

CHARLIE ROSE: *Are you impressed with what Hank Paulson, Tim Geithner, Ben Bernanke and then Larry Summers have done in order to meet the crisis?*

KENNETH ROGOFF: *You know.*

CHARLIE ROSE: *Where do you part company with what they did?*

KENNETH ROGOFF: *The biggest complaint I have is the fact that we bailed out the people who lent money to the financial institutions. When we bailed out the banks, everyone who lent money got paid instead of having a bankruptcy of some sort. So in a normal bankruptcy, if you lent money to a bankrupt firm, you don't get it all back.*

CHARLIE ROSE: *Right.*

KENNETH ROGOFF: *And we decided we just didn't want to handle the panic. We cast this net over the entire system.*

CHARLIE ROSE: *Was it necessary to do that?*

KENNETH ROGOFF: *Well, you know, I'll be honest. I don't want to go back and see it again and try it my way. I mean – but if I were there and doing it again, I would have wanted to see a little more pain on the bondholders. I think we're going to pay big time now because we have to regulate the heck out of the financial system because everybody knows that they're going to get bailed out.<sup>9</sup>*

<sup>9</sup> CHARLIE R., November 10<sup>th</sup>, 2009. <http://www.charlierose.com/guest/view/6769>.

In April, I wrote:

Building a Resilient Financial System (FT 04/22/09)

*«Ben Bernanke, US Federal Reserve chairman, and Tim Geithner, US Treasury Secretary, have reminded us recently that it is time to start thinking about the financial system of the future. This is important not just for the future itself, but also because doing so helps to narrow the types of policies that are desirable during the current crisis. The measures taken today should not hamper, and ideally should facilitate, the transition into the financial system of the future.*

*There is a natural unifying principle that offers an opportunity for a smooth transition: the financial system of the future should be built on public-private partnerships where, for a premium, the government explicitly assumes most of the tail aggregate risk, while the private sector provides the capital necessary to deal with microeconomic risk and small aggregate shocks.*

*This new principle differs from the conventional wisdom, which instead points toward boosting capital requirements for financial institutions. The problem with the standard recipe is that it does not distinguish between micro and macro risk. The core of business for financial institutions is the management and redistribution of microeconomic risk. This activity however requires much less capital than does managing aggregate risk. Therefore, basing capital requirement on the latter activity's demands would be enormously wasteful.*

*Weighting capital requirements by the amount of macro-risk banks take is reasonable, but it does not substitute for the public guarantee. It is still the case that banks would be over-capitalized with respect to their main activities, and possibly undercapitalized with respect to extreme aggregate shocks, such as the current one. In fact, insurance and macro-based-weights are complementary measures. With the right macro-risk weighting-function, the capital requirement effect of keeping substantial amounts of uninsured macro-risk on its balance sheet should be nearly prohibitive for a leveraged financial institution.*

*Of course a system that is based on insurance would require strong supervision, but there is consensus already that such supervision is needed regardless of the system we adopt. Moreover, in practice the government ends up operating as an ex-post insurance company against crises anyway, why not make the arrangement explicit and charge a premium for it?*

*Put simply, the deepest pocket in the economy (the government) should be the insurer of last resort, and behave as would any insurance company by accurately assessing its clients' risks. Having acquired intimate knowledge of these risks, it can also assess the potential systemic impact of these private risks, and impose minimum-insurance requirements to internalize these systemic risks. That is, the institutions deemed "too big" or "too complex" to fail would be required to have more aggregate insurance than do the non-systemically important institutions.*

*As it turns out, this insurance system could also play a central role in the solution to the current crisis. The most devastating mechanism at work at this time is the reinforcing feedback between bad news in the real economy and bad news in the financial system. The aggregate-insurance arrangement severs this feedback-loop, and hence it establishes the conditions necessary to restore confidence in the financial system even as the real economy goes through the natural – but now shorter – lags of a recessionary episode.*

*In sharp contrast, the deleveraging process (the equivalent to raising capital requirements) acts as a contractionary device before it can turn into a stabilization mechanism through enhanced confidence. Aggregate insurance rather than deleveraging is the right remedy at this time if one of the main goals is for a quick recovery in lending».*

#### Economic Witch-hunting (FT 07/08/09)

*«Perhaps one of the economic phenomena most akin to witch-hunting is the diagnostic and policy response that develops during the recovery phase of a financial crisis. Understandably, pressured politicians and policymakers rush to find culprits and*

*sources of instant gratification. All too often they find a ready supply of these in preconceptions and superficial analyses of correlations. This time around the scapegoats are global imbalances and leverage.*

*Global imbalances are the victim of preconceptions: many economists and commentators argued before the crisis that large global imbalances would lead to the demise of the US economy once capital flows decided to run en masse, as often happens with the sudden stops that afflict emerging market economies. The crisis indeed came, but rather than destabilizing the US economy, capital flows helped to stabilize it, as flight-to-quality capital sought rather than ran away from US assets. (There was a reallocation from private to public assets which was indeed very destructive, but it had little to do with the distinction between foreign and domestic assets highlighted by the sudden stop camp.)*

*The fact that the actual mechanism behind the crisis had nothing to do with that which was used to explain the forecast of doom has long being forgotten, false idols have been erected, and new gurus roam the land. Along the way, global imbalances have been indicted for witchcraft, and ever more exotic rebalancing and currency proposals make it to the front pages of newspapers around the world.*

*Leverage is the victim of superficial analyses of correlations: in my view one of the main factors behind the severity of the financial crisis was the excessive concentration of aggregate risk in highly-leveraged financial institutions. Note that the emphasis is on the concentration of aggregate risk rather than on the much-hyped leverage. The problem in the current crisis was not leverage per se, but the fact that banks had held on to AAA tranches of structured asset-backed securities which were more exposed to aggregate surprise shocks than their rating would, when misinterpreted, suggest.*

*Thus, when systemic confusion emerged, these complex financial instruments quickly soured, compromised the balance sheet of their leveraged holders, and triggered asset fire sales which ravaged balance sheets across financial institutions. The result was a vicious feedback loop between assets exposed to aggregate conditions and leveraged balance sheets.*

*The distinction emphasized in the previous paragraph may seem subtle, but it turns out to have a first order implication for economic policy design. The optimal policy response to this problem is not to increase capital requirements (or to deleverage), as the current fashion has it, but to remove the aggregate risk from systemically important leveraged financial institutions' balance sheets. This should be done through prepaid and often mandatory macro-insurance type arrangements, which can accommodate valid too-big or too-complex to fail concerns, but without crippling the financial industry with the burden of brute-force capital requirements.*

*In summary, it is not global imbalances or leverage that need to be reined in. Instead, the key imbalance was in the massive demand for AAA-instruments from all parts of the world (including US money market funds and other domestic institutional investors) which the US financial sector was unable to produce regardless of how much aggregation and tranching contortions it used to fit the task. More precisely, the financial sector can produce it, but not during severe crises, and it is this specific gap that needs to be fixed with pre-arranged public support and paid for up front».*

### **3. - With the Passage of Time**

As it is apparent from my real-time reactions, throughout the crisis I took the position that addressing the panic component of crises is very central. The passage of time has consolidated my view on this matter. Thus, in my Mundell Fleming Lecture at the IMF in November 2009, I developed this point further by drawing an analogy between a sudden cardiac arrest episode and a financial panic. I began with a quote:

*«Sudden cardiac arrest (SCA) is a condition in which the heart suddenly and unexpectedly stops beating. When this happens, blood stops flowing to the brain and other vital organs.... SCA usually causes death if it's not treated within minutes...». (NHLBI/NIH)*

And then continued:

*«There are striking and terrifying similarities between the sudden failure of a heart and that of a financial system. In the med-*

ical literature, the former is referred to as a sudden cardiac arrest (SCA). By analogy, I refer to its financial counterpart as a sudden financial arrest (SFA).

When an economy enters an episode of SFA, panic takes over, trust breaks down, and investors and creditors withdraw from their normal financial transactions. These reactions trigger a chain of events and perverse feedback-loops that quickly disintegrate the balance sheets of financial institutions, eventually dragging down even those institutions that followed a relatively healthy financial lifestyle prior to the crisis.

An important risk factor behind SCA is coronary artery disease (CAD), and the front line prevention for CAD is a healthy lifestyle. However, the medical profession is keenly aware that people make poor choices regardless of warnings, and that even those who do adopt a healthy lifestyle and have no known risk conditions may still experience a fatal SCA episode. The pragmatic response to these facts of life is to complement preventive healthy lifestyle guidelines and advise with an effective protocol to prevent death once SCA takes place. The main (and perhaps only) option to treat SCA once triggered is the use of a defibrillator. Moreover, the window of time for this treatment to be effective is very narrow, just a few minutes, making it crucial to have defibrillators readily available in as many places as is economically feasible.

Unfortunately, the pragmatic approach followed by the medical profession in reducing the risk of death associated with SCA contrasts sharply with the stubborn reluctance to supplement the financial equivalent of CAD-prevention type policies (mostly regulatory requirements) with an effective financial defibrillator mechanism. The main antidote to SFA is massive provision of credible public insurance and guarantees to financial transactions and balance sheets. In this analogy, these are the financial equivalent of a defibrillator.

The main dogma behind the great resistance in the policy world to institutionalize a public insurance provision is a fuzzy moral hazard argument: if the financial defibrillator were to be implanted in an economy, the argument goes, banks and their creditors would abandon all forms of healthy financial lifestyle and would thus dramatically increase the chances of an SFA episode.

*This moral hazard perspective is the equivalent of discouraging the placement of defibrillators in public places because of the concern that, upon seeing them, people would have a sudden urge to consume cheeseburgers since they would realize that their chances of surviving an SCA had risen as a result of the ready access to defibrillators.*

*But actual behavior is less forward looking and rational than is implied by that logic. People indeed consume more cheeseburgers than they should, but this is more or less independent of whether defibrillators are visible or not. Surely, there is a need for advocating healthy habits, but no one in their right mind would propose doing so by making all available defibrillators inaccessible. Such policy would be both ineffective as an incentive mechanism, and a human tragedy when an episode of SCA occurs.*

*By the same token, and with very few exceptions, financial institutions and investors in bullish mode make portfolio decisions which are driven by dreams of exorbitant returns, not by distant marginal subsidies built into financial defibrillators. Nothing is further from these investors' minds than the possibility of (financial) death, and hence they could not ascribe meaningful value to an aid which, in their mind, is meant for someone else. This is simply the other side of the risk-compression and undervaluation during the boom phase. Logical coherence dictates that if one believes in this undervaluation, then one must also believe in the near-irrelevance of anticipated subsidies during distress for private actions during the boom.*

*Of course, once the crisis sets in, insurance acquires great value and leads to more risk-taking and speculative capital injections into the financial system, but by then this is mostly desirable since the main economy-wide problem during a financial panic is too little, not too much, risk-taking. The last thing we need at this time is for creditors to panic, and shortsellers to feast, as they suddenly realize that financial institutions can indeed fail from self-fulfilling runs, fires sales, and liquidity dry-ups, for which there is no counteracting policy framework in place aside from ill-timed "market discipline" or a high-fatality risk surgery. Indeed, attempting to "resolve" a large and interconnected institution in the middle of a panic, when*

*asset prices are uninformative and hence “resolution” decisions are largely arbitrary, carries the serious risk of adding fuel to the fire (panic).*<sup>10</sup>

*In any event, when SFA does take place, it becomes immediately apparent to pragmatic policymakers that there is no other choice than to provide massive support to distressed institutions and markets, but since the channels to do so are not readily available, precious time and resources are wasted groping for a mid-crisis response (recall the many flip-flops during the early stages of the TARP implementation). If one is of the view (which I am not) that hubris plays only a small role during the boom and instead it is all about incentive problems due to anticipated subsidies during distress, then one must believe that savvy bankers and their creditors anticipate intervention anyway. Hence the incentive benefit of not having financial defibrillators readily available does not derive from the absence of a well designed ex-ante policy framework but from the real risk that improvised ex-post interventions may fail to be deployed in time to prevent death from SFA. This logic seems contrived at best as the foundation for a policy framework that does not include readily available financial defibrillators.*

*In summary, it is a fact of life, and of cognitive distortions, financial complexity, and innovation in particular, that SFA episodes will continue to happen regardless of how much regulatory creativity policymakers may muster. The absence of a financial defibrilla-*

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<sup>10</sup> One way to get a sense of how much the market values the “too big to fail” insurance provided by the government is to compare the cost of funding for small and large banks. Baker and McArthur (2009) compare the average costs of funding for banks with more than \$100 billion in assets to the average costs for banks with less than \$100 billion. They find that between the first quarter of 2000 and the fourth quarter of 2007, the large banks’ costs were 0.29 percentage points lower than the small banks, averaging across time. Between fourth quarter 2008 and second quarter 2009, the spread increased to 0.78 percentage points. Clearly, there are many reasons why larger and smaller banks can have different costs of funding: different types of assets, different amounts of leverage, and so on. Baker and McArthur (2009) take the difference between these spreads, 0.78 minus 0.29, as a crude upper-bound on the subsidy associated with the solidification of the “too big to fail” policy after Lehman’s collapse. I would suggest an alternative interpretation: during boom times, the “too big to fail” insurance was there but of little importance, while during the crisis, it became much more important and probably a source of stability.

*tor is a very weak incentive mechanism during the boom phase, and a potential economic tragedy during a financial crisis. We need a more pragmatic approach to SFA than the current monovision CAD-style, hope-for-the-best, approach. We need to endow the policy framework with powerful financial defibrillators.*

*Modern economies already count on one such device in the lender of last resort facility (LOLR) housed at the central bank, but this has clearly proven to be insufficient during the recent crisis. I discuss three supplements to this facility:*

*– Self insurance, which is where policymakers' instinct lies. In the current context this is reflected in a call for higher capital adequacy ratios, especially for systemically important financial institutions.*

*– Contingent capital injections, which is where most academics' instinct lies. The basic idea is to reduce the costs associated with holding capital when is not needed. Proposals primarily differ on whether the contingency depends on bank-specific or systemic events, and on whether the source of capital is external to the distressed bank or internal (as in the debt-convertibility proposals).*

*– Contingent insurance injections, which is the most cost effective mechanism for the panic component of SFA. The basic idea is that the enormous distortion in perceived probabilities of a catastrophe during panics can be put to good use since economic agents greatly overvalue public insurance and guarantees. Providing these can be as effective as capital injections in dealing with the panic at a fraction of the expected cost (when assessed at reasonable rather than panic-driven probabilities of a catastrophe).*

*In practice, there are good reasons to have in place some of each of these types of mechanisms. For normal shocks, it is probably easiest to have banks self- and cross-insure. For large shocks, there is always a fundamental component, which is probably best addressed immediately with contingent capital (private at first and in extreme events, public). However, the large panic component of an SFA episode requires large amounts of guarantees, which would be too costly and potentially counterproductive (if they add to the fear of large dilutions) to achieve through capital injections. For this component, a contingent-insurance policy is the appropriate response.*

*One particularly flexible form of a contingent insurance program is the Tradable Insurance Credits (TICs) proposed in Caballero and Kurlat (2009b). These TICs act as contingent (on systemic events) CDS to protect banks' assets against spikes in uncertainty. They are a (nearly) automatic, pre-paid, and mandated mechanism to ring-fence assets whose price is severely affected by SFA, as it was done ex-post in the US for some Citibank and Bank of America assets and was offered more broadly in the UK».<sup>11</sup>*

#### **4. - Taking Stock**

Severe financial crises have large panic components. The most efficient mechanism to deal with the latter is through extensive public guarantees. When the economy is in free-fall is not the time to reform the financial markets, attempt to teach permanent lessons, or seek revenge. All that can wait, in the same way that a patient with sudden cardiac arrest needs urgent defibrillation, not dietary advice or open heart surgery (see Caballero 2009a).

Good policymakers understand the nature of the problem, although recognizing the early symptoms of a systemic event is not an exact science, and for this reason there is almost always a lag in the initial reaction. However, the politics extend the lags substantially beyond the time it takes for policymakers to realize the nature of the problem, at great cost to both the financial system and the economy as a whole. The following quote from Swagel (2009), then Assistant Secretary for Economic Policy, vividly captures this reality:

*«Political constraints were an important factor in the reluctance at the Treasury to put forward proposals to address the credit crisis early in 2008. The options that later turned into the TARP were first written down at the Treasury in March 2008: buy assets, insure*

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<sup>11</sup> It turns out that the Bank of America deal was never signed, but the perception that it had been was enough to contain the panic. The UK system was less successful in terms of the takers than it would have been socially optimal because it was voluntary and very expensive. Both aspects would be improved by the TICs framework.

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*them, inject capital into financial institutions, or massively expand federally guaranteed mortgage refinance programs to improve asset performance from the bottom up. But we at the Treasury saw little prospect of getting legislative approval for any of these steps, including a massive program to avoid foreclosures. Legislative action would be possible only when Treasury Secretary Henry Paulson and Federal Reserve Chairman Ben Bernanke could go to Congress and attest that the crisis was at the doorstep, even though by then it could well be too late to head it off». (Swagel, page 4).*

Our role as economists during crisis and panics is to be constructive and to try help policymakers do their delicate job. Unfortunately, we often ignore pragmatic political constraints and end up adding fuel to the fire. My goal in going over some of the public exchanges that took place during the crisis, is hopefully to remind us of what not to do in the next one.

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