Why it happened and what to do about it

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Edward Fullbrook

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Introduction

Never has a financial crisis been so global as that of 2008. Yet the degree to which the financial sectors of globally integrated economies have contributed to and suffered from that crisis has varied enormously. Iceland's financial sector bankrupted its country, and those of the US and the UK narrowly escaped total meltdown. The advanced banking systems of China and Singapore, on the other hand, have reported no major casualties, and those of many European countries, although scathed, have escaped the debacles of their American and British counterparts. These differences are epistemologically significant. Since all nations forming the global economy, large and small, were subject to the same temptations and the same possibilities for errors of judgement and entrapment in ideological black holes, it follows that the levels of competence and incompetence characterizing bankers, regulators and economists advising them has between nations been hugely divergent.

The case of China is especially telling. China's chance of swallowing a lethal dose of America's toxic assets exceeded those of every other country. Each year its financial system faced the task of investing a significant percent of China's GNP in the US economy. But just as competent bus drivers drive their buses safely thorough dangerous traffic, China's bankers safely invested their country's trillions in 21st-century America. But why were they competent when their American and British counterparts most obviously were not? A short article in today's *Financial Times* gives us some clues.[1]

Its author, Liu Mingkang, is the economist chairman of the China Banking Regulatory Commission. He lists what he regards as the five factors that "triggered the global financial crisis" .

1. "the firewall between capital and banking markets was eroded by unsound financial innovations."
2. "macro-prudential regulation was neglected."
3. "financial institutions had too much leverage and were too opaque."
4. "incentives for staff at financial institutions were driven by short-term gains, rather than long-term benefits."
5. "the bail-out put the cart before the horse by pumping in capital and liquidity before cleaning up balance sheets."

It is highly significant that in offering his list of five causes Mingkang is **not** talking from hindsight. The first four of his five causes are merely the obverse of the policies advocated by Chinese economists and practiced by the Chinese banking system **prior to the crisis**. Mingkang tactfully explains Chinese economics for his *Financial Times* readers like this.

> In an increasingly interconnected world, financial risks now spread like pandemics. One of the effective ways to prevent risk contagion is to set up firewalls between banking and capital markets.
>
> Unfortunately, many people have forgotten this principle, or dispute it as "old-fashioned". However, in China we have maintained such a firewall mechanism in our financial system reform. Only qualified commercial banks are allowed to participate in

[1] Liu Mingkang, "Basic rules helped China sidestep bank crisis", *Financial Times*, 28 June 2009.

non-banking activities, and have strict firewalls separating them. We insist that the main funding source of banks should always come from deposits. On top of that, the China Banking Regulatory Commission (CBRC) is developing a regulation that would require firewalls to be established between commercial banks and their controlling shareholders and between commercial banks and their non-banking subsidiaries, in order to prevent risk contagion.

Sometimes the most effective way to address a complex issue is by using basic, simple but useful measures. Practice shows us that traditional tools work, especially considering that financial engineering can malfunction. In recent months we have noticed that many regulators in the rest of the world have also started to embrace this "back to basics" approach.

Today in many countries, especially the US and UK, the neoclassical-neoliberal mainstream is so institutionally entrenched that there exists the danger that its faithful, instead of working to disabuse themselves of the illusions that facilitated the global disaster, will put their efforts to shielding themselves from the guilt and shame that rightly they should bear. With few exceptions, several of whom are contributors to this book, economists, no less than men-in-the-street, remained silently oblivious to the approaching financial collapse and the human loss that follows. Even now the profession's upper orders exhibit no inclination to subject the antecedents of the recent events to a rigorous and, most important, irreverent analysis. But only if we, like the Chinese, can find the intellectual courage to forgo the beatitudes of Economics 101, can we hope to approach the truth of why it happened and how it can be prevented from happening again.

This book offers 12 papers on the crisis by 10 economic thinkers who, like Mingkang, have that courage in abundance. Each paper has appeared in the *real-world economics review*. Notably, two of them, Ian Fletcher's and Frédéric Lordon's, appeared before the Crash. Other contributors, including Paul Davidson, Jacques Sapir and James Galbraith, have for years warned of the demise that awaited us if economic policy continued to be led by neoliberal economists. But no contributor to this collection, indeed no economist anywhere, has greater claim to foreseeing the Crash than Dean Baker. In a widely read paper[2], the first of several, published in August 2002 and three years before the foresight of the media's current darling Nouriel Roubini, Baker detailed the dimensions of the US housing bubble and explained how its collapse would, if corrective policies were not undertaken, sink the economy. Alas, Baker and the others were ignored. Perhaps next time it will be different.

Edward Fullbrook
28 June, 2009

[2] Dean Baker, "The Run-Up in Home Prices: Is It Real or Is It Another Bubble?" http://www.cepr.net/index.php/publications/reports/the-run-up-in-home-prices-is-it-real-or-is-it-another-bubble/

Part 1: Why it happened

High finance — a game of risk:

Subprimes, ninja loans, derivatives and other financial fantasies*

Frédéric Lordon [Centre National de la Recherche Scientifique, France]

Two centuries after Hegel deplored the chronic failure of states to learn the lessons of history, financial capital seems to be caught in a similar loop, condemned to repeat the same errors, trapped in a recurring crisis. The instruments involved may be new but the current crisis on the credit markets has enormous potential for disaster, and offers another reason to re-examine the “benefits” of capital market liberalisation.

There is something of a religious cult about finance. It sees itself as reality and insists that businesses justify themselves according to the standards of financial reporting, by their quarterly results and longer-term performances. Yet it remains stupidly ignorant of what its own recent history teaches

.

Financial liberalisation has a mixed record. Since it began, there has rarely been more than three years without a serious incident, usually of historic significance. After the 1987 stock markets crash (Black Monday) came the junk bonds scandal and the Savings and Loans crisis, both in 1990, and the 1994 US bonds crash. A financial crisis started in the Far East in 1997 (Thailand, Korea, Hong Kong), before spreading in 1998 to Russia and Brazil. After 2001 the internet bubble burst.

Globalisation, according to a devotee, Pierre-Antoine Delhommais, is “a blessing, but an erratic one” (1). He is astonished by its ability to bounce back, stronger than ever, from potentially fatal disasters. Of course he overlooks the fact that every time the financial markets go wild, ordinary workers have to pick up the tab. The collapse of the markets hits the banks, then has a knock-on effect on credit, investment, growth and employment. Maybe he would like to see his own newspaper taken over by a hard-nosed investment fund. First-hand experience of downsizing might make him more sensitive to the consequences of the financial world’s practices. Maybe the knocks he suffered from globalisation’s erratic progress might outweigh its blessings.

The current {2007} crisis in the US credit market is an ideal opportunity to examine the fatal consequences of unregulated speculation. We can observe distinct stages leading from unfettered speculation to catastrophic collapse and central bank intervention.

Ponzi market tendencies

The best account of the blindness to disaster that characterises the interlinked finance markets was given by Hyman Minsky (2). He examined the activities of Charles Ponzi, a speculator during the 1920s, who separated suckers from their savings by promising incredible returns. Ponzi had no assets and rewarded his initial investors not with the dividends that were never there, but with the capital paid in by subsequent victims. The sustainability of the edifice depended on sustaining the flow of new participants. Apart from this fraudulent element, all bubbles that depend upon a constant inflow of liquidity to sustain a rising market and the illusion that everybody is a winner use a similar mechanism. The trick is

to keep recruiting new investors; and once the initiates have signed up, more ordinary, and less astute, punters are enlisted in greater and greater numbers.

For the US property market to keep growing (ideally for ever), more households have to be press-ganged into mortgages. The appeal of the US property dream made it easy to enlist them, particularly since households damaged by the bursting of the internet bubble were looking for fresh investments. But the reservoir of healthy borrowers was quickly exhausted and brokers began to look further afield for recruits to sustain the market. Problematic borrowers were pronounced fit. House prices exploded. Borrowers and brokers agreed that in the event of default the property could be sold, yielding a profit for borrowers and commission for brokers. They had faith in the indefinite expansion of the market: everyone was fit to borrow. The floodgates of credit burst open, feeding a speculative rise that seemed to justify the process. The result was subprime mortgages: loans to aspiring owners with no credit record or creditworthiness, typified by “ninja” loans (no income, no job or asset).

Inadequate risk evaluation

Everyone assumes that the financial industry has the reserves and expertise to handle risks. It certainly isn’t short of ingenuity. It has a secret weapon: derivatives. The problem with any credit, particularly a risky one, is that it stays on the lender’s books until it ends well or badly. But in the early 1990s banks realised that they could merge different credits into a line of negotiable bonds. The major advantage of this process, known as securitisation, lay in the fact that these securities could be sold in bundles to enthusiastic (institutional) investors, and risky loans could be wiped off the balance sheets of the issuing banks.

But why were investors so keen to buy something that banks were desperate to get rid of? Partly because they acquired them in smaller quantities; but mainly because the bonds were negotiable and could be sold on. The line of securities derived from the original credits was sliced up into tranches of equal risk. According to their profile and aversion to risk, individual institutional investors could buy their tranche of choice, safe in the knowledge that there would always be some institution (like hedge funds) prepared to take on the most risk-laden, and most profitable, tranche. Assuming everything went according to plan.

Obviously all the rights (financial flows) and risks (of default) attached to the original credits were transferred to these new residential mortgage-backed securities (RMBS), dispersed among many constantly changing bearers to spread the risk globally. The originating bank was no longer left to face the consequences of default on its own; instead, the risk was fragmented among many institutions, each responsible for only a minimal part, just a fragment of its portfolio.

Securitisation had apparently solved the problem of high-risk credit. The process was taken a stage further with the development of a special instrument to dispose of the most unappetising tranches of the RMBSs. Collateralised debt obligations (CDO) are a new form of negotiable security, derived from securities, whose issue redistributes the relevant fraction of the RMBS portfolio into different tranches. The senior, investment grade, tranche shelters its bearers from the first 20-30% of defaults on the original mortgage loans. There is an intermediate, mezzanine, tranche and, at the bottom, an equity tranche that takes the first hit from any default. This tranche is known in the markets as toxic waste: appropriate for

vulnerable CDO products derived from the most risky tranche of RMBSs, which are drawn from the portfolio of original credit. While the housing market soared and households kept up their payments, there was always a taker.

Hedge funds, with their ability to raise money at fairly low rates, have invested in high-risk securities, convinced that they can resell freely in a liquid market. The enormous profit margins turned toxic waste into gold. But the profits concealed objective risks that everybody ignored for fear of killing the goose that laid the golden egg. Meanwhile the mortgage brokers kept adding new recruits.

Structural vulnerability and failure

The illusion that securitisation had dispersed risk to the point of extinction provoked rash behaviour. Having managed to lay off their riskiest loans, mortgage lenders believed they could do anything. At the other end of the chain, the liquidity of the derivatives market persuaded hedge funds to pick the juiciest, but most rotten, CDOs. The dilution of risk encouraged the uncontrolled growth of its overall volume. The situation drifted into the critical zone.

By now, the structural fragility of the edifice had made it vulnerable to environmental changes that would normally seem insignificant. Individual quarter-point rises in the US Federal Reserve's interest rate might seem insignificant; but in August The New York Times reported how one woman had seen her mortgage rate rise from 6.3% in 2005 to 11.25%, and her monthly repayments from $414 to $691, more than she could afford to pay (3). She was one of the 14% of subprime borrowers who defaulted in the first quarter of 2007.

Central bank interest rate rises, however modest, have a twin effect. With new buyers excluded from the housing market, prices fall. Those already on the property ladder face unsustainable repayments; if they realise their asset, they lose financially and increase the bearish pressure on everybody.

In financial crises, there is always a specialised institution whose collapse signals a general turnaround. This time, two failures at the opposite ends of the chain brought the markets down to earth. The US investment bank Bear Stearns was forced to shut down two of its dynamic (perhaps too dynamic) funds after they binged on CDOs.

More alarmingly, since it is not particularly involved in the subprime sector, at the beginning of August the lender American Home Mortgage had to seek Chapter 11 protection from bankruptcy (4).

Catastrophic reassessment of risk

There began to be a whiff of panic. The toxic waste bonds already stank and there was a growing suspicion that even top-level investment grade CDO bonds could not be trusted. How could the industry have committed such monumental errors of judgment? The complexity of evaluating derivative products had something to do with it; credit rating agencies had been assessing CDO and RMBS tranches by the hundred. But there was more to it than honest workers struggling under the weight of the task. The agencies were raking in

money because financial institutions were madly issuing securities for assessment – in 2006, the rating agency Moody's derived 40% of its income from evaluating structured products. There was an obvious incentive to approve products in order to encourage new business.

The rating agencies were supposed to curb the worst excesses of the market; instead they allowed themselves to be infected by it. It is difficult, so close to and dependent upon the financial industry, to warn it, especially with everybody filling their pockets. The agencies, procyclical when they should have been countercyclical, encouraged the bubble, only to make panic revisions as soon as the turnaround kicked in, thus helping precipitate a collapse.

The crisis is probably only beginning. The US home mortgage industry has used attractive teaser rates to lure more borrowers towards the precipice. On a 2/28 mortgage, borrowers repay at a lower interest for the first two years, then revert to the damaging full rate for the remaining 28. We have yet to see the full impact of this on people who took out mortgages at the peak of the property bubble, in 2005 and 2006. But, as with the derivative-stuffed hedge funds, there are bound to be fireworks.

Finance is global; likewise its accompanying idiocies. With hedge funds across the world being tempted by derivative securitisation, the delirium gripping the US mortgage market was unlikely to remain confined to one country. Germany's retail banks, long derided as unimaginative and boring, decided to modernise and to become more active in the markets around 2000. After the Russian financial crisis of 1998 and the internet crash of 2001, over-exposure to the sub prime market has brought the bank IKB to the brink of collapse.

Lateral contagion

Global markets are vulnerable. Derivative products can maintain their delicate balance as long as nobody calls them out – as long as everybody pretends to believe the market is still liquid. But it takes just one institution to try to bale out by selling its CDOs for buyers to disappear. Once liquidity evaporates, the formal negotiability of the bonds becomes meaningless and their value plummets.

In August the French bank BNP-Paribas announced the suspension of three 'dynamic' funds: "The complete evaporation of liquidity in certain market segments of the US securitisation market has made it impossible to value certain assets fairly regardless of their quality or credit rating" (5). Yet only a week previously Baudoin Prot, the bank's CEO, had guaranteed the liquidity of the three funds.

As risky products collapsed and supposedly safe ones wobbled, the contagion spread to other, unrelated, market sectors that had participated in the orgy of lending, specifically the private equity sector.

These investment funds have been the stars of the finance industry over the last few years. They buy up promising companies whole, withdraw them from the stock market, restructure them and sell them on at a huge profit after a few years. They invest little of their own capital, relying instead upon debt, which they repay by milking the companies they purchase. The profits are so staggering that banks, convinced they can't lose, have fallen over themselves in the race to finance these operations. The terms offered include covenant-

light loans, exempt from all the limits on basic financial ratios normally imposed upon borrowers – “whatever you do, we’re behind you”.

Then there are PIK (payment in kind) and IOU loans, where the interest and principal are not paid in cash, but added to the original debt. As a result, private equity funds have stacked up astronomical levels of debt. But problems can arise when illiquid assets are sold, not as blocks of shares but as entire companies. All it could take is a single problem – for resale to be impossible, delayed or at a loss – for the entire private equity sector to be compromised.

Recent fund-raising operations have struggled because the banks, hitherto relaxed and complicit, have suddenly got cold feet. It is typical of financial crises that the sudden discovery of risks in one sector should raise anxieties in others. Just as Mexico’s difficulties in 1994 generated doubts in Thailand — hardly a next-door neighbour — because both were emerging markets, so anxieties about the housing market have spread to the private equity market, although they have nothing in common except dangerous excesses.

Overexposed banks

The fact that the banks managed on the whole to offload their portfolios of property credits through securitisation didn’t protect them from trouble. By letting their funds fill up with derivative products, they created a new exposure to mortgage risk. And they came under threat from lateral contagion, particularly through private equity, to which they were directly exposed.

The banking regulations require every bank to maintain a solvency ratio between its capital and its liabilities. If actual or even potential losses loom, something likely now that the credit rating agencies have woken up and started to revise all their evaluations downwards, the banks must make corresponding provision in their accounts; to maintain their ratios they must reduce the denominator (credits granted) in proportion to the contraction of the numerator (the bank’s own capital, reduced by the provisions they have made). As always, it is those involved in the real economy, businesses and workers far removed from the evils of speculation, who face credit restrictions they have done nothing to deserve.

Nanny to the rescue

As long as the markets kept rising, the financial masters of the universe despised the nanny state and said so. Now they want and need her comfort. A central bank, which rescues the financiers by lowering interest rates to restore general liquidity, is not a state itself; but it is public institution, outside the market, rejected while profits flood in, appealed to when things turn bad.

Jim Cramer is a no-holds-barred financial pundit on the US business news channel CNBC. On 3 August he was seen screaming at Ben Bernanke, the chairman of the Federal Reserve: “Cut! Cut!” (6). Infuriated by the Fed’s delay, Cramer claimed that Bernanke understood nothing because he was an academic (he is a former economics professor). Other fund managers interviewed on the same channel were more soberly dressed and less hysterical. But they all agreed: the readiness of Alan Greenspan, Bernanke’s predecessor, to

cut rates rapidly was the mark of a practical man, unencumbered by academic preconceptions, who could read a situation and recognise that it was time to make concessions.

Saner analysts are beginning to recognise that this long monetary tolerance of the financial world's excesses must take some of the blame for the risks now threatening us. Until 17 August, when he did cut the Fed's primary discount rate, Bernanke seemed happy to let the most foolhardy operators take the consequences of their own stupidity. But that was unsustainable once failures spread to constitute a systemic risk. That is the worst thing about the financial system. It is always encouraged to swim further and further out until the authorities can no longer ignore its misfortunes and have to dive in to the rescue. It holds the world hostage.

Notes

(*) This article originally appeared in *Le Monde diplomatique*,

(1) Pierre-Antoine Delhommais, "Une mondialisation heureuse mais heurtée", *Le Monde*, Paris, 9 August 2007.

(2) Hyman P Minsky, *Stabilising an Unstable Economy* (Yale University Press, 1986).

(3) Gretchen Morgenson, "More Home Foreclosures Loom as Owners Face Mortgage Maze", *The New York Times*, 6 August 2007.

(4) Chapter 11 keeps businesses afloat by offering them protection from over-impatient creditors (a moratorium on company debts). It releases employers from their commitments and allows them to renegotiate wage agreements.

(5) Press release; see http://www.bnpparibas.com/en/news/p ...

(6) That is cut interest rates. For the clip see http://www.youtube.com/watch?v=GKZg.; and for a transcript, http://latimesblogs.latimes.com/ la...

Translated by Donald Hounam

The Global Economy Bubble Equilibrium

Ian Fletcher [USA]

Many of the greatest deficiencies of neoclassical economics follow, logically enough, from its central concept: equilibrium. Attacks on its single-equilibrium assumptions in favor of multiple equilibria, most notably in New Trade Theory, are one response to this. Another is the growing realization[1] that, in Keynes's words, "markets can remain irrational longer than you can remain solvent," an obvious practical fact that has resisted embodiment in theory. Neoclassical accounts of market irrationality tend to treat this irrationality as mere noise, whose systematic mechanisms are at best artifacts of behavioral psychology. But in truth, the mechanisms by which markets can remain out of equilibrium are as profound as those by which they find equilibrium, and the present global economy is a case in point.

Intelligent commentators have been crying "unsustainable" about the value of the US dollar, and its relationship to the rest of the world economy, for nearly ten years now, bringing two facts into collision:

1. The underlying assumptions of these commentators are reasonable, well-accepted ideas about the supply and demand for currencies.

2. The dollar's value and relationship has, in fact, observably been sustained.

Despite the dollar's recent decline, which may have become decisive by the time the reader sees these words, it has still remained above the value that neoclassical assumptions would predict for a very long time. And unfortunately, most rejections of the first assumption above have been implausible.

Some such rejections have been rhetorically wild, but analytically insubstantial, assertions about the New Economy. For example, they have taken admittedly-impressive technologies like the Internet as economic changes in their own right, failing to explain how they abolish technology-independent economic facts like the propensity of competitive markets to deliver zero profit. (Sometimes, they have not even established the relevance of such technologies to foreign exchange at all.)

Some such rejections have been conceptual sleight-of-hand, like the assertion that trade deficits simply don't matter anymore, because national borders are supposedly arbitrary. But even if one concedes this (questionable) premise, it still follows that, under accepted economic assumptions, currencies assigned to the economic activity within arbitrary lines on the map will observe certain relationships with other similarly-defined currencies.

Some such rejections have been sober but still implausible assertions about how the US and world economies have changed, like Allan Greenspan's attempts to justify everything with claims of productivity growth in the US economy. Among other things, this would not explain the current situation, even if it were true.

[1] Something that was obviously realized a long time ago, but seems to have been forgotten and re-learned in decades-long cycles.

The rational response is neither to embrace any of the above pseudo-solutions, nor to ignore the fact that we are confronting a stark contradiction between standard economic assumptions and observed facts. Instead, the key lies in recognizing that while the US and world economies have indeed changed, they have *not* changed into some Alice in Wonderland world in which no rules apply. Instead, they have changed into a world in which the old rules, for clearly-cognizable reasons, have been relaxed or changed, creating new rules – which can potentially be exploited by appropriate trading strategies.

These new rules are defined by something we can call the Global Economy Dollar Mechanism, or GEDM for short. The rational way to construct a model of the new world economy, and the GEDM according to which currencies function inside it, is to begin with the conventional model of the old world economy, identify its key assumptions, and identify which of these no longer hold and why.

Since the observed condition we face is a speculative boom in financial assets, let us begin with the conventional model of how this happens: the money supply expands. Now in the old economy, the natural result of this is inflation, for the classically-stated reason of "too much money chasing too few goods." And yet we observe (or observed until very recently, and mainly due to cost-push problems like Peak Oil) low inflation. So what has changed?

The main thing is this:

The US dollar is no longer just an American currency. It has become WorldMoney.

So the first key assumption of conventional economic models we must relax is the assumed tight connection between national economies and national currencies. This is true both in the case of the US, because the dollar is being used so much elsewhere in the world, and in the case of foreign countries, because their economies are now using dollars, rather than their own currencies, so much. This has two main consequences.

First, the quantity of dollars in circulation is backed not just by the goods production of the US economy, but by the production of all goods bought and sold for dollars anywhere in the world. As a result, the constraint of "too few goods" has been loosened considerably, and the US money supply can expand considerably more than it otherwise could without simply inflating away. (This constraint on dollar inflation in goods prices is buttressed by the constraint on inflation in *any* currency created by the global surge in cheap manufactured goods from China and elsewhere.)

Second, growth in the sophistication, international tradability, and penetration into the non-financial economy of financial instruments has meant that the dollar is not just backed by production of goods, but by production of financial instruments and investable assets (like real estate) as well. So the conventional assumption, that exchange rates are ultimately dominated by trade in goods, with financial factors like interest rates exercising a subordinate influence, can now be reversed. The tail can now wag the dog.

The key is not mainly the increased technical intricacy of these instruments as such, though this does make them more potent. It is their increased penetration into the US non-financial economy. For example, 30 years ago, the wealth embodied in a typical suburban house, or a college education, was not typically converted into financial instruments that could be traded around the world. The same goes for corporate receivables, securitized debt, and many other things. The net result has been that a radically increased percentage of the

wealth in the American economy, in all forms, has been made a tradable part of the financial system.

Furthermore, at the same time as this wealth has been "put on wheels" by financialization, the barriers to pushing claims on that wealth, i.e. financial instruments, across national borders have been coming down – almost continually since 1979. As a result, the quantity of wealth that can flow, the range of places it can flow, and the ease with which it can do so have radically increased. And this is all *before* factoring in the effects of the collapse of communism in 1989.

The result has been a vast increase in the value of financial instruments (debt and various forms of asset ownership) that Americans have available for "export" in exchange for their imports. Because these imports are just the obverse of foreign nations' export-led growth, this has coincided with a boom in the amount of money foreigners have to buy these "exports" with. The final result: the large-scale substitution of financial exports for goods exports by the US that we have empirically observed.

This sounds perverse, upon conventional economic assumptions. But looked at one way, it is well-nigh inevitable, indeed an obvious consequence of taking financialization to its logical conclusion. In principle, the sum total of 300 years of accumulated American wealth has now been made tradable, and the sloshing about of this sum, in the global market for purchasable wealth, dwarfs the mere annual *increment* to this sum constituted by present production. So of course financial exports dominate.

It used to be the case that present production dominated international trade, because of constraints on converting accumulated wealth into financial instruments, and constraints on selling these instruments to foreigners (or constraints in their own countries on their buying them from us, ranging from sheer lack of money to government regulations.) So we came to think of this as the normal state of affairs, especially because it just seems somehow natural that finance should be the tail and the "real" economy the dog. But in fact, it is quite arguably more natural for *finance* to dominate, because finance embraces all accumulated wealth than can be converted to a tradable asset, while the "real" economy embraces only present incremental additions to that wealth.

The oft-noticed, but to the author's knowledge untheorized, consequence of this has been that the financial system has been largely de-coupled from the health and functioning of the US current-production economy. Case in point: in the first quarter of 2007, US economic growth slowed to 1.3%, and yet the Dow rose to an intraday all-time high of 13,284, closing at 13,264 on May 4th. The US current-production economy continues to exert, of course, a heavy influence upon the US financial system, but it is the US financial economy, consisting of America's accumulated wealth, that dominates.

Importantly, the health of the financial economy can deviate substantially from the health of the production economy[2]. After Michael Porter, we can call an economy in which the asset economy is dominant a "wealth economy,"[3] though the radicalization of this

[2] There is also no necessary reason to suppose (especially if we abandon naïve assumptions of perfect markets, but quite possibly even with such assumptions) that those policies which will be best for the one economy, will be best for the other.

[3] Although Porter uses the term in *The Competitive Advantage of Nations* as a pejorative, implying an economy in which present wealth-creation is sabotaged by an economy optimized to favor the profitable

phenomenon appears to have outstripped what was observable when he coined this phrase in 1990.

It follows from all this that anyone who wishes to speculate on the value of the dollar needs to identify the true contemporary uses of the dollar, and base their analysis on that instead. It must be understood, above all, that the US's titanic trade deficit is *not* necessarily a peculiar aberration from the normal, equilibrium-reverting, course of world trade. A trade deficit in mere *goods*, when the "trade" in assets is just as big or bigger, is nothing illogical whatsoever. There are good reasons for what is happening, and although it may not be able to last forever (no economic era does), it may not be on the verge of collapse that pessimistic commentators imagine. It is simply *not* necessarily aberrational.

Even if it does represent a deviation from equilibrium, it is entirely possible that it may take a long time for that deviation to be rectified, just as the water level in two connected pools can take an arbitrarily long time to equilibrate, if the pipe connecting them is of small enough diameter, relative to the volume of water in the pools. And if the hypothetical equilibrium changes during this time faster than the "water" can flow to equilibrate to it, the system can conceivably remain *permanently* out of equilibrium.

The Role of Speculative Booms in the GEDM

The key to understanding the constraining rules of the GEDM lies in understanding why the GEDM requires speculative booms to survive. The above-described facts, alone, would not be sufficient to produce the speculative boom we have been living with, intermittently, since the GEDM crystallized[4] in the early 90's. But what needs to be added to the above model is obvious: radical expansion of liquidity. The facts already described have not themselves done this; they have merely made it *easier* for it to happen. However, they have made it so easy that, once the political dimensions are brought into the picture, they have created well-nigh irresistible temptations for liquidity to expand radically.

The first key fact, is that the proliferation of sophisticated financial instruments has simply made it a lot harder for central banks to rein in liquidity. The second, is that the Fed has been expanding the money supply rapidly, and getting away from it. The third, is that because the US runs a huge trade deficit, there $800 billion doesn't get spent buying goods, but on buying financial assets. The US trade deficit is like a giant pump inside the world economy, converting wealth that would otherwise be "flared off" into immediate consumption into financial assets. This endlessly-piling-up wealth, rendered ultra-liquid by sophisticated modern finance, must go *somewhere*. It cannot go into goods prices, so there is nowhere else for it to go, than into the price of debt (including sophisticated repackagings of debt) and assets.

This dynamic is accelerated by a number of factors. First, the availability of easy credit to Americans increases their spending levels. (Selling the bubble-inflated equity in one's house to a foreign purchaser by means of a second mortgage is the classic example.)

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exploitation of accumulated wealth, no value judgment is intended by this essay, though hopefully the formulation here may bring some clarity to his somewhat-vague concept.)

[4] The author takes no position, concerning whether the GEDM was deliberately designed, or came about by historical accident. The literature is full of accusations that Clinton Treasury Secretary Robert Rubin "engineered" it, but this is not an essay on conspiracy theory.

And the more Americans spend, the more they import, forcing foreigners to buy more American assets or debt. Then there is the wealth effect, in which an increase in the nominal wealth of American consumers, due to inflated prices for stocks, real estate, and other assets, makes them more willing to spend money. Then there is the fact that bubbles don't operate against a static class of base assets, and bubble-induced rises in the price of an asset class will tend to encourage production of those assets. The obvious example is real estate. Demand for real estate, as a speculative asset, increases the construction of houses. This creates a spill-over into the non-financial economy, heating it up, and producing more spending, more imports, *et cetera*.

Will the Global Economy Dollar Mechanism endure?

The key question, if the above analysis is true, is obviously, "Why *is* the dollar WorldMoney, and what could make it cease to be?" There are two answers:

The most obvious reason is that there are perfectly-good theoretical reasons[5] to expect that an established vehicle currency, once established, will remain so – even if the establishing conditions, like dominance of global GNP or trade, cease to be true. The British pound remained the international reserve currency of choice for decades after Britain had shrunk to a relatively small portion of world GNP.

The second reason is political. There appear to be[6] no *a priori* political reasons for the key foreign economic players to prefer that the dollar be WorldMoney, given their stated postures of rivalry with the US and their apparent belief that the dollar's status increases America's undesired power. There exist, instead, reasons of status quo lock-in which make it advantageous, at least for the time being, for them to continue to support the dollar's status.

For a start, if they ceased to be willing to recycle America's trade deficit into dollar-denominated assets, their trade surpluses against the US would collapse. Conversely, if cheap foreign imports ceased to be readily available to the US, this would trigger a surge of inflation, which would push up interest rates and tip the heavily-indebted US economy into recession.

But why can't China just switch to satisfying internal demand? After all, would it not be more advantageous to the Chinese to get the benefits of both economic growth *and* increased consumption, rather than merely building up their productive capacity satisfying foreign demand? The reason is that the Chinese economy has risen on production of goods suitable for consumption by rich First-World consumers. Despite burgeoning demand by the population of the developed cities along China's coast, China simply does not have a population base that can absorb China's production of fax machines. This mismatched demand base is the price China pays for having embraced an export-led growth strategy, and the ultimate short-term reason for Chinese dependence upon the US.

[5] See Paul Krugman's 1980 article *Vehicle Currencies and the Structure of International Exchange*.

[6] I use the phrase "appear to be" because there are all sorts of rumors about, concerning deals done with various foreign players, like agreeing to defend Saudi Arabia in exchange for OPEC pricing oil in dollars. But this is not an article on conspiracy theory.

Leaving politics aside, and as a purely economic question, there is no absolute reason why this is an unhealthy[7] or unreasonable process, if we assume – as conventional economic assumptions would argue – that the process will not go on beyond the ability of the US economy to assume foreign debt and sell off existing assets to foreigners. If we make this happy assumption, then it follows that the market price of American debt is a rational indicator of America's ability to assume debt, and the market price of America's existing assets likewise. These market prices will not only provide us early warning, of when America may have gone too far, but will tend to naturally choke off the process at that time. The key question, therefore, is whether this happy assumption is, in fact, correct here, or whether the smoothly-adjusting dynamic that they assert is interfered with by anything. Here the plot thickens, as a number of things may do just this.

Most obviously, there we are dealing with asset bubbles, the popping of which can derail the whole process. Asset bubbles are not, of course, exclusive to the GEDM. But they are uniquely destructive under such circumstances, because the entire world economy has now become dependent upon the dollar, as the dollar is now WorldMoney and foreign nations are dependent upon its reliably continuing to fulfill this role.

Under the GEDM, asset bubbles are an almost-irresistible temptation, for a number of reasons. Most obviously: although asset-bubbles are, while they last, self-sustaining, in that the expectation of further price rises props up prices at their present (ultimately unsustainable) level, they almost always require *some* triggering device, which detaches market price expectations from initial moderation. The classic case is unrigorously-formulated but charismatic arguments, like "the Internet changes everything," which enabled the dot-com boom. But arguments are not the only thing that can have this effect: all that is needed, is that there be some factor impinging, which is outside conventional market rationality.

In this case, we have two (which may be arbitrarily reduced to one, analytically, as they are related):

1. The fact that the world economic system as a whole is dependent on the smooth functioning of the dollar machine.

2. The political expressions of the knowledge of the above fact.

In other words, the recycling of America's trade deficit into American debt and asset sales is artificially stimulated by the fact that this activity is not only taking place for the conventional economic reason of paying a positive return to the investors involved. It is taking place in order to sustain the entire global economic *system*. One way to look at it is view the (mediocre) direct returns to the investors as incremented by profits made by the system elsewhere. This relationship is formal, in the case of players like the central banks of Tokyo and Beijing, which accept the mediocre (indeed, negative over the last 5 years, given the decline of the dollar) returns they get on US Treasury debt as the fee they pay to stop the dollar from declining even more, and choking off their exports to the US.

[7] It is only unhealthy for Americans to be financing present consumption by selling off existing assets and assuming debts if we take the ethical position (which is outside economics) that this is an irrational trade-off between present and future consumption. Ian Fletcher explored the economic analysis that follows from this assertion in this paper: "A Neoclassical Hole in Neoclassical Free Trade" (http://www.paecon.net/PAEReview/issue26/Fletcher26.htm)

The GEDM thus has a firm basis for generating irrational asset prices. Another way of looking at it is to say that because holders of dollars *can't* spend them on anything other than dollar-denominated investments, they keep buying them even when they would otherwise be unattractive. We could even say that the US dollar enjoys monopoly pricing power for itself.

The temptation for the key players to accept asset bubbles in dollar-denominated assets is irresistible, because the more each bubble expands, the larger is the nominal value of dollar-denominated assets (which pleases the holders of those assets abroad) and the larger the absolute size of the pool of dollars that Americans have to sell, which pleases Americans. The asset bubble, by generating nominal returns while it lasts, compensates investors for the problem of buying assets for artificial reasons not justified by their fundamental returns. In fact, a bubble is so perfect a solution to the problem of making the GEDM run smoothly, that there exists a well-night irresistible pressure to find new bubbles.

One way of looking at this is to see the endless blowing-up of bubbles as a way to replace the actual returns that are missing from the system, i.e. the gap caused by the aforementioned biases that cause investors to accept returns on dollar-denominated assets that are artificially low. The whole system *does* balance – does maintain a sufficient equilibrium to sustain the system – despite its underlying inadequacies, and bubbles are key to making it do so.

Based on the above insight, we may conclude that if Allan Greenspan may be assumed to understand (whatever his public pronouncements) the existence and functioning of the GEDM, then this would explain his decision to allow the systematic inflation of several bubbles in succession. (Whether he agrees with the model sketched here, of the mechanism of the GEDM, is an open question. That he knows that something like it is in effect, is clear from his defenses of "dollar hegemony" to the US Congress. Furthermore, any player in his position who understood the GEDM would have an interest in not talking about it.) This would also explain why Greenspan was so explicit (indeed, disarmingly honest, once one grasps the game) about the need to avoid pricking bubbles, and avoid preventing them, preferring to defend the need to avoid a hard crash when they pop.

The natural question then is, will the US economy run out of bubbles to inflate? Given that the economy, and the number of (meaningfully different) tradable asset classes, is by definition finite at any given moment, and a developed economy like the US cannot be expected to expand fast enough to actually keep pace with a bubble, it would seem that at some point it must. Unless, of course, either or both of two possibilities hold:

1. The possibility that bubbles can be recycled, and at some point previous bubbles can be re-inflated. For example, the old tech bubble, based mainly on the Internet, obviously cannot be re-inflated, but a new tech bubble, based on the long-awaited breakthrough of nanotechnology, say, or pattern recognition, into mass commercial viability, could emerge.

2. The possibility that the bubble need not be in American assets as such, but in any assets, anywhere in the world, that are denominated in dollars. If this is true, then the "playing field" for possible bubbles is four times as large, and insulated from the obvious problems of the US economy.

The Global Economy Dollar Mechanism's Effect on Non-Dollar Currencies

The GEDM explains a number of other things, too. Like why the British pound has been so strong, despite Britain's persistent trade deficit and interest rates not greatly out-of-line with other economies. The strength of the British pound is perfectly easy to understand, if one remembers that pounds are demanded, by definition, not only for British *goods*, but for pound-denominated debt and pound-denominated existing assets. And Britain experiences exceptionally-strong demand for both, due to:

1. Britain's high level of personal and corporate indebtedness, which creates a vast pool of pound-denominated debt available for foreign investors to purchase. But foreigners need to buy pounds in order to purchase this debt.

2. Britain's political decision to make her existing assets, from London real estate to shares in British-owned companies, easy for foreigners to buy. There are far fewer overt and covert barriers to purchasing either than in the case of, say, France or Germany, so demand for British assets is artificially stimulated.

It follows from the above analysis that many common criticisms of current exchange rates are simply laughable. For example, the obsessive political attention given to the charge that China manipulates its currency, which attention is logically predicated upon the assumption that the "free market" exchange rate for its currency would be different, higher, and would (at least help to) redress the US trade deficit with China. Upon GEDM assumptions, China doesn't *need* to deliberately manipulate its currency (beyond the demands, which its government admits, probably honestly, of stability) to obtain the giant surplus it enjoys against the US. The GEDM structurally rigs the game that way, as long as it lasts[8].

[8] It follows that bickering over currency manipulation is quite possibly understood to be empty, by the key players on both sides, and is allowed to go on purely to soak up populist dissatisfaction. The great advantage of allowing manipulation to be the focus of dissent is of course that it by definition frames the solution in terms of free markets.

The Housing Bubble and the Financial Crisis

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The central element in the current financial crisis is the housing bubble. The irrational exuberance surrounding this bubble created an environment that was ripe for the cowboy financing that got Wall Street and the country into so much trouble. Of course the cowboy financing fed into the bubble, allowing it to grow to proportions that would not have been possible with a well-regulated financial system.

This essay first describes the circumstances under which the bubble began to grow. It then discusses how financial innovations and the lack of a proper regulator structure allowed the bubble to grow to ever more dangerous levels and eventually to crash in a way that has placed unprecedented strain on the country's financial system. The third part outlines key principles for reform of the financial system.

The Origins of the Housing Bubble

The housing bubble in the United States grew up alongside the stock bubble in the mid-90s. The logic of the growth of the bubble is very simple. People who had increased their wealth substantially with the extraordinary run-up of stock prices were spending based on this increased wealth. This led to the consumption boom of the late 90s, with the savings rate out of disposable income falling from close to 5.0 percent in the middle of the decade to just over 2 percent by 2000.

The stock wealth induced consumption boom also led people to buy bigger and/or better homes, since they sought to spend some of their new stock wealth on housing. This increase in demand had the effect of triggering a housing bubble because in the short-run the supply of housing is relatively fixed. Therefore an increase in demand leads first to an increase in price. As prices began to rise in the most affected areas, prices increases got incorporated into expectations. The expectation that prices would continue to rise led homebuyers to pay far more for homes than they would have otherwise, making the expectations self-fulfilling.

Government data show that inflation adjusted house prices nationwide were on average essentially unchanged from 1953 to 1995.[1] Robert Shiller constructed a data series going back to 1895, which showed that real house prices had been essentially unchanged for 100 years prior to 1995.[2] By 2002, house prices had risen by nearly 30 percent after adjusting for inflation. Given the long history of stable house prices shown in the government data, and the even longer history in the data series constructed by Shiller, it should have been evident that house prices were being driven by a speculative bubble rather than the fundamentals of the housing market.

[1] Baker, D. 2002. "The Run-Up in House Prices: Is It Real or Is it Another Bubble." Washington, D.C.: Center for Economic and Policy Research [http://www.cepr.net/index.php/publications/reports/the-run-up-in-home-prices-is-it-real-or-is-it-another-bubble/].

[2] Shiller, R. 2006. *Irrational Exuberance* (2nd edition). Princeton, NJ: Princeton University Press.

The fact that rents had risen by less than 10 percent in real terms should have provided more evidence to support the view that the country was experiencing a housing bubble. If there were fundamental factors driving the run-up in house sale prices they should be having a comparable effect on rents. However, the increase in rents was far more modest and was trailing off already by 2002.

The Second Phase of the Housing Bubble

The run-up in prices in both the ownership and rental markets was having a substantial supply-side effect, as housing starts rose substantially from the mid-90s through the late 90s. By 2002, housing starts were almost 25 percent above the average rate over the three years immediately preceding the start of the bubble (1993-95). The increase in building showed up first as an over-supply of rental housing, with the vacancy rate rising to near record levels above 9.0 percent in 2002, compared to a rate of 7.5 percent in the mid-90s.[3]

If the course of the bubble in the United States had followed the same pattern as in Japan, the housing bubble would have collapsed along with the collapse of the stock bubble in the years 2000-2002. Instead, the collapse of the stock bubble helped to feed the housing bubble. The loss of faith in the stock market caused millions of people to turn to investments in housing as a safe alternative to the stock market.

In addition, the economy was very slow in recovering from the 2001 recession. It continued to shed jobs right through 2002 and into the summer of 2003. The weakness of the recovery led the Federal Reserve Board to continue to cut interest rates, eventually pushing the federal funds rate to 1.0 percent in the summer of 2003, a 50-year low. Mortgage interest rates followed the federal funds rate down. The average interest rate on 30-year fixed rate mortgages fell to 5.25 percent in the summer of 2003, also a 50-year low.

To further fuel the housing market, Federal Reserve Board Chairman Alan Greenspan suggested that homebuyers were wasting money by buying fixed rate mortgages instead of adjustable rate mortgages (ARMs). While this may have seemed like peculiar advice at a time when fixed rate mortgages were near 50-year lows, even at the low rates of 2003, homebuyers could still afford larger mortgages with the adjustable rates available at the time.

These extraordinarily low interest rates accelerated the run-up in house prices. From the fourth quarter of 2002 to the fourth quarter of 2006, real house prices rose by an additional 31.6 percent, an annual rate of 7.1 percent. This fueled even more construction, with housing starts eventually peaking at 2,070,000 in 2005, more than 50 percent above the rate in the pre-bubble years. The run-up in house prices also had the predictable effect on savings and consumption. Consumption boomed over this period with the savings rate falling to less than 1.0 percent in the years 2005-07.

Of course the bubble did begin in burst in 2007, as the building boom led to so much over-supply that prices could no longer be supported. The record vacancy rates switched from the rental side to ownership units in 2006. By the fourth quarter of 2006, the vacancy rate on ownership units was almost 50 percent above its prior peak. By the middle of 2007,

[3] These data are taken from the Census Bureau's quarterly releases on residential vacancies and homeownership. The release for the fourth quarter of 2007 is available at http://www.census.gov/hhes/www/housing/hvs/qtr407/q407press.pdf.

prices nationwide had peaked and began to head downward. This process accelerated through the fall of 2007 and into 2008.

Just as the bubble created dynamics that tended to be self-perpetuating, the dynamics of the crash are also self-perpetuating, albeit in the opposite direction. As prices decline, more homeowners face foreclosure. This increase is in part voluntary and in part involuntary. It can be involuntary, since there are cases where people who would like to keep their homes, who would borrow against equity if they could not meet their monthly mortgage payments. When falling house prices destroy equity, they eliminate this option.

The voluntary foreclosures take place when people realize that they owe more than the value of their home, and decide that paying off their mortgage is in effect a bad deal. In cases where a home is valued far lower than the amount of the outstanding mortgage, homeowners may be to able to effectively pocket hundreds of thousands of dollars by simply walking away from their mortgage.

Regardless of the cause, both sources of foreclosure effectively increase the supply of housing on the market. In the first quarter of 2008, foreclosures were running at a 2.8 million annual rate (RealtyTrac), which was nearly 60 percent of the rate of sales of existing homes in the quarter. In many of the hardest hit areas, the number of foreclosures actually exceeded existing home sales. In effect, by forcing more foreclosures, lower prices were leading to an increase in the supply of housing.

A similar dynamic took hold on the demand side. During the run-up of the bubble, lending standards grew ever more lax. As default rates began to soar in 2006 and 2007, banks began to tighten their standards and to require larger down payments. The most severe tightening took place in the markets with the most rapidly falling prices. With lenders in these markets requiring down payments of 20 percent or even 25 percent, many potential homebuyers were excluded from the market. These thresholds not only excluded first-time buyers, but even many existing homeowners would have difficulty making large down payments, since plunging house prices had destroyed much of their equity.

By the end of 2007, real house prices had fallen by more than 15 percent from peak.[4] House prices in many of the most over-valued markets, primarily along the two coasts, had fallen by more than 20 percent. Furthermore, the rate of price decline was accelerating, with prices in these cities falling at more than a 30 percent in annual rate at the beginning of 2008.[5] The rate of price decline in the Shiller indexes imply that real house prices will be down by more than 30 percent from their 2007 peaks by the end of 2008. This would mean a loss of more than $7 trillion in housing bubble wealth (approximately $100,000 per homeowner). The lost wealth is almost equal to 50 percent of GDP. There is no way that an economy can see a loss of wealth of this magnitude without experiencing very serious financial stress.

The Excesses of the Housing Bubble

[4] This is based on the Case-Shiller U.S. National Home Price Index, available at [http://www2.standardandpoors.com/portal/site/sp/en/us/page.article/0,0,0,0,1148433018483.html].

[5] This statement is based on a comparison of data from January, 2008 with data from October, 2007 in the Case-Shiller 20 City Indexes, available at [http://www2.standardandpoors.com/portal/site/sp/en/us/page.article/0,0,0,0,1145923002722.html].

As the house prices grew further out of line with fundamentals, the financial industry adopted more sophisticated financial innovations to support its growth. A key part of the story was the growth of non-standard mortgages. Until the boom began to take off in the mid-90s, the vast majority of mortgages had always been fixed rate mortgages. However, adjustable rate mortgages became a growing share of mortgages issued during the boom, peaking at close to 35 percent in 2004-06. Not only did these mortgages not provide the security of fixed rate mortgages, they were often issued with below market "teaser rates" that would reset to higher levels after two-years, even if interest rates did not rise.

These "2-28" mortgages were especially common in the subprime segment of the mortgage market. Subprime mortgages were loans issued to people with poor credit histories. Homebuyers who got subprime mortgages were typically people with intermittent employment records or who had defaulted on some loans in the past.[6] The interest rates on subprime loans were typically two to four percentage points higher than the interest rate available at the time on prime loans given to people with solid credit histories.

The subprime market exploded during this period, rising from less than 9 percent of the market in 2002 to 25 percent of the market by 2005. In addition to this explosion in subprime loans, there was also a boom in the intermediate "Alt-A" mortgage category. These were loans given to homebuyers who either had a mixed credit record (better than subprime, but not quite prime) or who provided incomplete documentation of income and assets.

The Alt-A loans were in many cases of more questionable quality than the subprime loans. Many (perhaps most) of these loans were for the purchase of investment properties.[7] Furthermore, the Alt-A loans were more likely to be issued with incomplete documentation, earning some the status of "liar loans." The Alt-A loans were even more likely to have very high loan to value ratios, with many buyers borrowing the full value of the purchase price, or in some cases even a few percentage points more than the purchase price. Also, many of the Alt-A mortgages issues in the years from 2005-2007 were interest only loans or option-ARMs, which required borrowers to just meet interest payments on their mortgages, at least until a reset date, which was most typically five years after the date of issuance.

The subprime and Alt-A categories together comprised more than 40 percent of the loans issued at the peak of the bubble. The explosion of loans in these higher risk categories should have been sufficient to signal regulators, as well as investors, that there was a serious problem in the housing market. Just to take the case of the subprime market; it is absurd to think that the number of credit worthy people in the subprime category had more than doubled from 2002 to 2004, even as the labor market remained weak and wages lagged behind inflation. The increase in subprime lending over these years, by itself, was an unmistakable warning sign of the problems in the housing market. Unfortunately, instead of taking this warning, political leaders and most experts on housing celebrated the record rates of homeownership.

[6] There were also many people with solid credit records who were improperly issued subprime mortgages during this period. There is a long history of discrimination in bank lending, with African Americans and Hispanics being charged higher interest rates or being denied access to credit altogether.

[7] There is no easy way of knowing what percentage of the Alt-A loans were used for investment properties because it was common for buyers to claim that they intended to live in the home even if this was not the case. Interest rates are generally lower for owner-occupied homes.

Wrong Incentives Everywhere

The surge in high-risk loans was made possible by the fact that there were misplaced incentives on all sides in the sale and financing of housing. The first area where misplaced incentives were evident is in the appraisal process. Appraisers typically operate as independent contractors. They get hired by the bank or mortgage issuer for an individual appraisal. In prior years, the banks would have valued an honest appraisal, since they wanted to be sure that the collateral in the house would cover the value of the loan.

However, during the housing bubble, in which mortgage issuers earned their money on issuing the mortgage, not holding it, mortgage issuers wanted to make sure that the appraisal would be high enough to justify the mortgage. This meant that they wanted high appraisals. This bias quickly got passed through to appraisers, since they realized that if they came in with appraisals that were too low to allow mortgages to be issued, they would not be hired again by the bank. This meant that appraisers had a strong incentive to adopt a high-side bias in their appraisals.[8]

An even more important set of misplaced incentives existed in the securitization process in the secondary market. This process was central since it was the existence of the secondary market that gave mortgage issuers incentive to approve mortgages where they knew that the borrower would be unable to meet the terms of the mortgage. The issuers generally faced little risk once the mortgage was sold into the secondary market, so their incentive was to issue as many mortgages as possible. They just had to ensure that the mortgages, on paper, were of sufficient quality to be sold in the secondary market. Since the issuers know very well the rules for qualifying mortgages for resale, they could and did make sure that their loans met these criteria.

The next step was the banks that bought and bundled the loans into mortgage banked securities (MBS). These banks also made their money on the fees associated with this process, not on holding the MBS themselves. This meant that the securitizers also had incentive to try to maximize volume with little regard for the actual quality of the loans that they were bundling or the underlying quality of the MBS that they were issuing.

Of course the ability of the banks to sell their MBS, which contained many loans of questionable quality, depended on their being able to secure good credit rating for their bonds. Here also perverse incentives played an important role. The bond rating agencies are paid by the banks who request the rating. In order to avoid losing customers to their competition, the credit rating agencies had a strong incentive to issue high ratings to the banks' securities.

This process was facilitated by the proliferation of new and more complex financial instruments. For example, the banks began to issue "collaterized debt obligations (CDOs)," which typically included mixes of mortgage backed securities along with other assets. The

[8] There is a very simple method for avoiding such perverse incentives. If the appraiser is picked by an independent board, as is common with non-residential real estate, then it eliminates the incentive to produce a biased appraisal.

CDOs would typically offer layered financing, with bonds of higher quality having first claim to payments.

Since these were new instruments, the credit rating agencies had little history on which to base their analysis. In the first years for which such instruments existed, default rates were very low, since rising house prices meant that the vast majority of mortgages would be paid. Remarkably, they do not seem to have allowed for the possibility that house prices could in decline when making their assessments of risk. As a result, the credit rating agencies often gave high investment ratings to CDOs that were largely filled with assets that were in turn backed up by high-risk mortgages.

In yet another twist, Citigroup and other major banks also created "structured investment vehicles (SIVs)" which were ostensibly independent companies, whose only assets were CDOs. The banks would then sell off shares in and/or bonds against these SIVs, keeping their liabilities off their balance sheets. This was yet another layer in a complex web of finance that concealed the risk that was building in the financial structure.

There was one other noteworthy twist to the wave of speculative finance that laid the basis for the current crisis. This period saw an enormous proliferation of credit default swaps (CDSs). CDSs are effectively insurance against bond defaults that were issued by the major banks. They provided security to lenders against the risk of default on assets of questionable quality. The spread of CDSs allowed many smaller firms or state and local governments to sell their bonds more easily, since their credit would be backed by the banks issuing CDSs on their bonds. CDSs were also issued against mortgage backed securities and various derivative instruments, which facilitated the sale of MBSs of questionable quality.

While CDSs just came into existence in the late 90s, their use exploded during the peak years of the housing bubble. The Bank of International Settlements estimated the total notional value of CDSs at more than $45 trillion in June of 2007.[9] Furthermore, since their issuance was largely unregulated, banks leveraged themselves very heavily in issuing CDSs that had notional values that could be more than a hundred times their capital.

Underlying the logic of this whole set of developments was an incentive structure that placed an enormous premium on short-term profits, often at the expense of longer-term profits or even longer-term corporate survival. Executives in the financial sector are paid in large part in bonuses that are based on hitting profit targets or stock options, the value of which was hugely responsive to short-term profits. In both cases, there is an enormous incentive to show short-term profits. The same dynamic applies with hedge funds, where managers typically receive 20 percent of the gains. If the cost of the gains for a hedge fund in the current year are losses in future years, this poses little problem, since the managers do not share in the losses.

This structure of compensation gave managers little incentive to plan for the long-term health of their own companies and encouraged all forms of risky behavior. The biggest incomes flowed from generating large fees, even if there would be losses from the assets being sold. This was certainly the case with the issuance of highly questionable subprime and Alt-A mortgages and also with the selling of CDSs. In both cases, the underlying assets were

[9] Bank of International Settlements, "Triennial and semiannual surveys on positions in global over-the-counter derivatives markets as of the end of June, 2007." Table A [available at http://www.bis.org/publ/otc_hy0711.pdf?noframes=1}.

often very risky and could lead to large losses, but the fees from issuing and bundling mortgages and from selling CDSs led to large short-term profits.

It's worth noting that many of the figures at the worst financial actors have made themselves enormously wealthy, even as they wrecked their companies. For example Angelo Mozila, the CEO of Countrywide Financial, one the nation's largest originators of subprime mortgages, earned several hundred million dollar in compensation over the last decade. His company is being taken over by Bank of America at a price that is a small fraction of its levels at the peak of the bubble.

Similarly, James E. Cayne, the boss who led Bear Stearns to bankruptcy, also pocketed hundreds of millions of dollars for his work. The same is undoubtedly true for many hedge fund managers who got 20 percent of large gains during the good years, but who are now watching their clients lose much of their investment during the down market.

The incentive structure, coupled with a weak regulatory system, gives executives enormous incentive to use financial engineering to gain quick profits regardless of long-term costs. In 1996, the financial sector accounted for less than 16 percent of corporate profits. By 2006, the sector accounted for more than 30 percent. Needless to say, much of what financial corporations booked as profits in 2006 was illusory. Their "profits" were fees on transactions that would eventually lead to large losses for their companies. But, these profits provided the basis for large rewards for the big actors in the sector.

The End of the Bubble and the Meltdown

The bubble began to unravel after house prices peaked and began to turn down in the middle of 2006. This led to rapid rises in default rates, especially in the subprime market. While the worst abuses in the mortgage market were in the subprime segment, the main reason that defaults were initially concentrated so heavily in this sector is that subprime homeowners were the most vulnerable segment of the population. They did not have retirement accounts that they could draw down or family from whom they could borrow, when they found that they could no longer meet their mortgage payments. As a result, when they no longer had equity in their home against which to borrow, many subprime homeowners had little choice but to default on their mortgage.

It is worth noting that many of the subprime loans that began going bad in 2006 and 2007 were not purchase mortgages but rather mortgages used to refinance homes. Subprime lenders aggressively, and often deceptively, marketed mortgages for refinancing to low and moderate income homeowners as a way of getting access to extra money to meet bills or pay for big purchases like a care or home remodeling. As a result of these new subprime loans, families who had been secure suddenly faced the loss of their home.

The spread of defaults in the subprime market led to a sharp reduction in the valuation of MBS that contained substantial quantities of subprime mortgages, as well as the various derivative instruments that were based in whole or in part on MBS with substantial subprime components. The fact that so many instruments and institutions were exposed to serious risk from the subprime market led to the series of credit squeezes that hit financial markets beginning in the winter of 2007. Investors could have little confidence in the security

of a wide-range of assets and institutions, since it was not generally possible to know the extent that they were exposed to bad mortgage debt.

This financial meltdown also has important feedback effects on the housing market. On the supply side, the flood of foreclosures ensures that a large supply of housing will be placed for sale, since banks are generally anxious to sell properties on which they have foreclosed. In many of the most affected markets the number of foreclosures was running at levels that were close to the number of sales in the fall of 2007 and winter of 2008.

On the demand side the growing stress in financial markets has helped to dampen demand, since banks are far more reluctant to make loans than had been the case two years ago. With banks recognizing that they had been overly lax, and that prices are now falling, they are now demanding much larger down payments (20 percent in some of the most rapidly deflating markets) and insisting of much fuller documentation of income and asset information. There are millions of people who had been eligible to receive loans in 2006 who would not be able to take out a loan under the current standards. As a result, the number of potential buyers has contracted substantially over the last two years.

The continued flow of houses for sale, coupled with the sharp cutback in demand, is leading to rapid declines in house prices in many markets. In the first quarter of 2008, house prices were falling at more than a 20 percent annual rate in the Case-Shiller 20 City Index. House prices were falling at more than a 30 percent annual rate in the most rapidly deflating markets like Las Vegas, Los Angeles, and Phoenix. There is little likelihood that prices will stop dropping in these markets in the near future, although at this rate of price decline, most of the bubble induced run-up should be eliminated by the end of the year.

While a quick end to the housing bubble would be desirable in many respects, it will almost certainly lead to more financial turbulence. Banks around the world have already written down losses of more than $200 billion in connection with the collapse of the housing market, the total figure for write-downs is likely to be closer to $1 trillion. The additional write-downs hitting the market will almost certainly cause more banks to become insolvent and will impose serious stress on Fannie Mae and Freddie Mac, the two government sponsored corporations that are the backbone of the secondary mortgage market. The weakness of the housing market and the financial institutions with heavy exposure to the sector will worsen the recession , which will in turn aggravate the problems in the financial sector.

The Lack of Regulation

While it is easy to tell this story with hindsight, most of the worst abuses in the issuing, securitization, and subsequent repackaging of MBS were evident at the time to anyone who cared to look. The explosion of the subprime market by itself should have been an alarm bell calling attention to the problems in the mortgage market. The subprime share of the mortgage market went from less than 9 percent in 2003 to more than 20 percent in 2005. This sort of jump, at a time when the economy was experiencing weak job growth and stagnant wages, should have provided sufficient concern to alert regulators to the fact that something was seriously wrong.

There were many other items that should have raised concern by the Fed and other regulators. The pressure on appraisers to issue over-valued appraisals was widely known at

the time. Similarly, the fact that the banks paid for the rating of their bonds by credit agencies also should have prompted more concern from regulators. This situation was a recipe for abuse. In the same vein, it is truly remarkable that the banks were allowed – in a post Enron era – to carry debt off balance sheet with SIVs.

There was a wide range of regulatory agencies at both the state and federal level that could have intervened to counteract some subset of these abuses. It doesn't speak well for these agencies that their efforts were at best limited and halting. However the Fed deserves the bulk of the blame for the abuses in the credit markets allowing for the housing bubble to grow unchecked.

The Fed had ample tools to place a stop on the worst abuses in the mortgage and credit market. Fed regulations on abusive mortgage practices would have had an enormous impact even on institutions that were not directly under its control. If the Fed had imposed sound issuance practices (similar, albeit strong to the ones it proposed in December), there would have been pressure for other regulators to apply similar regulations to institutions under their jurisdiction. More importantly, the Fed could have set a standard that alerted actors in the secondary market to the abusive practices of many lenders. This would have caused the most irresponsible lenders to have difficulty reselling their loans in the secondary market.

However, the Fed's biggest mistake was it failure to directly target the housing bubble itself. The bubble created the climate in which financial abuses could persist for years without being detected. As long as house prices continued to rise, none of the financial engineering of the bubble period posed any problems. It was only when prices began to fall that the over-leveraged credit of this period became problematic.

Through the run-up of both the stock bubble and the housing bubble, the Fed took the view that financial bubbles are natural events, like the weather, which cannot be prevented. In fact, financial bubbles can be contained and there is nothing more important that the Fed or any central banks can do then to ensure that they do not grow to such dangerous proportions. The U.S. and world economy is paying an enormous price for Greenspan's failure to do his job.

Global finance in crisis:

A provisional account of the "subprime" crisis and how we got into it[1]

Jacques Sapir[2] [Ecole des Hautes Etudes en Sciences Sociales, France]

The current financial crisis has become a major international event and can be compared to the 1997-1999 world financial crisis[3]. The current crisis has spread from the US mortgage market, where it exploded in the spring of 2007, to the global banking and financial system. It now, spring 2008, threatens a systemic collapse of the banking system. It has pulled the US economy into recession and already by late 2007 its consequences were being felt in the Euro-Zone. Most analysts now forecast a GDP fall of between 0.5% to 3.0% in the US economy and very slow growth in the Euro Zone. However, a major difference with the 1997-1999 crisis is that emerging markets look much less impacted than developed economies.

This crisis is far from over, and yet already it offers an outstanding example of how things can go wrong in a deregulated economic system. Like the 1997-1999 crash, today's crisis was predictable. The fact that it was not predicted and then its severity repeatedly under-estimated testifies to the ideological content of mainstream economics.

How and why the US mortgage-market went amok

The crisis began in the US mortgage-market when delinquencies and foreclosures on mortgaged loans began to multiply in the winter 2006-2007. The rate of delinquencies and foreclosures increased steadily during 2007 and then accelerated further in early 2008. Delinquency rates on subprime mortgage loans originated in 2005 and 2006 have exceeded the highest recorded rates of all previous vintages. Mortgages originated in 2007 are performing even worse. During the third quarter of 2007, 43% of foreclosures were on subprime Adjustable Rate Mortgages (ARM), 19% on prime ARM, 18% on prime fixed-rate, 12% on subprime fixed rate and 9% on mortgage loans with insurance protection from the Federal Housing Administration. Clearly, the Adjustable Rate Mortgage mechanism has been one of the major triggers of the crisis.

The value of Adjustable Rate Mortgages (ARM) contracts, which were reset at higher rates, was 400 billion USD in 2007 and 500 billion in 2008, of which only 250 billion were subprime contracts[4]. Although they comprised only a limited share of all outstanding mortgage contracts, s*ubprime* ARM contracts nonetheless seriously unbalanced the whole mortgage market. Their resetting could be extremely costly for homeowners. It has been

[1] This paper expands presentations made at the Russian-French Seminar co-organised by CEMI-EHESS and Institute of National Economy Forecasting, Russian Academy of Science at Vologda in December 2007, before the *Moskovskaya Shkola Ekonomiki's* faculty seminar and at the Troïka-Dialog organized RUSSIA-FORUM on January 31st, 2008. An earlier version has been published as a CEMI-EHESS working paper.

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[3] J. Sapir, *le Nouveau XXIè Siécle*, Paris, Le Seuil, 2008.

[4] http://money.cnn.com/2007/10/16/real_estate/October_resets/index.htm

estimated that the resetting of ARM contracts in 2008 will result in a 31% increase in payments[5]. The more accommodating monetary policy recently implemented by the Federal Reserve System (FED) aims to ease but not eliminate the reset-shock on ARM contracts. Although subprime contracts have received the most attention, it would be a mistake to think that delinquencies are confined only to this catagory. The delinquency trend is perceptible also in the higher quality alt-A and non-agency sectors. In fact alt-A and Jumbo contracts could be the source of an even greater reset shock than subprime contacts in months to come[6].

This situation has resulted from a lending policy of inducing households to take on too much debt through ARM contracts and from the development of "special compartment" mortgages, *Subprime* and *alt-A*[7]. These compartments, which previously played only a marginal role in the mortgage industry, became increasingly significant after 2001(figure 1). This was an important change in the nature of US mortgage industry.

Between 2001 and 2006 it was not just lower-income households which were enrolled in this system but also wealthier middle-class ones. These last used mortgage refinancing to raise money for other purposes (mostly to pay university fees). This created a credit bubble leading to a huge rise in real-estate prices. During its acceleration phase it had a cumulative effect of making it even easier to get mortgaged loans (and thereby leading to even higher real-estate prices) and inducing middle-class households into real speculative behaviour[8]. Subprime loans were over 1300 billion USD by March 2007[9], against 150 billion in 2001. By 2007 subprimes comprised as much as 14% of the mortgage market against 2.6% in 2001, with *alt-"A"* mortgages at a roughly similar level.

[5] C. Cagan. *Mortgage Payment Reset: The Issue and the Impact*. Santa Ana, CA: First American Core- Logic, 2007 pp. 29-31, available at http://www.facorelogic.com/uploadedFiles/Newsroom/Studies_and_Briefs/Studies/20070048MortgagePaymentResetStudy_FINAL.pdf

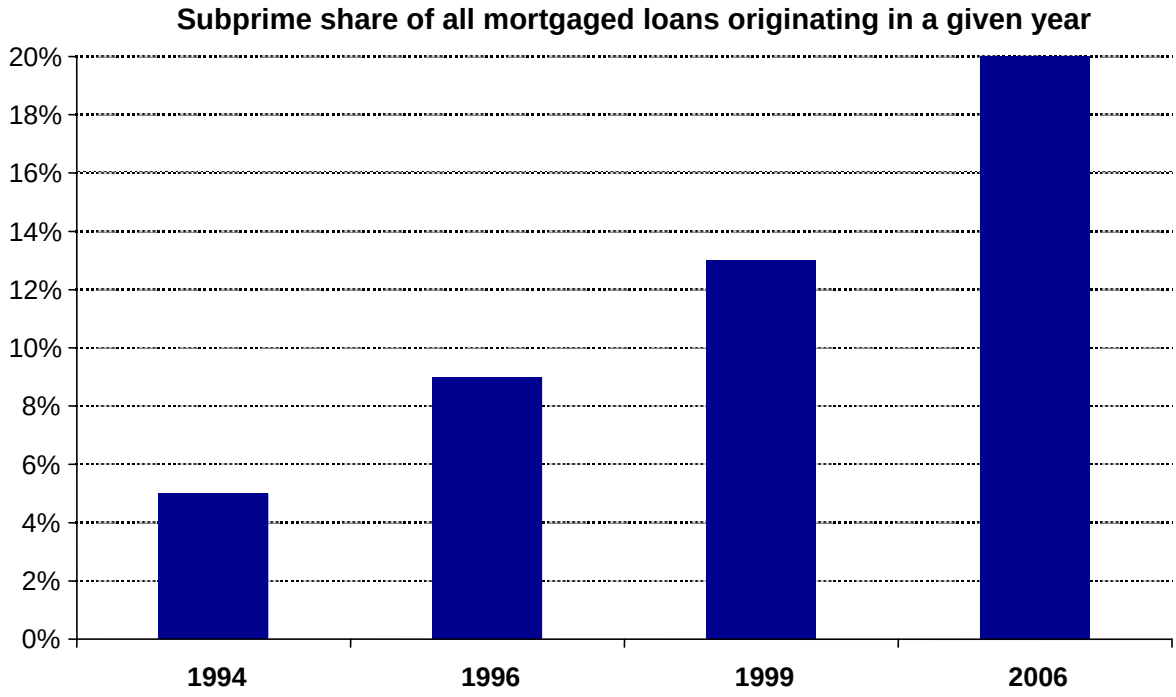
[6] IMF *Global Financial Stability Report*, April 2008, Washington DC, p. 5.

[7] *Subprime* are mortgages where the borrower debt/income ratio is over 55% or where the loan/house value ratio is over 85%. *Alt-As* are mortgages still qualify for an "A-rating" by Moody's and other rating firms but where references are incomplete. They are colloquially called "Liar's mortgages" as there is a strong incentive for the borrower to hide his/her own financial situation. There is a third "special" compartment called "Jumbo" for mortgage loans over USD 455,000.

[8] People were entering the ARM process in the hope they could re-sell the house before the planned rate hike and make a large profit. Households have been led to jump into the market not just for the need of a house but for the profit they hoped to make because of the upward movement of prices.

[9] Associated Press, March 13th, 2007.

Figure 1



Sources

1994 : http://www.bankrate.com/brm/news/mortgages/20040615a2.asp
1996 http://www.npr.org/templates/story/story.php?storyId=12561184
1999 http://www.bankrate.com/brm/news/mortgages/20040615a2.asp
2006 http://www.npr.org/templates/story/story.php?storyId=12561184

The ensuing "credit bubble" was induced not just mortgage market practices but also by the combination of specific social and institutional contexts that allowed some mortgage-market practices to be used in a purely speculative way.

The relevance of "special compartments" and the crisis of the US social model.

In the US mortgage industry, "special compartments" traditionally played a minor and marginal role. What changed after 1998, and particularly after 2001, was the fast increase in subprime and alt-A shares in mortgages originations. This was, first and above all, a response to a change in the social situation: the weakening of the middle-class and the resurgence of a true Veblenian world dominated by the *leisure class*.

The change began with Reagan's conservative revolution of the early 80's. It was slowed down but not reversed under the Clinton's administration. The conservative fiscal and income policy implemented by the Bush administration dramatically curtailed "middle-class" income growth to the benefit of the wealthiest part of the US population. In 2007, 0.1% of the US population earned 7% of the national income (the equivalent figure is 2% in France and Germany).

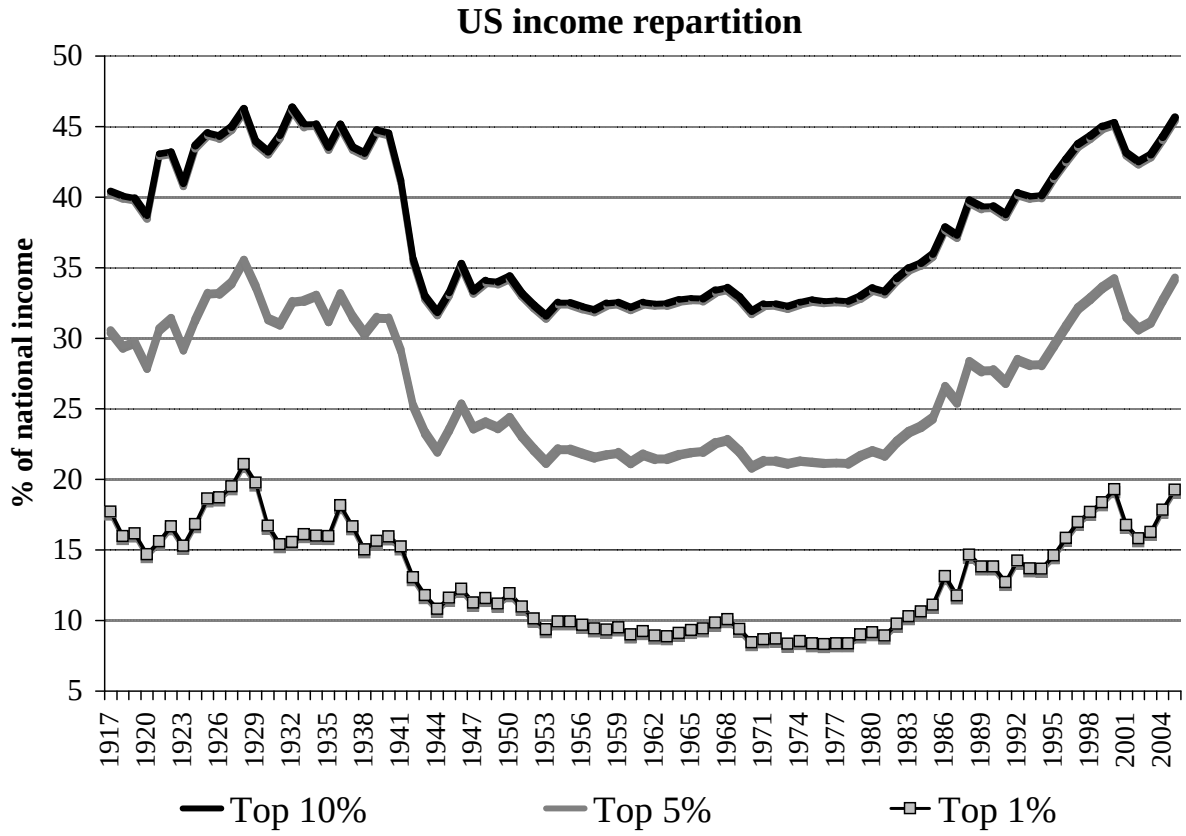
Average per capita income increased by around 3% a year from 2001 to 2007, but *median* per-capita income did not increase at all. This shows that US economic growth was mostly captured by the very wealthiest part of the population (in France and Germany, where

growth had been much lower, the *median* per-capita income increased by 2% in the same period). Income inequality in the USA, as shown in figure 2, has now reached its level at the time of the 1929 Crash and the onset of the Great Depression[10].

Because of the relative impoverishment of America's middle class, expansion of credit was needed to sustain internal demand and economic growth from 2001 to 2007. This explains why subprime and *alt "A"* developed so rapidly from 2000 onwards. But as a result, total household outstanding debt jumped to 94% of US GDP during the same period, a clear departure from the long-term trend (Figure 3). The expansion of household indebtedness was central to George W Bush's "compassionate conservatism"; credit became a proxy for a more balanced income policy. The device has been copied in Spain and Great Britain, two countries held up by conservative economists as European success stories. Household debt has reached 124% of GDP in Spain and 130% in GB.

The credit-bubble that developed on the mortgage-market can be seen when the yearly growth of mortgaged debt is compared to yearly growth of GDP (Figure 4). From 1967 to 1996, both curves are clearly correlated. The mortgage market was a good proxy (with some amplification) of US economic trends and business cycles. However from 1996 on these growth dynamics diverged. In 2003 and 2004, the growth of mortgaged debt was close to that of the peak years of 1971, 1978 and 1985 but without a commensurate increase in GDP growth. This shows that the mortgage-market had become divorced from the general level of economic activity and was boosted purely by speculation.

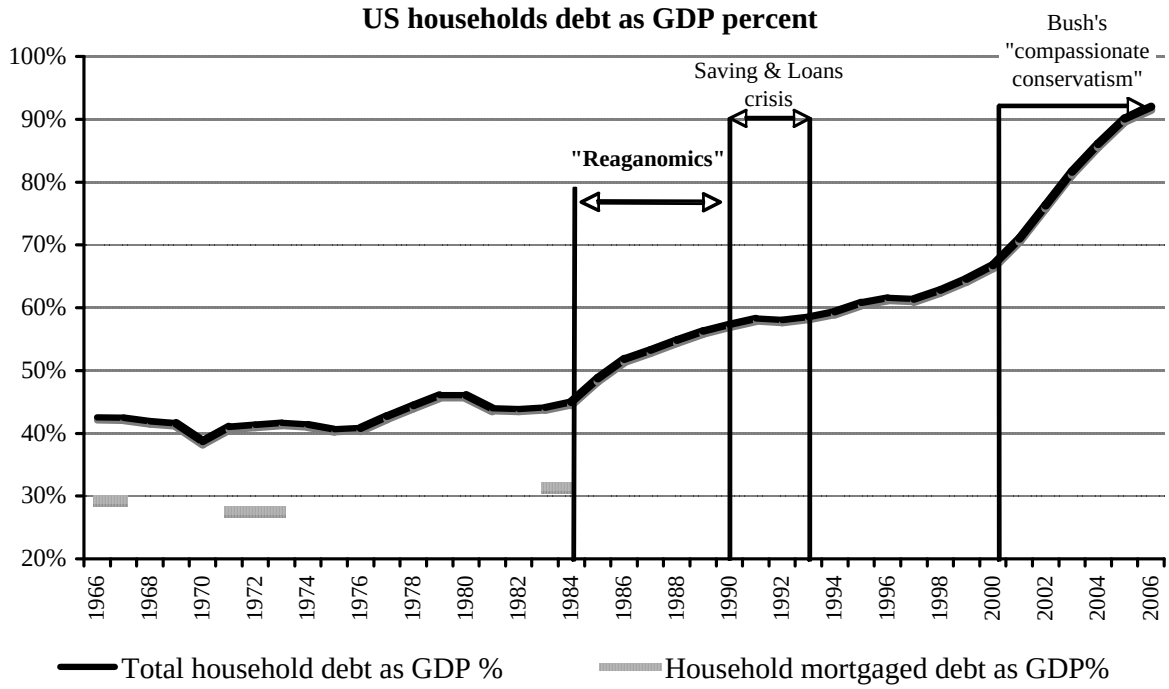
Figure 2



Source: T. Piketty and E. Saez, op.cit. Data updated by authors from IRS data.

[10] T. Piketty and E. Saez, "Income Inequality in the United States", *Quarterly Journal of Economics*, February 2003

Figure 3



Source: US Bureau of Economic Analysis and US Joint Economic Committee.

Figure 4

Source: US Bureau of Economic Analysis

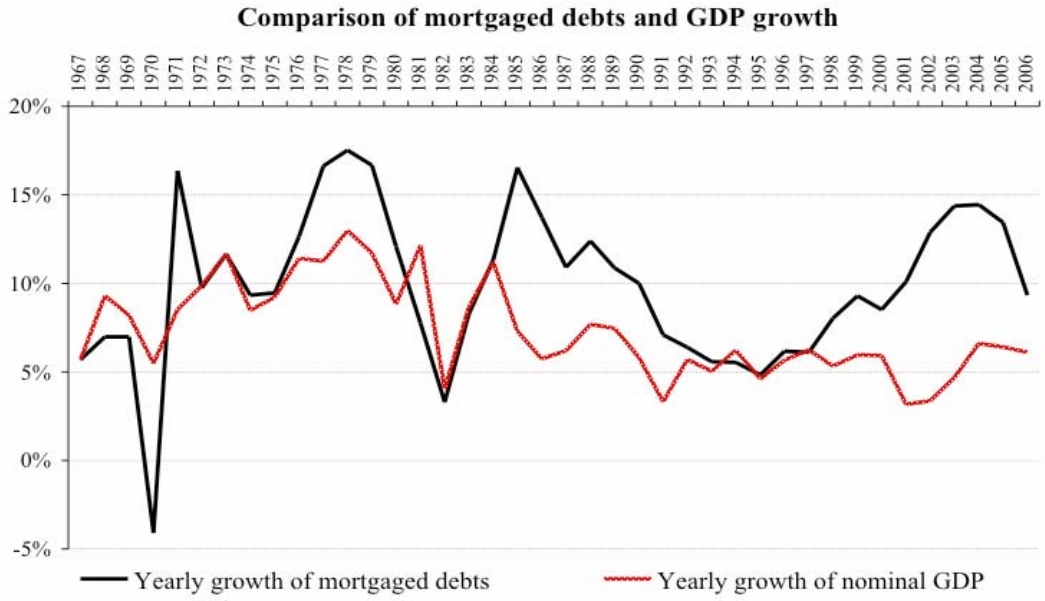
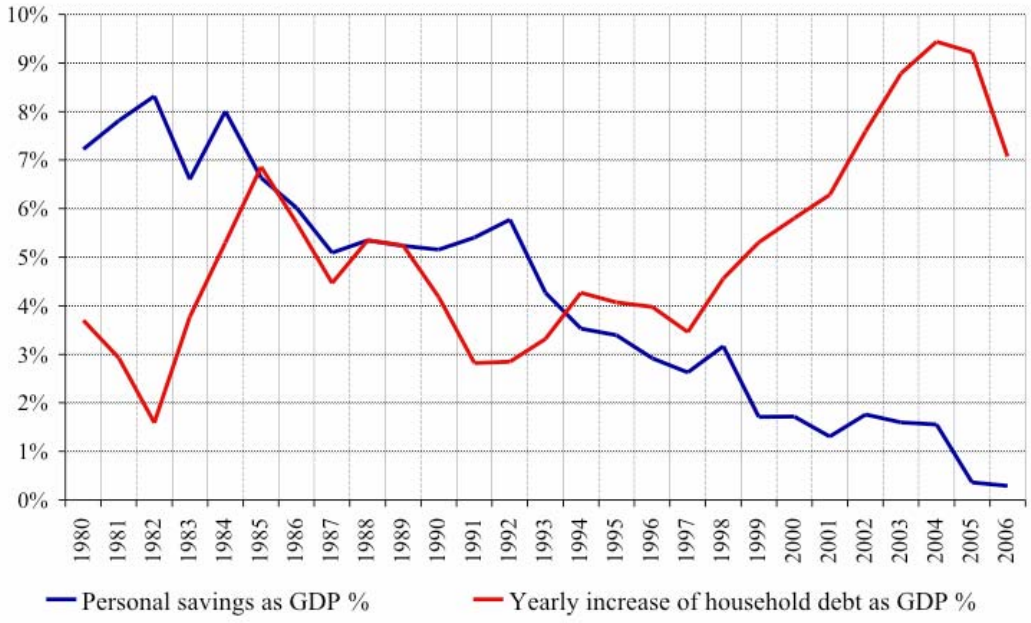


Figure 4b
Source: US Bureau of Economic Analysis



Although the conservative policies implemented by the Bush administration aggravated the situation, the divorce initially came about through the economic regime change that took place between the notorious Long-Term Capital Management crash in 1998 and the explosion of the Internet bubble in 2000. Those years, sometimes described as a wake-up time for the US economy and lauded in the selling of the US economic "model" to Europe[11], are the ones when this "model" actually derailed. As in the "roaring twenties", the accumulation process was unsustainable.

Credit leverage accelerated as subprime contracts encouraged minimal direct contributions from households.[12]. The use of adjustable rates in contracts also increased (see Table 1). Mortgage contracts qualifying as *Subprime* ARM comprised only 6.8% of loans outstanding, but accounted for 43% of foreclosures started during the third quarter of 2007.[13]

[11] For example, in Nicolas Sarkozy's election campaign for President of France in 2007.

[12] By the last quarter of 2006, the average mortgaged-loan amount had reached 99% of the transaction amount .

[13] Home-purchase loans are not the only kind of loan burdening US households. The total payments-to-income ratio may be over 55% when credit card and car-purchase debts are included.

Table 1
Characteristics of *Subprime* Home-Purchase Loans

	Share of ARM contracts	Debt Payments-to-Income Ratio (Solvency Ratio)	Average Loan-to-Value Ratio (Leverage Ratio)
2001	73.8%	39.7%	84.0%
2002	80.0%	40.1%	84.4%
2003	80.1%	40.5%	86.1%
2004	89.4%	41.2%	84.9%
2005	93.3%	41.8%	83.2%
2006	91.3%	42.4%	83.3%

Source: JEC, *The Subprime lending crisis – The economic impact on Wealth, Property Values and Tax Revenues, and How We Got There*, US Congress, Joint Economic Committee, Report and Recommendations by the Majority Staff of the Joint Economic Committee, US-GPO, October 2007 table 10, p.21.

Deterioration in mortgage-contract underwriting standards: a case of adverse selection

Subprime contracts were not alone in undermining the mortgage industry. The development of the *alt-"A"* compartment facilitated fraudulent loan applications by borrowers who desperately needed loans because they were unable to face other and previous financial charges or because they wanted to be part of the ongoing real-estate boom. By definition the *alt-"A"* compartment allows for incomplete loan applications. When this compartment began to grow rapidly, mortgage-lenders in other compartments began to relax, at least informally, their controls on applications so as not to suffer too much from the competition coming from *alt-"A"* mortgage contracts. The total share of low or no documentation mortgages among subprime home-purchase loans rose from 28.5% in 2001 to 50.8% in 2006.

It is estimated that more than 3 million loan applications made between 1997 and 2006 were fraudulent, a large majority being made in 2005 and 2006. The US Department of Treasury reports that "suspicious activity" increased 14-fold between 1997 and 2005, with the largest increases coming in 2004 and 2005[14]. So long as real-estate prices steadily increased, the deterioration in underwriting standards could to some extent be ignored. But not so once the market levelled and then began to turn down. A recent Joint Economic Committee report explains what happened as follows:

> The deterioration in underwriting standards in the subprime market as the market expanded is well documented. (…) Although underwriting standards in the subprime lending market began to decline after 2001, the effects of this decline were, until recently, mitigated by house price appreciation. If a borrower is struggling to make mortgage payments, but the value of his house has appreciated, he can solve his financial problems at least temporarily by refinancing the mortgage. Cash can be withdrawn from the increased equity in the house, and the new, higher mortgage can be sustained for a while. The house can also be sold, and the loan principal repaid. However, when house

[14] http://www.fincen.gov/MortgageLoanFraud.pdf .
See also Tyler Cowen in *New York Times*, January 13th, 2008, http://www.nytimes.com/2008/01/13/business/13view.html?_r=2&scp=1&sq=Tyler+Cowen&oref=login&oref=slogin

price appreciation does not create equity, borrowers' financial weakness cannot be disguised and default rates rise[15].

One important reason why "special compartments" developed so fast was the noticeable reduction in the risk-premium borrowers had to pay. In 2001 the difference between a subprime contract and one done in a "normal" compartment was 280 basis points (or 2.80%). The premium steadily decreased, reaching 130 basis points by early 2007. Meanwhile the subprime lenders were able to escape the escalating risk through "securitization", issuing mortgage-backed securities. Subprime lenders also introduced the adjustable-rate mechanism, which for the borrower had the effect of delaying the impact of monthly repayments. Interest rates during the first year were kept artificially low to induce new borrowers to enter into these contracts[16].

What happened here resembles a typical case of adverse-selection induced by increased competition. Financial deregulation implemented in the early 80's allowed economic actors to enter the mortgage market from the margins and destabilize the whole industry through their competitive impact. The greater risk of low or badly documented contracts would normally have deterred mortgage-brokers. But the intensity of competition generated by specialised high-risk mortgages brokers induced others to accept excessively high levels of risk so as not to lose market-share. The risk premium levied on subprime contracts did not keep borrowers from taking out loans that they actually could not afford. Adjustable Rate Mortgages and "payment option" mechanisms created the illusion of affordability at a time when middle and lower-middle-class incomes were constrained by the Bush administration policy. The credit bubble that emerged was largely the result of competition and market mechanisms in a weakly regulated environment. Although 41 states have laws regarding asset-based mortgages[17], their enforcement is uneven and frequently weak[18].

With adjustable rates, the interest rate burden began to be felt 20 to 27 months after the mortgage loans were issued. Prime delinquencies began to increase, with most ending in mortgage foreclosures and with people having to leave their houses which were then put on the market. Inevitably real-estate prices began to drop, which in turn undermined middle-class owners who had planned to sell their houses at a profit before the burden of the interest rate reset kicked in.

The combination of highly leveraged mortgages and high indebtedness in a time when middle-class household income was stagnant was a recipe for disaster. The neo-liberal

[15] US Congress, JEC, *The Subprime lending crisis – The economic impact on Wealth, Property Values and Tax Revenues, and How We Got There*, Report and Recommendations by the Majority Staff of the Joint Economic Committee, US-GPO, October 2007, p. 3.

[16] The adjustable-rate mortgage is a system where home owners only have to pay the interest (not the principal) during an initial period of one to two years. Another type is a "payment option" loan, where the homeowner can pay a variable amount, but any interest not paid is added to the principal.

[17] R. Quercia et al., *The Impact of North Carolina's Anti-Predatory Lending Law: A Descriptive Assessment*. Center For Community Capitalism, University of North Carolina, Chapel Hill, 2003; E. Renuart, An Overview of the Predatory Mortgage Lending Process. in *Housing Policy Debate*, Volume 15, Issue 3/2004.

[18] W. Li and K. Ernst, *Do state predatory home lending laws work*? Center for Responsible Lending working paper, 2006; R. Bostic et al., *State and Local Anti-Predatory Lending Laws: The Effect of Legal Enforcement Mechanisms*, Center for Responsible Lending Working Paper, Aug. 7, 2007, http://ssrn.com/abstract+1005423.

deregulation of the banking and credit sector had enabled in the 1980s a merger between credit and market activities in the banking industry. This resulted in a deep institutional change whose consequences were greatly underestimated. Managing credit risk is not only a different job than managing financial market risk; it also requires a different business culture. The combination of weakened financial institutions and the increasingly unequal distribution of income soon led to dramatic consequences.

The Bubble Bursts

Defaults increased steadily from early 2007 onwards, reaching 16% of the outstanding *subprime* loans by October 2007[19]. By late January 2008, 24% of subprime mortgages were delinquent or in foreclosure. By late September 2007 nearly 4% of all mortgages were delinquent or in foreclosure, meaning that for non-subprime compartments the average rate of delinquency was 2% against the traditional 0.5% rate. By late January 2008 the figure was 7.3% of all mortgaged loans, and 3.7% for all non-subprime compartments or seven times higher than the traditional rate. During 2007, nearly 1.3 million U.S. housing properties were subject to foreclosure, an increase of 79% over 2006[20].

Table 2
States where subprime foreclosures are expected to be above national average

	Total of *Subprime* contrats	Expected *Subprime* foreclosures 3Q07-4Q09	*Subprime* expected foreclosures as a percent of total *subprime* contracts
Ohio	293,566	82,197	28.0%
Michigan	275,931	65,607	23.8%
Minnesota	121,471	27,871	22.9%
Florida	708,195	157,341	22.2%
Arizona	250,799	53,372	21.3%
Nevada	134,528	28,390	21.1%
Illinois	286,246	59,328	20.7%
New Jersey	179,873	35,117	19.5%
Massachusetts	115,780	22,292	19.3%
California	1,030,920	191,144	18.5%
New York	364,433	67,386	18.5%
Total	3,761,742	790,045	21.0%
Percent of US total	**51,1%**	**59,7%**	**US average: 18.0%**

Source: JEC, *The Subprime lending crisis – The economic impact on Wealth, Property Values and Tax Revenues, and How We Got There*, op.cit., p.13.

[19] B. Bernanke, "The Recent Financial Turmoil and its Economic and Policy Consequences", October 15th, 2007, http://www.federalreserve.gov/newsevents/speech/bernanke20071015a.htm

[20] http://www.realtytrac.com/ContentManagement/pressrelease.aspx?ChannelID=9&ItemID=3988&accnt=64847

In February 2008, the number of foreclosures was at the highest monthly level since the onset of the Great Depression in 1929. Nevada was the worst hit state with a monthly foreclosure ratio of 1 in 165 homes, followed by California (a 1 to 242 ratio), Florida, Texas, Michigan and Ohio[21]. The situation varied greatly between states. Eleven states are expected to account for over 70% of total US losses in home equity and property values, and of these, three states, California, Florida and New York, for over 40%.

Real estate prices fell by 8.9% in 2007, the largest decline In the *Case-Shiller* national home price index in at least 20 years. By the end February 2008, the C-S index was down by 10.2% compared to January 2007. This is just the beginning of a process which could see real estate prices falling on average by 20 to 25% and maybe up to 40% in some states. Here again the regional discrepancy in the mortgage crisis will be significant. Some US states will be hit much harder than others. Nonetheless, there is no doubt that the drop in house prices will have a widespread effect on US consumer behaviour.

The crisis goes global: from the mortgage crisis to the credit crunch.

The relevance of "special compartment" mortgages increased quickly because they were backed by a powerful string of financial derivatives, especially "collateralized debt obligations" (CDOs) and "collateralized loan obligations" (CLOs). It is the "collateralization" process, which spread the current crisis; about 75% of recent subprime loans have been securitized[22].

Securitization is basically a process where assets, be they receivables or financial instruments, are offered as collateral for third party investment, thereby transforming debts into investment instruments. Securitization of course spreads risks, but more important it makes it difficult for the buyers of the derivatives to determine what risks they have bought. This financial innovation transformed structured finance into a highly complex game, where derivatives of derivatives were commonly issued, CDOs re-packaging other CDOs. Also these asset pools became more and more heterogeneous, combining hugely different asset-types with hugely different risks[23].

From the mortgage crisis to the bank crisis.

Structured finance began to develop in the 70's, but until the late 90's its use was relatively limited in the mortgage industry. However, Mortgage-Backed Securities (MBS) developed rapidly fast from 1998 onwards and were in the forefront of "risky" credit expansion[24]. After reaching 1,500 billion USD in 2002, they reached 8,500 billion in 2004 and

[21] A. Veiga, *Foreclosure Activity Rises in February*, AP Business, Thursday March 13, 5:16 am ET.
[22] A. B. Ashcraft and T. Schuermann, "Understanding the Securitization of Subprime Mortgage Credit", *FIC Working Paper* n° 07-43, Wharton Financial Institutions Center, Philadelphia, Pa., 2007.

[23] Yu. Demyanyk and O. van Hemert, "Understanding the Subprime Mortgage Crisis", *Supervisory Policy Analysis Working paper*, n° 2007-05, Federal bank of Reserve of St. Louis, St. Louis, February 2008.

[24] J.P. Morgan Corporate Quantitative Research, "Credit Derivatives Handbook,", J.P. Morgan, New York, December 2006, p. 6.

45,500 billion in 2007[25]. 54% of *subprime* mortgages were securitized in 2001 and 75% by 2006[26]. MBS became an important financial tool in a highly competitive context, where even small profit-rate gains could change the values of bank stocks.

The process of issuing "derivatives of derivatives" (the notorious CDO-squared) totally destroyed accountability and transparency of the mortgage industry. The development of Special Purpose Vehicles (SPVs) increased these problems. SPVs have progressively supplanted banks in the MBS trade. At the same time banks and insurance companies became willing to buy securities with a higher than average rate of return even if it was becoming more and more difficult to assess what was the precise composition of the collaterals. More importantly, the massive growth of basically unregulated structured finance allowed anyone to be transformed into an insurance company. Prudential behaviour fell victim to the strong competition between banks in global and largely deregulated markets. We have here a second typical case of "adverse selection" where high competition fosters unsustainable portfolio choices[27].

The fast developing MBS trade infected most Western and Asian banks, thereby spreading the US crisis all around the world. Since April 2007 several US banks have defaulted and one medium-sized British bank went bankrupt (Northern Rock). The British government then had no option but to nationalize the bank to avoid a major banking disaster and a 1929-type bank run. Since September 2007 there has been a stream of "surprise disclosures" of losses significantly higher than previously foretold and each adding to uncertainty. This impacted dramatically on the inter-bank monetary market. Elements of a generalized credit crunch began to appear by October 2007, forcing central banks (the FED and the ECB) to significantly increase their short-term liquidity supply. By 2 April 2008, 39 banks and insurance companies had announced write-off totalling 227.95 billion US dollars (Figure 5). Of these 39 institutions, the 11 worst account for more than two-thirds of disclosed losses and write-offs.

On 9 February 2008, the German Ministry of Finance warned that up to 400 billion USD may have been lost in the subprime crisis[28], of which between 50% to 55% would be by banks alone. By early April, the IMF stated that total losses could reach more than 950 billion USD. But because it is so difficult to determine losses suffered through SPV issued MBSs, nobody really knows. One can estimate at 450/500 billion USD the total bank sector loss by March 2008, with insurance companies and hedge funds making up the rest. Compared to total bank assets this is not so large. However, because the losses are still partly unaccounted for and because more could be in the coming, this is enough to boost "margin calls" and generate a worldwide credit crunch.

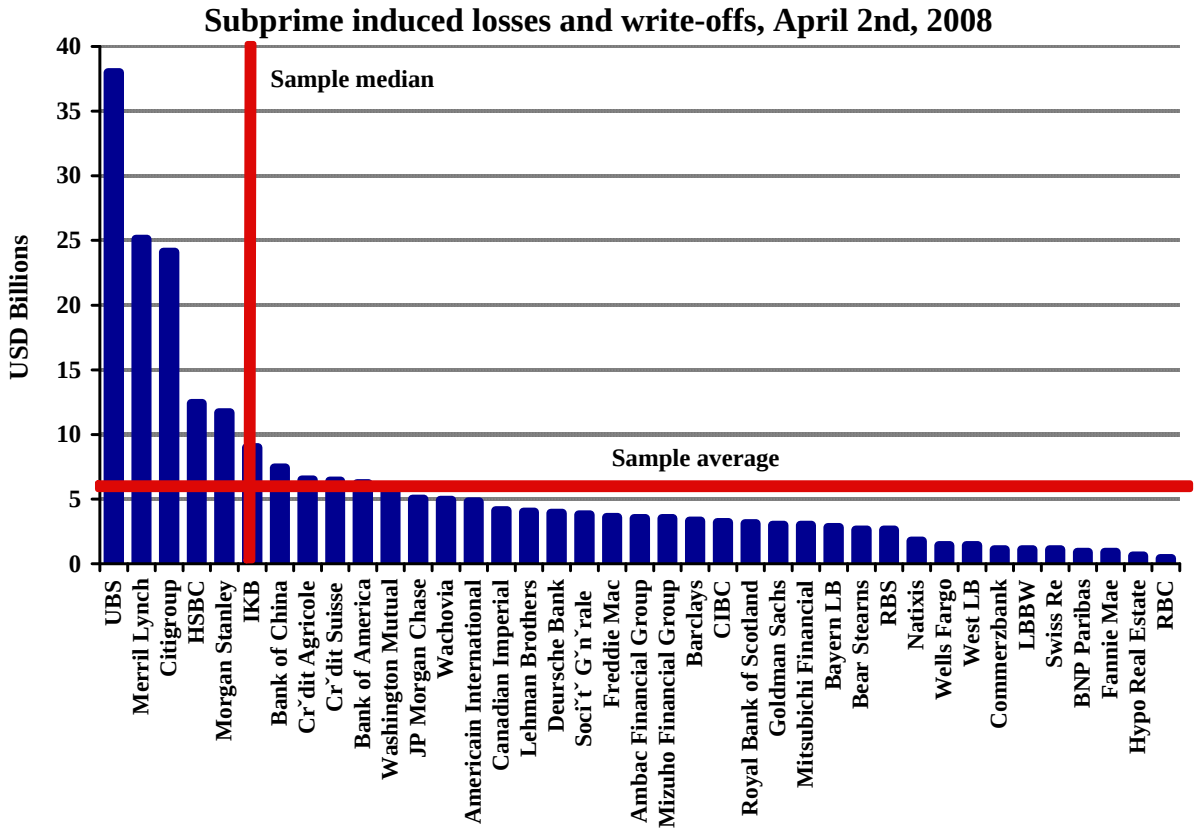
[25] J.P. Morgan Credit Derivatives and Quantitative Research, « Credit Derivative : A Primer », J.P. Morgan, New York, Janvier 2005.

[26] Asset Securitization Comptroller's Handbook, http://www.dallasfed.org/news/ca/2005/05wallstreet_assets.pdf and http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1020396#PaperDownload

[27] M. Hellwig, "Some Recent Developments in the Theory of Competition in Markets with Adverse Selection" in *European Economic Review*, n°31, 1987, pp. 319-325.

[28] Reuters, February 9th, 2008.

Figure 5



Source: international press.

The collapse of Bear Stearns[29], a mortgage broker, which had to be bailed out by J.P. Morgan Chase and the FED, signals that otherl financial institutions could be in dire straits and that systemic risk is now a clear and present danger. By early April 2008 more financial institutions, like UBS and CitiGroup, have announced huge losses.

The credit crunch: the FED at bay?

By now, May 2008, we are still far away from seeing the end of this crisis, especially because mortgage defaults have yet to peak and household insolvencies will impact on the credit cards market. The US economy has clearly entered a credit-crunch situation, and it is now spreading to most Western economies[30].

Early in February 2008 it was announced that credit card companies were to write-off 5.4% of their prime card balances against 4.3% in January 2007[31]. More than 7.1% of loans related to personal vehicles and cars were in trouble against 6% by January 2007 and

[29] A. Barr, "Bear Stearns gets help from Fed, J.P. Morgan", *Market Watch*, March 14th, 2008, 11.24 a.m. EDT.

[30] C.J. Whalen, "The US Credit Crunch of 2007: A Minsky Moment", *Public Policy Brief*, The Levy Economics Institute of Bard College, n°92, 2007, Annandale-on-Hudson, NY.

[31] Moody's Economy.com

personal bankruptcy filings, which had significantly decreased after the 2005 federal law made it much harder for households to wipe out their debts, are again increasing significantly. Even more disturbing is the fact that auction-rate securities suffered a major blow on 13 February 2008 when closed-end funds had acute difficulties with their usual weekly issuing session and 80% of auctions failed[32]. The auction-rate securities market is a low-profile but important segment of US financial markets. Were it to completely dry up, then most municipal funds and financial insurers would soon be in deep trouble. This was another strong signal that a serious credit crunch was developing in the US economy.

Facing the prospect of a major bank crisis inducing a global systemic risk, the FED acted strongly and rightly, moving interest rates from 4.25% to 3.0% in 10 days in January 2008. For the time being this saved most US banks and insurance companies but did not solve the problem. The FED acted again on March 11th, announcing what amounted to a massive bail out of the US bank sector and received support from the Europe's ECB. However, markets stayed cheered for less than 2 days. By March 13th, with Carlyle Capital going bankrupt, markets fell again[33]. On March 14th, Bear Stearns, a mortgage broker, had to be bailed out by J.P. Morgan, with FED help. Bear Stearns was bought during the week-end (March 15-16) by J.P. Morgan, using a $30 billion FED loan[34]. This quite desperate move was needed to prevent a major bank crash on Monday March 17th. Carlyle Capital, formed in August 2006 by the powerful private-equity firm Carlyle Group, in the meantime, had filed for liquidation[35]. Carlyle Capital had used a highly leveraged strategy (32 to 1) to fund a $21.7 billion portfolio of mortgage-backed securities issued by Fannie Mae and Freddie Mac, which were supposed to be much safer than subprime and alt-"A". However, the value of these securities has fallen during the credit crisis as buyers for any kind of mortgage securities have pulled out of the market. Losses suffered by UBS and Credit Suisse were also linked part to alt-A and partly to "normal" commercial real estate credits.

The events in the period 13 to 17 March showed clearly that the massive combined FED-ECB move of March 11th had been unable to check the crisis. The FED board reacted strongly during the fateful March 15th-16th week-end[36]. The discount rate was lowered by 25 basis points to 3.25%. The FED board also approved the creation of a special lending facility through the New York Fed that would be available to members of its primary dealers list. This lending facility amounts to a kind of liquidity guarantee given to most of the vulnerable operators and represents a new and very large injection of liquidity aimed at preventing a

[32] Bank of America Securities, February 14th, 2008.
[33] "U.S. stock futures wilt on Carlyle fund, dollar woes", by Steve Goldstein , *MarketWatch*, March 13th, 2008, http://www.marketwatch.com/News/Story/Story.aspx?column=Indications

[34] "J.P. Morgan to buy Bear Stearns for $2 a share Fed to finance up to $30 bln of Bear's less-liquid assets, mostly mortgages " *By Alistair Barr &Greg Morcroft , MarketWatch March 17, 2008* http://www.marketwatch.com/News/Story/jp-morgan-buy-bear-stearns/story.aspx?guid=%7B9B6A846F%2DA585%2D4123%2DBB53%2DCB3E07A3CFCE%7D

[35] "Carlyle Capital to file to liquidate the firm. Lenders take the last of the fund's mortgage-backed securities"*By Robert Daniel , MarketWatch* EDT March 17, 2008 http://www.marketwatch.com/news/story/carlyle-capital-liquidate-lenders-take/story.aspx?guid=%7b644261EF-1080-4079-9CEE-AAC9C52AFF91%7d&print=true&dist=printTop

[36] "Fed acts Sunday to prevent global bank run Monday" *By Rex Nutting &Greg Robb , MarketWatch March 16, 2008 http://www.marketwatch.com/news/story/fed-acts-sunday-prevent-global/story.aspx?guid=%7b43265631-1656-4697-8377-55F05D859B76%7d&dist=TNMostRead&print=true&dist=printTop*

bank collapse. In the first three days of the operation of this facility, more than $50 billion were borrowed.

If institutional financial authorities were to lose their market credibility, then market agents could forecast "catastrophic events" (like a massive bank failure or a run against the USD) and begin to act accordingly. Even if only a limited number of market agents came to doubt the wisdom and ability of financial authorities to control the current crisis, their cumulative actions would be enough to create conditions making their own gloomy forecasts self-fulfilling.

The credit crunch began to be felt in Europe by January 2008 and is now clearly worsening. In Great Britain the inter-bank offered rate (LIBOR) rose to 6% by March 28th when the central bank was lowering its key rate. The situation is also tense in Germany and Spain, but somewhat less in France where the banking system looks a bit less exposed. Still there are no doubts that the crisis will cross the ocean.

The FED's March 16th dramatic move was certainly necessary, even if it has been criticized as not transparent enough and prone to generate a moral hazard syndrome in the US bank community. The systemic risk now hanging over Wall Street is much too serious not to be forcefully addressed. However, there clearly is a panic element in the FED reaction. This is an ominous signal for months to come.

What next?

One wonders what moves will come next..

The FED could again lower rates for federal funds (the primary interest rate) to 2.0% as well as the discount rates, as the assets held by banks and insurances companies suffer from downward turns in stock-markets and real-estate markets and from the Basel-II rules implementation (mark to market)[37]. Financial institutions are already downgrading the asset side of their balance sheets as markets go down, leading them to restrict even more than necessary their lending activities. By doing so they increase the severity of the credit crunch and push the real sector further into stagnation and recession. This could increase delinquencies not only on mortgage loans but also on credit cards and other consumption credits as well, leading to a new deterioration of the asset balances of financial institutions. The real and financial sectors may heavily interact with a clear snowballing possibility during summer 2008. The heterodox prediction that Basel-II rules will not foster financial stability may unfortunately be proved true[38]. If so, once again institutionalists, who hold that uncertainty is both systemic and endogenous in financial markets and that they therefore cannot be relied upon to determine the "fair value" of assets except for the most short-term ones, would be proved right and the mainstream wrong.

[37] Basel Committee on Banking Supervision, *Basel II: International Convergence of Capital Measurements and Capital Standards. A Revised Framework-Comprehensive Version*, Bank of International Settlements, Basel, June 2006.

[38] L. Randall Wray, "Can Basel II Enhance Financial Stability ?", *Public Policy Brief*, The Levy Economics Institute of Bard College, n°84, 2006, Annandale-on-Hudson, NY. This point had also been made by Mr. J.J. Bonnaud at the last French-Russian seminar in Vologda, on December 10th, 2007.

One can reasonably expect US prime rates to go down as low as 2.50% or even 2.00%. However, there now is a strong possibility that this still could not be enough. Paul Krugman's gloomy vision before the FED's March 11 move seems to have been vindicated[39]. It is possible that the interest rate weapon has reached a point where it is no longer useful in fighting the oncoming disaster. If worries were to turn into a panic, even going down to 0.5% (as the Bank of Japan did some years ago) would not stop the calamity. A more radical path would have to be taken, with a probable government guarantee to some institutional lenders (Fanny Mae and Freddy Mac), possibly extended to banks. A government bailout of the banking (and probably insurance) sector is now clearly a possibility. But a consequence would be to increase the already rapidly growing US public debt[40], making it more difficult to keep interest rates low and increasing downward pressures on the USD..

All this needs to be put in the perspective of the Iraq War's budgetary burden. Nearly 251billion dollars were spent on the war between 2003 and the end of 2005. The direct cost could rise to $750 billion, and total economic cost could reach 1,026 billion if US forces are to stay until 2010. If a residual US military presence would be needed until 2015, the total economic cost could reach 2239 billion[41]. There is no way the US economy could face the current financial crisis and at the same time carry out military operations in Iraq at a level compatible with a strategic stabilisation.

All economic and political factors point toward a huge increase in the US public debt for 2008 and 2009. Against the overwhelming pressure to avoid raising interest rates, massive debt monetization and then inflation are likely to occur with consequences for the USD and the US economy to follow.

From the US recession to a world crisis?

Most analysts now expect the US economy to enter a recession, but will it be mild or severe and will it spread to Asia, Europe and Latin America and will "uncoupling" develop between the US economy and emergent ones like China, India and Russia?

Some Asian banks (mostly Chinese and Japanese) have suffered significant losses in the MBS trade. However foreign currency exchange reserves are so high in Asia-Pacific countries that the possibility of a major financial local crisis is quite remote. This is true also for Russia, whose banks have not been involved in the MBS trade. Russian FOREX reserves were over 509 billion USD by April 2008. The financial situation here is much better than in 1997/98, and both Asian and Russian Sovereign Funds are set to emerge from this crisis as major players.

Asian countries could be more affected by a strong recession in the USA. However, even if the US economy were to suffer a -3.5% recession (which would qualify as "severe") this would reduce current Chinese growth only from 11.5% to 8.0%. If the US economy undergoes only a "mild" recession (-0.5%), the Chinese growth would decrease from 11.5% to

[39] P. Kugman, "The face-slap theory", *The New York Times*, March 10th, 2008.

[40] Rex Nutting, *Budget deficit widens to record $175.6 billions*, Market Watch, March 12th, 2008.

[41] L. Bines and J. Stiglitz, *The Economic Cost of the Iraq War: An appraisal, three years after the beginning of the conflict*, NBER working paper 12054, February 2006, NBER, Cambridge, MA.

10.0%/9.5%[42]. The effect a US recession on Chinese growth is expected to be small because Chinese products are now widely exported to other markets. The development, even if too slow, of the Chinese internal market will also dampen the effect of any US recession. The same situation holds true for other East-Asian economies. China now imports form them more than the US economy does. This is why there is a strong possibility of an uncoupling between what is happening in the US economy and East-Asia. It has to be added that Asian emerging economies are accumulating a large share of world currency reserves. In such a situation Asian growth looks much more robust than in 1997.

Unfortunately the situation the EU faces is quite different. The Euro-Zone is already suffering low growth because of constrained household demand and an uncompetitive situation induced by too strong a Euro. This will exacerbate tensions in a zone where there is still no convergence of real sectors[43]. The combination of a lack of a "federal" budget at the Euro-Zone level and an ECB policy much too geared to fighting inflation could be a recipe for disaster when facing so strong a shock[44].

The US recession will probably lead to a European recession or stagnation. Growth will not exceed 1.1% in Germany for 2008, probably 1.3% in France, and will be under 0.5% in Italy. However, the main concern for Europe is the possibility of a mirror mortgage crisis in Great-Britain and Spain.

Mortgage based securities have increased in Spain from 25 to 200 billion euros between 2001 and 2006 and by the third quarter of 2007 had topped 247 billion. The solvency of Spanish households is now decreasing fast. The average weight of yearly loan payments (prime and capital) jumped to 45% of average yearly income in early 2007 and total Spanish household debt had reached 124% of GDP by the autumn of 2007[45]. Spain looks like the weakest link in Europe for 2008. As the ECB is less reactive than the FED, one cannot dismiss the possibility of a major crash in the Euro-Zone. One possible crisis transmission link to the EU could be through a mortgage and real-estate crash in Spain. German banks have invested heavily in the Spanish financial sector, which is clearly the most vulnerable to a real estate crisis (Figure 6).

[42] Different scenario are covered in Institute of International Finance, *Global Economic and Capital Market Forecasts*, Washington, January 2008, and by several East-Asian research institutes to which the writer had access late January 2008.

[43] C. de Lucia "Où en est la convergence des economies dans la Zone Euro?" in *Conjoncture*, BNP-Paribas, Paris, March 2008. C. Conrad et M. Karanasos, "Dual Long Memory in Inflation Dynamics across Countries of the Euro Area and the Link between InflationUncertainty and Macroeconomic Performance", in *Studies in Nonlinear Dynamics & Econometrics*, vol. 9, n°4, November 2005 (*The Berkeley Electronic Press*: http://www.bepress.com/snde.)

[44] J. Sapir, « La Crise de l'Euro : erreurs et impasses de l'Européisme » in *Perspectives Républicaines*, n°2, June2006, pp. 69-84.

[45] Data from the quarterly bulletin of the Spanish Central Bank.

Figure 6

Source: Central Bank of Spain.

If there is a financial sector collapse in Spain, then German banks, already weakened by losses they suffered on the US market, could face extremely serious difficulties. Already, several Spanish real estate developers have gone bankrupt. House building statistics are showing a major slow-down, moving from 800,000 houses a year to less than 375,000 for the last 12 months. The building rate could even collapse to under 100,000 a year by late 2008. The Spanish government delayed reacting until after general elections. The economic programme disclosed by prime-minister Zapatero on April 15th is probably a case of "too little, too late". Indeed, Spain could be for 2008 what Austria was for 1930, with its real estate sector playing the same fateful role as played by *CreditAnstalt*. Also a Spanish crash would have dramatic consequences not just in Europe but in Latin-America where Spanish banks have been extremely active.

Are we facing another 1929?

One of the most frequently asked questions today is whether the current crisis is roughly equivalent to 1929. Put this way, the answer is clearly no. But that is not to say that the crisis is a minor one.

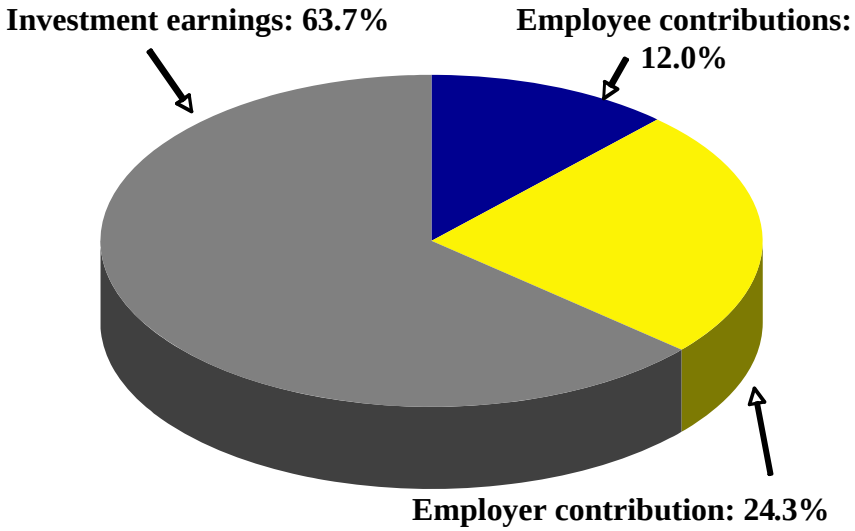
The current crisis will not turn out to be another 1929 for at least two reasons. First, central banks have learnt some lessons. The FED acted before the US banking sector could collapse. Preventing the so-called "systemic risk" certainly is a priority for central bankers. This is why some measures like the special FED lending facility have been created before and not after a major bank collapse. To a large extent the fact the policies have been guided by historical experience explains why so far the crisis has been a "slow-burn" one. But we need to remind ourselves that these polices are not enough to stop and even less to cure the current crisis.

Second, although the crisis will seriously damage the US and possibly some Western European economies, the emerging economies, particularly China, India and Russia, look quite strong. More than two-thirds of world FOREX reserves are held by emerging countries (including Russia). Real sector growth also looks solid with internal markets developing and "middle-class" consumer groups making their weight felt. Thus, emerging economics will dampen the effects of the crisis.

Nonetheless, there are reasons to compare the current situation with the 1929 one. First, the US income distribution is now quite similar to what it was in 1929. Generally speaking, neo-liberal policies have created such huge income inequality that a large share of productive investments made in the last ten years could be without a market if consumption credit collapses in Western economies. The very fact that social safety nets have been dismantled or are in the process of being dismantled in several countries makes consumption spending more vulnerable, as it was before the development of the "welfare-state" in the 1940's.

A second reason for comparing the current situation to 1929 is linked to the development of pension funds for retirement benefits. If financial markets remain depressed for a significant period of time, pension funds could run into serious trouble. On average, investment earnings account for more than 60% of pension funds revenues (Figure 7). If they decline sharply during the crisis, then pension funds will either have to reduce their payments, pulling down demand or increase employee and employer contributions, which would have the same effect. Already the deficit of UK-based pension funds reached £97.5 billion in February 2008. With US-based pension funds accounting for 45% of all pension funds, a revenue crunch induced by the financial markets crisis could have highly destabilizing consequences. The very fact that pension funds are becoming a matter of public concern creates enough uncertainty to push people to increase their savings at the expense of consumption in countries where pension funds are the dominant form of retirement benefits. Pension funds are a time-bomb inside the current crisis. They will contribute to the depression of demand and make the recession felt longer. Only countries where the "welfare-state" system has not been dismantled will escape this process.

Figure 7
Average Pension Funds revenue sources from 2001 to 2006.



Source: NASRA 2007

A third reason making a comparison with 1929 worthwhile is the dominance of neo-liberal ideology. What made the 1929 Crash so nasty was the fact that, except for a handful of dissenters, ideology blinded authorities and economists alike. In a technical sense corrective measures could have been taken quite early in that crisis, preventing it from spreading as it did. But this would have implied a major breach with the then dominant ideology. The current crisis is happening after more than twenty years of conservative revolution, which has brought about deregulation and a weakening of needed State economic functions. Even though there are now numerous voices asking for more *technical* regulations, the general fact that markets need to be regulated in a global and strategic sense has still not been acknowledged by economic and financial authorities.

A fourth reason making 1929 a possible benchmark for the current crisis in scope if not in historical path is the basic non-sustainability of global capital circulation as it developed after the 1998 crisis[46]. Following this crisis, global finance was restructured on the basis of a balance between extremely aggressive trade policies implemented by emerging countries (and bordering on predatory policies in the case of China) and their willingness to massively buy the US public and private debt. US indebtedness created the market needed by some East-Asian economies and allowed those countries to accumulate trade balance surpluses, which were transformed into USD denominated debts. In some ways this was not so different from the post-Versailles Treaty financial circulation organized by the Dawes Plan. So long as this two-sided arrangement worked, there was a natural alliance between USA and China to keep the system going.

However, four factors now point toward a breakdown of this arrangement. The first is that the size of the US debt has increased hugely because of the Iraq War. The second is that the compositional quality of Chinese exports is catching up with that of developed countries trade much faster than expected[47]. This is threatening first some Latin American countries (particularly Mexico) and even developed economies. The very fact that the massive USD devaluation since summer 2007 has not eased the US trade balance deficit is an important point to be kept in mind. The third factor is the already described fact that the US market is less and less relevant for China. The fourth factor is the rise of social tensions in China itself. The Chinese government could be forced to give a greater priority to the internal market. If so, keeping the USD afloat by buying every month a significant amount of USD denominated debts could, from China's point of view, become no longer necessary. Even a limited shift in the Chinese Central Bank reserves from the USD toward other currencies could now have devastating results.

So the underlying economic basis of the trade arrangements between the US and China is now seriously eroded. The collapse of those arrangements could be triggered either for political reasons or by simple mismanagement. Nothing significant, however, will happen before the close of Beijing's Olympic Games in August. But what will happen after is a huge question mark.

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[46] J. Sapir, *Le Nouveau XXIè Siècle*, op.cit..

[47] P. K. Schott, "The relative sophistication of Chinese exports" in *Economic Policy* n°53, January 2008, pp. 5-47.

Conclusion

The current crisis is much more than the result of a limited mortgage-industry collapse poisoned by badly regulated derivatives. The 1997-1999 crisis grew out of the Washington Consensus policies imposed on emerging economies. The current crisis is the creation of the conservative revolutions of the 80's and 90's in the USA and some European countries. It is a crisis for and created by neo-liberal policies and thinking. It became global because of the world financial market deregulation[48]. However, the WTO-sponsored global free-trade environment contributed also, by allowing an unsustainable compromise to develop between emerging Asian economies and the US economy.

There are strong similarities with the 1997-1999 world financial crisis. The current one will result in a brutal and wide-ranging re-drawing of the economic and financial "correlation of forces", giving more and more weight to countries like China, India and Russia, which are underrepresented in international financial institutions. It also, already, is causing another massive "cognitive shock" to mainstream economics and highlighting the necessity for "realist" economic theory[49]. The post-autistic movement emerged in the wake of the 1998 crisis. The months to come could see a growing awareness of the need for heterodox or "realist" economists to come forward with a fully developed agenda for institutional and economic policy reform aimed at dismantling what the neo-liberal revolution created.

We must not underestimate what our responsibilities could be in the near future.

[48] Paul B. Farrell ,*Derivatives the new 'ticking bomb' Buffett and Gross warn: $516 trillion bubble is a disaster waiting to happen*, Market Watch, March 10th, 2008http://www.marketwatch.com/news/story/derivatives-new-ticking-time-bomb/story.aspx?guid=%7BB9E54A5D%2D4796%2D4D0D%2DAC9E%2DD9124B59D436%7D&dist=TNMostRead

[49] See J. Sapir, *Quelle Economie pour le XXIè Siècle*, Odile Jacob, Paris, 2005.

End-of-the-World Trade[1]

Donald MacKenzie (University of Edinburgh, UK)

Last November, I spent several days in the skyscrapers of Canary Wharf, in banks' headquarters in the City and in the pale wood and glass of a hedge fund's St James's office trying to understand the credit crisis that had erupted over the previous four months. I became intrigued by an oddity that I came to think of as the end-of-the-world trade. The trade is the purchase of insurance against what would in effect be the failure of the modern capitalist system. It would take a cataclysm – around a third of the leading investment-grade corporations in Europe or half those in North America going bankrupt and defaulting on their debt – for the insurance to be paid out.

I asked one investment banker what might cause half of North America's top corporations to default. No ordinary economic recession or natural disaster short of an asteroid strike could do it: no hurricane, for example, and not even 'the big one', a catastrophic earthquake devastating California. All he could think of was 'a revolutionary Marxist government in Washington'. That's not a likely scenario, yet the cost of insuring against it had shot up ten-fold. Normally one can buy $10 million of end-of-the-world insurance for between two and three thousand dollars a year. By early last November, the prices quoted were between twenty and thirty thousand, and even then it was difficult to buy in quantity – at least, said the banker, 'not from anyone you trusted'.

Of course, the credit crisis has increased the risk of systemic economic failure. But the existence and rising price of the end-of-the-world trade indicate something beyond that. The crisis isn't just about the bursting of the US housing bubble and dodgy sub-prime lending. Nor is it merely a reflection of the perennial cycle in which greed trumps fear to create a euphoric disregard of risk, only for fear to reassert itself as the risk becomes too great. What is revealed by the end-of-the-world trade is that the current crisis concerns the collapse of public fact.

A price or an interest rate quoted by one person or firm to another and agreed between them is a private fact. That isn't good enough for many purposes. Even purely bilateral transactions are facilitated if there is a public fact, in this example a known and credible 'market price' or 'market interest rate', that can be consulted to check whether a quoted price or rate is fair. Trustworthy public estimates of borrowers' creditworthiness make debt markets far more liquid than they would be if borrowers' capacity to meet their obligations had to be investigated from scratch. Believable bank balance sheets encourage banks to lend to each other; it was the suspension of such lending that undid Northern Rock. As the American sociologists Bruce Carruthers and Arthur Stinchcombe pointed out in the journal Theory and Society in 1999, market liquidity – plentiful borrowing and lending, or buying and selling – 'is, among other things, an issue in the sociology of knowledge'. Believable market prices, valuations, credit ratings and balance sheets encourage lending, active trading, competition and keen pricing. If credibility is lost, then everyone becomes wary of lending, deals aren't done, and an increased proportion of sellers are the desperate, who have to accept fire-sale prices.

[1] This article originally appeared in the *London Review of Books* (http://www.lrb.co.uk) and appears here with the *Review*'s permission.

At the core of the current crisis is a set of mechanisms for the transfer of credit risk (the risk that borrowers default), in particular collateralised debt obligations (CDOs). The first CDOs were created in 1996-97 by banks that wished to pay others to take on the risks of the loans they had made. From 1999 onwards, CDOs were also pursued simply as money-making opportunities, and hedge funds as well as banks started to set them up.
CDOs come in many varieties, but one way for a bank or hedge fund to set one up is to create a separate legal entity known as a special purpose vehicle (typically registered in the Cayman Islands). The vehicle then buys assets such as corporate bonds, loans and bonds backed by mortgages, either from the parent bank – if, for example, the motive for the CDO is to reduce the risk of its loan portfolio – or on the open market.

To raise the money that's needed for these purchases and to create the opportunity for profit, the vehicle sells a hierarchically structured set of investments backed ('collateralised') by the pool of assets the CDO has bought. At the bottom of the hierarchy is the 'equity' tranche. Losses caused by default of the assets in the pool are absorbed in the first place by investors in this tranche, who in compensation receive the highest rates of return, often as high as 15-20 per cent. Next in the hierarchy is the mezzanine tranche or tranches, the investors in which incur a loss only if defaults are sufficiently bad to wipe out the equity tranche completely. Above the mezzanine is the senior tranche, and above that the super-senior. Because the buffer of the equity and mezzanine tranches stand between it and any losses, the senior tranche is usually regarded as very safe (equivalent to a corporate bond with the highest rating, AAA), and super-senior as even safer than that. Correspondingly, investors in these tranches have to accept rates of return substantially lower than those in the equity and mezzanine tranches.

For a structure as complicated as a CDO to be attractive to investors, facts about it need to be created: ratings, crucially, awarded to its tranches by firms such as Standard & Poor's, Moody's and Fitch. Traditionally, the core business of these rating agencies is to grade bonds issued by corporations. They divide these between 'investment-grade' and 'speculative' (colloquially, 'junk'), and there are multiple categories indicating how high in investment grade, or how low in speculative grade, a bond is. Standard & Poor's, for example, has ten categories of investment grade, ranging from AAA down to BBB–. Recently, however, a large part of what rating agencies have done is to grade CDO tranches. Many investment institutions are strongly guided by ratings, and some are allowed to invest only in investment-grade products. The success of CDOs has rested on the way they can be set so that the mezzanine and senior tranches can achieve investment-grade ratings while offering higher rates of return than equivalently rated corporate or government bonds.

To award a rating, or more generally to work out the value of a CDO, requires one to take three main things into account. First is the risk of default on each of the debt instruments in the asset pool. Past data are useful here – the rating agencies have kept records of corporate defaults for decades – and the market's current view of such risk can be worked out, either from the yield of the bond involved (a risky bond has to offer a higher yield before investors will buy it) or from the cost of credit default swaps. Like CDOs, these swaps are 'credit derivatives' – products built on the underlying market for bonds and loans – and they too have grown rapidly over the past decade. They are insurance, essentially, against the risk of an individual company defaulting. Under normal circumstances, credit default swaps are actively traded (far more often than a company's underlying bonds or loans), and thus have a credible market price.

A second issue is ‘recovery rates’: the amounts that creditors will get back when borrowers default. Though these rates vary, it’s common in CDO valuation simply to assume a recovery rate of 40 per cent. Third, one needs to take into account the extent to which defaults by different borrowers are likely to cluster. Some defaults are the result of idiosyncratic problems causing the bankruptcy of a single corporation, but others reflect systemic factors such as poor conditions in the economy as a whole. If the latter, then one corporation’s default is likely to be accompanied by others.

The extent to which default risks are linked is known in the world of credit derivatives as ‘correlation’. If correlation is low, defaults aren’t likely to cluster much, and only the equity tranche of a typical CDO would normally be thought of as carrying significant risk of loss. If, on the other hand, correlation is high and defaults tend to come in clumps, then the mezzanine and conceivably even the senior tranches can be hit.

Correlation is by far the trickiest issue in valuing a CDO. Indeed, it is difficult to be precise about what correlation actually means: in practice, its determination is a task of mathematical modelling. Over the past ten years, a model known as the ‘single-factor Gaussian copula’ has become standard. ‘Single-factor’ means that the degree of correlation is assumed to reflect the varying extent to which fortunes of each debt-issuer depend on a single underlying variable, which one can interpret as the health of the economy. ‘Copula’ indicates that the mathematical issue being addressed is the connectedness of default risks, and ‘Gaussian’ refers to the use of a multi-dimensional variant of the statistician’s standard bell-shaped curve to model this connectedness.

The single-factor Gaussian copula is far from perfect: even before the crisis hit, I wasn’t able to get a single insider to express complete confidence in it. Nevertheless, it became a market Esperanto, allowing people in different institutions to discuss CDO valuation in a mutually intelligible way. But having a standard model is only part of the task of understanding correlation. Historical data are much less useful here. Defaults are rare events, and producing a plausible statistical estimate of the extent of the correlation between, say, the risk of default by Ford and by General Motors is difficult or impossible. So as CDOs gained popularity in the late 1990s and early years of this decade, often the best one could do was simply to employ a uniform, standard figure such as 30 per cent correlation, or use the correlation between two corporations’ stock prices as a proxy for their default correlations.

However imperfect the modelling of CDOs was, the results were regarded by the rating agencies as facts solid enough to allow them to grade CDO tranches. Indeed, the agencies made the models they used public knowledge in the credit markets: Standard & Poor’s, for example, was prepared to supply participants with copies of its ‘CDO Evaluator’ software package. A bank or hedge fund setting up a standard CDO could therefore be confident of the ratings it would achieve. Creators of CDOs liked that it was then possible to offer attractive returns to investors – which are normally banks, hedge funds, insurance companies, pension funds and the like, not private individuals – while retaining enough of the cash-flow from the asset pool to make the effort worthwhile. As markets recovered from the bursting of the dotcom and telecom bubble in 2000-2, the returns from traditional assets – including the premium for holding risky assets – fell sharply. (The effectiveness of CDOs and other credit derivatives in allowing banks to shed credit risk meant that they generally survived the end of the bubble without significant financial distress.) By early 2007, market conditions had been benign for nearly five years, and central bankers were beginning to talk of the ‘Great Stability’. In it, CDOs flourished.

Ratings aside, however, the world of CDOs remained primarily one of private facts. Each CDO is normally different from every other, and the prices at which tranches are sold to investors are not usually publicly known. So credible market prices did not exist. The problem was compounded by one of the repercussions of the Enron scandal. A trader who has done a derivatives deal wants to be able to 'book' the profits immediately, in other words have them recognised straightaway in his employer's accounts and thus in the bonus that he is awarded that year. Enron and its traders had been doing this on the basis of questionable assumptions, and accounting regulators and auditors – the latter mindful of the way in which the giant auditing firm Arthur Andersen collapsed having been prosecuted for its role in the Enron episode – began to clamp down, insisting on the use of facts (observable market values) rather than mere assumptions in 'booking' derivatives. That credit correlation was not observable thus became much more of a problem.

From 2003 to 2004, however, the leading dealers in the credit-derivatives market set up fact-generating mechanisms that alleviated these difficulties: credit indices. These resemble CDOs, but do not involve the purchase of assets and, crucially, are standard in their construction. For example, the European and the North American investment-grade indices (the iTraxx and CDX IG) cover set lists of 125 investment-grade corporations. In the terminology of the market, you can 'buy protection' or 'sell protection' on either an index as a whole or on standard tranches of it. A protection seller receives fees from the buyer, but has to pay out if one or more defaults hit the index or tranche in question.

The fluctuating price of protection on an index as a whole, which is publicly known, provides a snapshot of market perceptions of credit conditions, while the trading of index tranches made correlation into something apparently observable and even tradeable. The Gaussian copula or a similar model can be applied 'backwards' to work out the level of correlation implied by the cost of protection on a tranche, which again is publicly known. That helped to satisfy auditors and to facilitate the booking of profits. A new breed of 'correlation traders' emerged, who trade index tranches as a way of taking a position on shifts in credit correlation.
Indices and other tranches quickly became a huge-volume, liquid market. They facilitated the creation not just of standard CDOs but of bespoke products such as CDO-like structures that consist only of mezzanine tranches (which offer combinations of returns and ratings that many investors found especially attractive). Products of this kind leave their creators heavily exposed to changes in credit-market conditions, but the index market permitted them to hedge (that is, offset) this exposure.

All this activity explains the attractiveness of the end-of-the-world trade. The trade is the buying and selling of protection on the safest, super-senior tranches of the investment-grade indices. No one buys protection on these tranches because they are looking for a big pay-out if capitalism crumbles: if nothing else, they have no reason to expect that the institution that sold them protection would survive the carnage and be able to make the pay-out. Instead, they are looking to hedge their exposure to movements in the credit market, especially in correlation. Traders need to demonstrate they've done this before they're allowed to book the profits on their deals, so from their viewpoint it's worth buying protection, for example from 'monolines' (bond insurers), even if the latter would almost certainly be insolvent well before any pay-out on the protection was due.

With problems such as the non-observability of correlation apparently adequately solved by the development of indices, the credit-derivatives market, which emerged little more than a decade ago, had grown by June 2007 to an aggregate total of outstanding contracts of $51 trillion, the equivalent of $7,700 for every person on the planet. It is perhaps the most sophisticated sector of the global financial markets, and a fertile source of employment for mathematicians, whose skills are needed to develop models better than the single-factor Gaussian copula.

The credit market is also one of the most computationally intensive activities in the modern world. An investment bank with a big presence in the market will have thousands of positions in credit default swaps, CDOs, indices and similar products. The calculations needed to understand and hedge the exposure of this portfolio to market movements are run, often overnight, on grids of several hundred interconnected computers. The banks' modellers would love to add as many extra computers as possible to the grids, but often they can't do so because of the limits imposed by the capacity of air-conditioning systems to remove heat from computer rooms. In the City, the strain put on electricity-supply networks can also be a problem. Those who sell computer hardware to investment banks are now sharply aware that 'performance per watt' is part of what they have to deliver.

The boom in credit derivatives had wider effects, in particular increasing the appetite for low-grade debt. A typical CDO, if it is to offer an attractive enough return to investors, has either to purchase risky (and thus high-yielding) bonds or loans in significant quantity, or to sell protection on such bonds and loans via credit default swaps. This fuelled the growth in private equity groups, which buy companies by borrowing very heavily, often by issuing large quantities of bonds. Because of the riskiness of heavily-indebted enterprises these bonds can achieve only junk ratings, but were attractive nonetheless to the creators of CDOs.

Fatally, the demand for risky debt – which arose not just from CDOs, but from the sharply reduced returns available from safer assets more generally – also encompassed bonds based on sub-prime mortgages: home loans that are risky, usually because the borrower has a blemished credit record, but also because the loan-to-value or loan-to-income ratio is high, documentation is poor, or it's a buy-to-let purchase or second mortgage. It is now well known that problems in the US sub-prime sector caused the credit market to turn in summer 2007 from boom to crisis.

It is important, however, to keep a sense of scale. Last autumn, the Bank of England calculated that bonds backed by US sub-prime mortgages totalled $0.7 trillion. That's a lot of money, but it makes up only 2.5 per cent of the total value of non-governmental bonds and corporate loans outstanding worldwide. Sub-prime's $0.7 trillion is, for example, dwarfed by the $11 trillion corporate bond market, of which $10.2 trillion is investment grade. Indeed, what is perhaps most striking about the credit crisis is that corporations outside the financial sector have remained generally in robust economic health, with bankruptcies and thus default rates at historic lows. Not a single investment-grade corporation has defaulted recently, and there haven't even been any recent large-scale speculative-grade corporate defaults.

Problems spilled over from sub-prime to sectors that hadn't been experiencing financial distress in good part because of damage to the credit market's fact-generating mechanisms. The rating agencies had graded products underpinned by sub-prime mortgages on the basis of previous experience of default rates and of the proceeds of the sale of repossessed properties, but had failed to take into account the effects of the bubble in housing prices in the US, the way in which the growth of mechanisms for transferring credit risk and the increased appetite for risky debt had altered the US mortgage market. Predatory and irresponsible

lending by commission-hungry brokers had been encouraged by the way in which even the riskiest mortgages could so easily be packaged and sold on, leaving the original mortgage-lender free of losses in the event of default. Mortgage-backed products that the rating agencies had ranked as investment-grade started to incur major losses, and the agencies had to revise many ratings sharply downwards. To take an extreme but not wholly untypical case, Moody's downgraded the top tranche of one mortgage-backed CDO by 14 notches. When it was issued in April last year the tranche was rated Aaa, the top of investment grade; by November, it was rated B2, well down in junk.

The rating agencies are businesses, and the issuers of debt instruments pay the agencies to rate them. The potential conflict of interest has always been there, even in the days when the agencies mainly graded bonds, which generally they did quite sensibly. However, the way in which the crisis has thrust the conflict into the public eye has further threatened the credibility of ratings. 'In today's market, you really can't trust any ratings,' one money-market fund manager told Bloomberg Markets in October 2007. She was far from alone in that verdict, and the result was cognitive contagion. Most investors' 'knowledge' of the properties of CDOs and other structured products had been based chiefly on ratings, and the loss of confidence in them affected all such products, not just those based on sub-prime mortgages. Since last summer, it has been just about impossible to set up a new CDO.

Even more damagingly, the credit world's existing special purpose vehicles have found it harder and harder to obtain funds from the source that usually sustains them, the sale of 'commercial paper' (short-term debt). Consequently, some vehicles have had to sell assets – not just mortgage-backed securities, but corporate loans and corporate bonds – to raise cash.

The result of such forced selling, and the unwinding of positions in other sectors of the credit derivatives market, has been a sharply increased demand for protection, and much-diminished willingness to sell it. As a result, the cost of protection has soared across all sectors of the credit market. The safest instruments have been affected as well as the riskiest ones, paradoxically sometimes to an even greater degree. For example, the returns from holding safe assets or selling protection on the safest index tranches were in the recent past paltry, so it was common for hedge funds and other market participants to finance such positions by borrowing, or by multiplying returns (and also potential losses) in other ways; this is called 'leverage'. A popular product, for example, has been 'leveraged super-senior', investors in which sell end-of-the-world insurance, but with returns and risks multiplied by about ten.

If you're levered up, even relatively modest market movements can force you to liquidate your positions in a hurry to stop your losses becoming catastrophic. Leveraged super-senior and similar products, for example, typically have specified 'unwind points': thresholds, such as loss levels, at which the deal has to be unwound by buying protection equivalent to the protection one has sold. With what Jon Gregory of Barclays Capital estimates in Risk magazine to be around $100 billion of leveraged super-senior protection having been sold, even the fear of approaching unwind points can be deeply disturbing to the markets.

Processes of this kind – changes internal to the world of credit derivatives, not in the level of the risks being insured against – have meant that investment-grade indices sometimes move by up to 20 per cent in a single day. At times, the price of end-of-the-world

insurance has corresponded to utterly implausible correlation levels in excess of 90 per cent: meaning, in effect, that if one investment-grade corporation were to default, almost all of them would.

Why aren't such mispricings being corrected by savvy investors, eager to seize the opportunities for profit they create? Why, for example, have people not been selling end-of-the-world insurance when the returns from doing so have jumped ten-fold while the risk of having to pay out remains small? A crucial part of the answer is that, paradoxically, a fact-generating mechanism is blocking the restoration of fact. The mechanism is 'marking-to-market', the compulsory revaluation of portfolios as market prices fluctuate. Its motivation is entirely sensible: for example, when regulators insist that banks mark-to-market, it should force them to disclose losses to their investors and creditors.

Unfortunately, however, marking-to-market makes market participants extremely sensitive to short-term price fluctuations. To sell end-of-the-world insurance, for example, is almost certainly an excellent long-term bet, but traders don't do it because of the fear that in the short run its price may increase even further, causing a mark-to-market loss. Although it would be a paper loss, it would have real consequences, damaging your bank's balance sheet and profits, threatening your bonus, and typically forcing you to transfer valuable collateral to the custody of the buyer of the insurance.

Over recent months, banks have frequently been accused of hiding their credit losses. The truth is scarier: such losses are extremely hard to measure credibly. Marking-to-market requires that there be plausible market prices to use in valuing a portfolio. But the issuing of CDOs has effectively stopped, liquidity has dried up in large sectors of the credit default swap market, and the credibility of the cost of protection in the index market has been damaged by processes of the kind I've been discussing.

How, for example, can one value a portfolio of mortgage-backed securities when trading in those securities has ceased? It has become common to use a set of credit indices, the ABX-HE (Asset Backed, Home Equity), as a proxy for the underlying mortgage market, which is now too illiquid for prices in it to be credible. However, the ABX-HE is itself affected by the processes that have undermined the robustness of the apparent facts produced by other sectors of the index market; in particular, the large demand for protection and reduced supply of it may mean the indices have often painted too uniformly dire a picture of the prospects for mortgage-backed securities. One trader told the Financial Times in April that the liquidity of the indices had become very poor: 'Trading is mostly happening on interdealer screens between eight or ten guys, and this means that prices can move wildly on very light volume.' Yet because the level of the ABX-HE indices is used by banks' accountants and auditors to value their multi-billion dollar portfolios of mortgage-backed securities, this esoteric market has considerable effects, since low valuations weaken banks' balance sheets, curtailing their capacity to lend and thus damaging the wider economy.

Josef Ackermann, the head of Deutsche Bank, has caused a stir by admitting 'I no longer believe in the market's self-healing power.' The state has had to stand between the market and the abyss. Had the British government not rescued Northern Rock, bank runs would have brought down other institutions and destroyed confidence in the UK's financial system. Had the Federal Reserve not bailed out Bear Stearns, at least one other major Wall Street bank would most likely have failed, and chaos might have ensued. With private lending

having dried up, government-sponsored lenders now provide 90 per cent of the funding of new mortgages in the US.

Modern central banking, backed ultimately by the tax payer, can almost certainly prevent financial catastrophe on the scale of 1929. Restoring normality, which requires repairing the cognitive state of modern finance, is quite a different matter. As Carruthers and Stinchcombe note, market liquidity depends on facts. However, today's financial facts depend on liquidity. The credit markets remain stuck in a vicious circle.

There are some signs that repair might be possible. Pension funds, which are under less immediate pressure to mark-to-market, have started to sell end-of-the-world insurance, and if they do so on a larger scale, liquidity and thus credible prices may return to that part of the index market. The rescue of Bear Stearns persuaded many traders that the Federal Reserve will not allow any major US bank to collapse, and a $19 billion write-down (a reduction in the balance-sheet valuation of its portfolio) by the Swiss Bank UBS in early April was widely seen as a nadir, the valuation now so low that it was unlikely to fall much further.

But there have been false dawns before. In early October 2007, as US banks first started to report large write-downs of their credit portfolios, their share prices surprisingly soared. 'It seems that the more money you lose,' one banker told the Financial Times, 'the more your shares go up.' It had begun to seem as if the banks had the measure of the crisis, and facts were on the way to being restored. However, that impression quickly evaporated as within weeks the estimates of losses jumped upwards. For example, by 20 October Merrill Lynch had increased its estimate of its losses from $4.5 billion to $7.9 billion. That's the problem with facts. Once they fall apart, they are very difficult to put back together again.

What's in a number? The importance of LIBOR

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Judged by the amount of money directly dependent on it, the British Bankers' Association's London Interbank Offered Rate matters more than any other set of numbers in the world. LIBOR anchors contracts totalling around $300 trillion, the equivalent of $45,000 for every human being on the planet. It's a critical part of the infrastructure of financial markets, but like plumbing doesn't usually get noticed. Only a handful of economists, and no other academics, have ever looked in any detail at LIBOR, and even the financial press has taken an interest in how LIBOR is calculated only this past spring, when there was sharp controversy over whether these most crucial of numbers could be trusted.

The process of calculating LIBOR yields no immediate clues as to how vital it is. Its central co-ordination requires only two people, who work in an unremarkable open plan office in London's Docklands, and seemed utterly routine when I watched them at work a couple of years ago. Just after 11.00 am every weekday that's not a bank holiday, traders at leading banks send in electronically their estimates of the interest rates at which their banks could borrow money. Sometimes the co-ordinators make a reminder phone call to a bank that has not sent in its estimates, and if the latter seem implausible – typos, for example, are fairly common – they're checked, also with a quick call: 'Hi there, is the Kiwi chap [provider of the estimates for borrowing New Zealand dollars] about? ... Bit of a spread on the two month. Everyone else is coming in a good bit under that.'

A simple computer program discards the lowest quarter and highest quarter of the estimates, and calculates the average of the remainder. The result is that day's LIBOR. The calculation is repeated for each of ten currencies and fifteen loan durations (from overnight to twelve months), so 150 LIBORs are published daily: overnight sterling LIBOR, one-week euro LIBOR, one-month yen LIBOR, three-month US dollar LIBOR, and so on.

It's the back-up arrangements that provide the first hints of how much the calculation matters. Those who superintend the process have dedicated phone lines laid into their homes so they can still work if a terrorist attack or other incident stops them reaching the office. A nearby similarly-equipped building is kept in constant readiness, and there's a permanently-staffed back-up site, which I shall describe only as being in a small town some 150 miles from London. Its employees periodically work in the London office, so that they're fully ready to take over if needs be.

The precautions are needed because inability to calculate LIBOR would quickly paralyse large parts of the global financial system. The 150 numbers are the dominant global benchmark for interest rates. The rates on borrowing totalling around $10 trillion – corporate loans, adjustable-rate mortgages, private student loans, and so on – are pegged to LIBOR. For instance, the level of LIBOR determines the monthly payments on around half of the adjustable-rate mortgages in the US: rates are set as LIBOR plus a fixed margin and reset periodically as LIBOR changes. Even in the UK (where explicit pegging of this kind is rarer) LIBOR is a big influence on mortgage rates.

LIBOR is even more central to the huge market for interest-rate swaps. These are contracts in which one bank or other organisation pays a fixed rate of interest on a given

amount of money, while another bank pays a floating (that is, variable) rate – such as three-month US dollar LIBOR – on the same amount. The total amounts involved, added up across the globe, are around $310 trillion. Measured that way, the swaps market is the biggest financial market of them all, and most of it depends on LIBOR.

Invented only at the start of the 1980s, swaps enable lenders and borrowers to eliminate the risk of interest-rate changes. Take fixed-rate mortgages, for example. Without swaps, a bank might be reluctant to offer them, because it generally pays its depositors floating rates, and also borrows from other banks at floating rates. If interest rates go up, the bank will therefore have to pay out more, while its revenue from its fixed-rate mortgages stays the same. (As rates rose sharply in the 1980s, almost all the savings and loan associations in the US – the equivalents of the UK's building societies – were caught out in this way. The resultant crisis, a precursor of today's credit crunch, pushed over seven hundred savings and loans into insolvency, and the rescue operation ended up costing US taxpayers around $130 billion.) Entering into a swap in which the bank pays a fixed rate and receives a floating rate enables it to cancel out the effect of interest rates changing, and conditions in the swaps market are thus a major influence on the terms on which fixed-rate mortgages are available. The very possibility of a large-scale swaps market depends upon having a measure of interest rates that is unequivocal and credible enough to form the bases of contracts denominated in billions of dollars, and LIBOR has provided that measure.

In a financial world dominated since 1945 by the US, it's striking that the global benchmark is a set of London rates. Paradoxically, the ultimate cause is Britain's failure – crystallised by the 1957 sterling crisis – to re-establish the pound as a major international currency. That prompted the leading British banks increasingly to accept deposits, lend and borrow in US dollars ('eurodollars', as they came to be called). The Bank of England overcame its initial anxieties and came tacitly to support the eurodollar market, and the Johnson Administration inadvertently encouraged it by trying to stem the flow of dollars overseas. Eurodollar operations conducted in London allowed US banks to circumvent the resultant controls.

The result was that London became – and in many ways remains – the centre of the international money markets. 'Money' here does not mean cash, but short-term loans between banks and other major institutions, and over a fifth of international lending of this kind still takes place in London. Crucial to facilitating this market – and to enabling LIBOR to be calculated – were, and are, London's money brokers. They initially emerged in the 1960s as a challenge to the traditionally staid, gentlemanly, top-hatted sterling money markets, in which lending took place via designated 'discount houses' backed by the Bank of England. Money brokers put lenders and borrowers directly in touch with each other, charging a fee for doing so. The business is fast-moving, and competition is fierce and sometimes not at all gentlemanly. If you listen to brokers' voices, you hear the tones of the East End and Essex more often than those of Eton or Harrow. Open-necked shirts are more common than suits and ties. While banks' dealing rooms are now often disappointingly quiet and orderly places – in reality there's far less shouting and swearing than in film portrayals – brokers' offices are more tightly packed (there's less space between desks) and more raucous.

Suppose a bank wants to borrow or lend in the interbank market. (The desire to lend arises because no bank likes to leave cash idle, even for the shortest period. Indeed, overnight lending is the busiest sector of the interbank market, with banks that have excess cash at the end of the working day lending to those that need it.) A bank's money-market

traders could directly contact their counterparts in other banks, but it's usually quicker and easier to work through the money brokers. This can now be done on-screen, but – especially if large sums are involved or market conditions are tricky and rapidly changing – it's often better to use the 'voicebox'. This is a combination of microphone, speaker and switches that can instantly connect each broker by a dedicated telephone line to each of his clients on banks' dealing rooms.

If a bank wants to borrow money, a broker needs quickly to find someone prepared to lend at an attractive rate; if a bank wants to lend, he – it's a predominantly male profession – needs to find a borrower ready to pay a good rate. So a broker needs continuously to know who wants to borrow, who is prepared to lend, and on what terms. As one of them said to me, a broker might 'speak to his big clients ... have conversations with them maybe twenty-five times a day, which is twenty-five times as often as they speak to their wives'.

A broker needs to pass information to his clients as well as to receive it: that's a major part of what they want from him, and a good reason to use the voicebox rather than the screen. The brokers' code of conduct prohibits passing on private knowledge of what a named bank is trying to do (unless a client is about to borrow from it or lend to it), but that restriction leaves plenty room for brokers to tell traders what has just happened and to convey the 'feel' of the market. There's a grey area in which euphemisms can be used: in context, a broker and a trader might both know which bank is meant when the broker says that 'the usual German' has just done something.

Brokers in major money-market currencies don't work as individuals, but in teams of up to a dozen or more, sitting close together in subsections of large, open-plan offices. Good eyesight is useful – trainees still sometimes called 'board boys' write unfilled bids to borrow and offers to lend on whiteboards surrounding clusters of brokers' desks, and you can occasionally see a broker using binoculars to read a distant whiteboard or screen – but a more crucial skill is what's called 'broker's ear': the capacity aurally to monitor what is being said by all the other brokers at a cluster of desks, despite the noise and while oneself holding a voicebox conversation with a client. As one broker put it to me 'When you're on the desk you're expected to hear everyone else's conversations as well, because they're all relevant to you, and if you're on the phone speaking to someone about what's going on in the market there could be a hot piece of information coming in with one of your colleagues that you would want to tell your clients, so you've got to be able to hear it coming in as you're speaking to the person.'

When you first encounter it, broker's ear is disconcerting. You'll be sitting beside a broker at his desk, thinking he's fully engaged in his conversation with you, when he'll suddenly respond to a question or comment from several desks away, which you simply hadn't registered. It's an embodied skill that matters to how LIBOR is calculated. The inputs to the calculation are provided daily by the money-market traders employed by banks on panels established by the British Bankers' Association. There are sixteen banks on each of the panels for the main currencies. What each bank has to provide is as the rate at which it 'could borrow funds ["unsecured" – that is, backed only by the bank's creditworthiness, not more specific collateral – and "governed by the laws of England and Wales"], were it to do so by asking for and then accepting inter-bank offers in reasonable market size just prior to 11.00', in the currency and for the time period in question.

Note the conditional: a LIBOR input is what a bank could do, not what it has done. So judgement is involved. A bank may not have borrowed anything in the minutes before 11.00 am. Deals for longer than overnight are intermittent, and there is little borrowing at some of the time periods involved, such as eleven months. 'Reasonable market size' is deliberately not defined exactly: it will vary from currency to currency and according to time period and market conditions.

The need for judgement is why the information provided by brokers is important to LIBOR. It helps a bank's traders to estimate the rate at which they *could* borrow money, even if they're not trying to do so. They can glance at the screens provided by their various brokers: all serious traders employ several. Those screens indicate the lowest rate at which banks are currently offering to lend and the highest rate at which they are prepared to borrow. Only the naïve, however, would provide the former rate as their LIBOR input. The screens don't reveal the amount actually available for borrowing at the lowest quoted rate, and it may fall short of 'reasonable market size'. It could range from a mere $50 million or so to a yard or more. ('Yard' – originally an abbreviation of 'milliard' – is the money-market term for billion, a word that in a noisy environment is all to easy to confuse with 'million'.)

The screens can't be expected to tell you at all exactly how much you would have to pay to borrow a few hundred million dollars (reasonable market size for short-term borrowing in a major currency), and are even less reliable when it comes to borrowing several yards. It can take an experienced trader talking to a number of brokers with good ears to form a realistic estimate. There's also an element of judgement in the rates that brokers put on the screens: they can, for example, consider it as misleading their clients to quote a bid to borrow at an unusually high rate, if it comes from a bank with poor credit standing to which many of their clients would be reluctant to lend.

Originally, LIBOR was an informal notion, and when different sets of banks were polled the resultant LIBORs could differ by as much as 25 basis points (a basis point is a hundredth of a percentage point). The current British Bankers' Association system for calculating LIBOR, involving a fixed procedure and predetermined panels of banks that change only infrequently, was set up in 1985, and has worked remarkably well; hence the preparedness of financial-market participants to have $300 trillion indexed to LIBOR.

The obvious risk to the calculation's integrity is that a bank on a LIBOR panel might make a manipulative input, trying to move LIBOR up or down so as to influence interest rates or the value of its swaps portfolio. That risk is the main reason for the exclusion from the calculation of the highest quarter and lowest quarter of inputs. Furthermore, once a day's LIBOR rates are set, each input – and the name of the bank that has made it – is also disseminated electronically, and so attempts at manipulation would have to take place in what is in effect the public gaze. The inputs to LIBOR can be viewed around 45 minutes after they are made on over 300,000 computer terminals worldwide, and they're certainly scrutinised. Well before the recent problems, one banker showed me that day's inputs into three-month sterling LIBOR, pointing with suspicion to a bank that had reduced its input – by a single basis point – from the previous day's, while all others had either increased theirs or left them unchanged. And brokers' screens and broker's ear shouldn't be forgotten. An input wildly at odds with what the screens show would be obvious, and word of persistent attempts at manipulation would quickly spread as brokers and their clients chat. The ultimate sanction – used in the past I was told, but not recently – is removal of a bank from a LIBOR panel. In the current climate, that would deeply damage the reputation of the bank in question.

The strength of these long-standing fortifications of LIBOR's status as fact has, however, been questioned as over the past year LIBOR has been cast into the spotlight. Ever since the rescue of Northern Rock, whether or not banks are sound, whether they are prepared to lend to each other, and sometimes even the levels of LIBOR have been topics for TV news, not just the *Financial Times*. Much of the most vocal criticism of LIBOR has come from the US, and has focused on dollar LIBOR – especially three-month dollar LIBOR, the main rate used in the swaps market. Some seem unhappy that the benchmark dollar interest rates are set in London just after 6 a.m. New York time, when traders are only starting to arrive at their desks, and that the US dollar LIBOR panel contains only three recognisably 'American' banks. The British Bankers' Association – membership of which is open to any bank operating in the UK, wherever it is domiciled – counters by pointing out that all the banks on the panel are global institutions, some with a major presence on the ground in the US, and collectively they are responsible for most London interbank dollar lending and borrowing.

The most prominent critic has been the *Wall Street Journal*. Underlying its suspicions was a concern that the public dissemination of banks' inputs – which is intended to make the process more transparent – had the effect of biasing inputs downwards, because banks may have feared that reporting publicly that they can borrow only at high rates would spark rumours about their creditworthiness. On April 16, under the headline 'Finance markets on edge as trust in Libor wanes', the *WSJ* reported a claim by analyst Scott Peng of Citigroup that although because of the credit crunch LIBOR was already high relative to the rates set by central banks, it should be even higher. Three-month US dollar LIBOR, suggested Peng, should actually be 30 basis points higher than it was – representing huge amounts of money, given the trillions of dollars indexed to it.

The British Bankers' Association responded by telling the *WSJ* that it was monitoring inputs closely and 'If it is deemed necessary, we will take action to preserve the reputation and standing in the market of our rates' – a warning that the *WSJ* read as a threat to remove any bank making dubious inputs. Over the next two days, three-month dollar LIBOR rose by 16 basis points, but in a context in which rates have been highly volatile it's impossible to be certain that this was because of the *WSJ*'s criticism, the British Bankers' Association's statement, or quite other factors. Central bankers began watching the controversy over LIBOR closely, reported the *Financial Times*, 'because some officials fear that the debate could be contributing to a broader sense of investor unease in the money markets'.

Given the criticism of LIBOR, why not abandon the conditional (rates at which banks *could* borrow) and shift, as some critics have suggested, to an index based on actual transactions? At least two such indices already exist. EONIA (Euro Overnight Index Average), calculated by the European Central Bank, is a weighted average of the rates of overnight interbank loans denominated in euros. SONIA, its sterling equivalent, is a similar average of overnight loans transacted via London's main money brokers.

There are attractions to EONIA and SONIA. In June, LIFFE, the London International Financial Futures Exchange, whose interest-rate contracts have traditionally been based on LIBOR, launched additional contracts based on EONIA, and it would like to do so for SONIA, although it hasn't yet got permission from the latter's owners, the leading brokers, to use it. Yet the very names of the two indices indicate their limitations. They're averages of overnight lending, and the market for longer-duration interbank loans is probably too patchy to sustain credible indices based directly on the transactions that have actually taken place. Right now,

much more than a week can seem far too long a time to lend a bank's carefully husbanded cash to one of its peers. It's also the case, brokers and traders told me, that until the Bank of England put on sustained pressure (and eventually, in May 2006, instigated reforms) the sterling overnight market could be unruly, with surprisingly volatile rates strongly influenced by position-taking by individual big banks.

It's also an illusion to think that indices based on transactions can't ever be manipulated. 'Closing prices' – the average of the day's final deals on an exchange – are widely used as indices, but there's then sometimes an incentive to 'bang the close', in other words to trade aggressively in the final minutes or seconds so as to influence the closing price. In July, the US Commodity Futures Trading Commission charged three oil traders with allegedly doing just that.

A potential alternative to LIBOR as a benchmark, at least as far as the US dollar is concerned, is New York Funding Rate, launched by brokers Wrightson ICAP in June. Its poll of banks is conducted in the US at 9.15 am New York time, inputs are anonymous, and each bank is asked to report the rates at which a typical bank with a high credit rating could borrow, not those at which it itself could. Despite these differences, however, the resultant numbers have tended not to differ much from US dollar LIBOR. That what could have become a rival has in actuality provided a confirmatory second opinion has thus helped restore confidence in LIBOR. The membership of the panels of banks that make LIBOR inputs may be broadened, and a new British Bankers' Association subcommittee will draw upon independent third-party analysis of inputs and have the power to demand that banks justify any that seem anomalous. So the controversy seems to be passing. Nevertheless, its sharpness, and how unsettling some market participants seem to have found it, indicate just how important LIBOR is to the world's financial system.

Part 2: What to do about it

How to deal with the US financial crisis at no cost to the taxpayer

Claude Hillinger [Ludwig Maximilians Universität, Germany]

Some 80 years after the Great Depression the stream of analysis of causes and of actual or hypothetical alternative policies continues. The analysis of the present crisis, particularly the question of how to deal with it, are still in a very early stage. The most recent contributions are largely reactions to the 700 billion dollar bailout of the financial sector proposed by treasury secretary Paulson and after some modifications passed into law. While a scholarly article is not going to impact the current crisis management in the US or elsewhere, hopefully it can contribute to understanding and to better decisions in the future.

I discuss briefly the crisis itself and then give some criteria that should be used in evaluating any policy proposed to deal with it. This is followed by a critical discussion of some of the policy measures that have been suggested. Finally, I give a list of proposals, that I believe best satisfy the stated criteria. In contrast to almost all of the proposals that have been made, mine involve no bailout of the financial sector with public funds.

The Subprime Mortgage Crisis

The immediate mechanisms leading to the crisis are fairly clear and agreed upon. Moreover, this understanding has been available for some time. I quote from a column of Paul Krugman titled “Mystery of the mortgage mess” and dated November 17, 2007:

> There's a very good Economic Letter from the Dallas Fed about the housing crisis, which explains a lot about how the mess happened. In short: lenders began making lots of dubious loans in large part because they were able to slice and dice the loans and sell them off to investors who didn't know what they were buying. My only fault with the letter is that it doesn't emphasize the extent to which borrowers were also suckered in.

Even earlier, on July 2, 2007 Krugman had written:

> What do you get when you cross a Mafia don with a bond salesman? A dealer in collateralized debt, obligations (C.D.O.'s) - someone who makes you an offer you don't understand.
> Seriously, it's starting to look as if C.D.O.'s were to this decade's housing bubble what Enron-style accounting was to the stock bubble of the 1990s. Both made investors think they were getting a much better deal than .they really were. And the new scandal raises two obvious questions: Why were the bond-rating agencies taken in (again), and where were the regulators?

Few would quarrel with this analysis today. The only element missing then and to some extent missing still is knowledge the magnitude of C.D.O.’s that were issued and of the amounts held by individual financial institutions. The crisis has been out in the open and its

nature pretty well understood for some time. It is surprising that the discussion of how to deal with it has begun so late and is still far from a consensus on what needs to be done.

Criteria for Judging Proposed Measures

Very generally the criteria for any kind of government action are the same: achieving a maximum of efficiency and fairness. Efficiency in this case means restoring the financial system to normal functioning and doing so at minimum cost. Fairness means distributing the costs and benefits of the action among the various groups involved in a manner that is felt to be fair by a majority of the population. Fairness in relation to the current crisis requires a consideration of the treatment of the following groups: The top managements of financial institutions, particularly of those firms that have become or are close to becoming dysfunctional; the ordinary employees of these firms; their stockholders; the general population; tax payers; last but not least, the borrowers under subprime mortgages, many of whom are in financial difficulty, or even facing foreclosure.

For many types of government actions, particularly in the economic sphere, a necessary condition for the achievement efficiency and fairness is that the action must be in accordance with clearly stated and explicit rules that can be communicated to the general public and can gain public support. In the absence of such rules, the bureaucracies charged with carrying out a policy tend to operate badly. This is particularly true in the present crisis. Given the mighty lobby of the financial industry, procedures that are not transparent are likely to favour them at the expense of the public. Even in the unlikely case that such procedures would be completely fair, the public would still suspect that undue advantages were gained by those present at the negotiating tables. Explicit and binding rules also have the advantage that they can be implemented more rapidly than procedures that may involve protracted negotiations and bargaining, also an important consideration in the present crisis.

Proposed Solutions: Paulsen and Beyond

The initial Paulson bailout proposal qualifies as a textbook example of how not to do it. It is totally unfair in that it involves a vast transfer from those already damaged by the crisis, the tax payers, to those who caused it and reaped substantial gains while the going was good, the executives and shareholders of the financial industry. Moreover, at least in the initial version, there was no compensation going in the opposite direction. Also, the proposed transfers are to be made at the sole discretion of the Secretary and are thus totally lacking in transparency. Finally, there is nothing in the proposal designed to make the financial industry act more responsibly in the future. On the contrary, the giant bailout increases moral hazard and encourages equally irresponsible future behaviour.

Modifications of the proposal following its initial justified rejection by the House of Representatives involved mainly cosmetic changes plus some unrelated goodies to make the package more acceptable.. Thus, congressional oversight, in the absence of clear criteria, does not produce transparency. A modification to the original Paulson proposal that has been suggested and appears to have been adopted in the latest modification is that taxpayers should get some equity in return. This is eminently fair, but raises further problems.

The lack of transparency in pricing the distressed assets that the treasury wishes to buy could plausibly be dealt with by holding auctions. Ausubel and Cramton (2008) have suggested that the treasury hold reverse auctions for this purpose. According to Bajaj (2008), the same idea has also been advanced by the Treasury and it is found in the revised versions of the Paulson plan. The pricing of distressed CDO's is however very difficult under any mechanism. Bajaj discusses this in general terms and Stiglitz (2008a) specifically in relation to the auction proposal:

> The administration attempts to assure us that they will protect the American people by insisting on buying the mortgages at the lowest price at auction. Evidently, Paulson didn't learn the lessons of the information asymmetry that played such a large role in getting us into this mess. The banks will pass on their lousiest mortgages. Paulson may try to assure us that we will hire the best and brightest of J Wall Street to make sure that this doesn't happen. (Wall Street firms are already licking their lips at the prospect of a new source of revenues: fees from the US Treasury.) But even Wall Street's best and brightest do not exactly have a credible record in asset valuation; if they had done better, we wouldn't be where we are. And that assumes that they are really working for the American people, not their long-term employers in financial markets. Even. if they do use some fancy mathematical model to value different mortgages, those in Wall Street have long made money by gaming against these models. We will then wind up not with the absolutely lousiest mortgages, but with those in which Treasury's models most underpriced risk. Either way, we the taxpayers lose, and Wall Street gains.

Based on the articles of Bajaj and Stiglitz, it seems clear that while auctions may be better than pure discretion, they are not a good solution.

An entirely different approach is taken by Leamer (2008). He takes the central element in the crisis to be the decline in housing prices and he proposes to address the problem directly:

One honest way to transfer the losses directly to the taxpayers would have the Treasury buy homes directly at inflated prices and rent them to deserving Americans. Though the Treasury Plan involves buying mortgage backed securities at inflated prices, keep in mind that foreclosures will then turn the homes over to Uncle Sam. For $700 billion, the Treasury could purchase 2.3 million homes at an average "affordable" share based on their household income, and the government's subsidy would be spread over the duration of the mortgage, rather than being an immediate payout of three quarters of a trillion dollars to financial institutions.

While I have complete sympathy with the idea of directly helping home owners rather than financial institutions, I disagree with both Leamer's premise and his conclusion. Leamer attributes the mortgage defaults to falling housing prices. The reality is not only that there is mutual causation between these variables, but that in addition there are distinct causes operating on each. The principal causes of the rise in mortgage defaults are: a. The poor creditworthiness of recipients of subprime mortgages. b. The general rise in interest rates, leading to increases in interest on variable interest mortgages. Falling housing prices play a role in that families about to default find it more difficult to sell the house and move to a cheaper one. This is hardly the major cause and fixing it would not remove the other two. Leamer's proposed solution would turn the government into a gigantic real estate agent

dealing with millions of homes all over the United States. Each home is different in quality and location. That is why real estate agent are usually small or medium sized local operations; the government is ill suited to this task. In addition, Leamer's proposal requires a new welfare bureaucracy to determine the needs and paying abilities of families. There must be a better way!

A simpler and in my view better way to help home owners is the voucher plan advocated by Barton (2008) and similarly by Stiglitz (2008b). However, Dix (2008) points to a moral hazard problem created by the voucher proposal. What I don't like about these proposals is that it is still the taxpayer who foots the bill to compensate the financial industry for the losses that they would (and should) otherwise incur.

The analysis that I like best is that of Edlin (2008) because: a. He proposes a comprehensive approach incorporating several distinct elements. b. He distinguishes between 'fire fighting' the current crisis and longer term reforms. c. He advocates what I agree is the most important immediately required measure: full insurance for all deposits.

Edlin's other proposals may be described as 'bailout light': buy some toxic assets; inject some equity into the financial sector. I think that this is better than the plan that has just been adopted, but I am against any bailout.

Saving the Financial Sector at No Cost to the Taxpayer

a. As the first prong of my plan I shamelessly adopt Edlin's proposal for insurance of all deposits and assurance of payments. I have nothing to add to his analysis, however I want to point in this connection to the article by (my former teacher) Telser (2007) who wrote:

> LESSONS FROM BERNANKE
> Ben Bernanke provided a better explanation of the Great Depression back in 1983 in a seminal article in the American Economic Review: widespread bank failures were the critical factor behind the Great Depression. Markets cannot function without acceptable means of payments. Bank failures caused people to lose confidence in the safety of their deposits. More than 17 percent of all National Banks never re-opened their doors after the end of the Bank Holiday declared by President Roosevelt in March 1933. The real job of the Fed was one it failed to do: to maintain the solvency of banks. The Great Depression was the result.

I don't know if Bernanke was instrumental in raising the limit on insured deposits from 100 thousand to 250 thousand dollars. This may not be enough; all deposits should be insured!

On the evening of the day that I wrote the above, the German government announced that it was guaranteeing all accounts. The Irish government insured all accounts a few days ago, resulting in massive capital flows from British to Irish banks. This shows that an action that is desirable taken by itself may not be desirable when taken unilaterally in an interdependent system. The Greek government has also insured all accounts.

b. Transparency has been the buzzword in international discussions of the financial crisis. At the G8 conference at Heiligendamm in June 2007, the German delegation strongly pushed for greater transparency in international finance, but was blocked by the Americans and the

British. Now the subject is at the top of the international agenda. This is all to the good, but to ameliorate the present crisis I propose instant transparency. All financial institutions should be required to reveal the face value of their holdings of CDO's within ten days. This would immediately remove the biggest source of uncertainty in the financial system.

c. The simplest, fastest, most cost effective and fairest way to help subprime borrowers and to restore value to subprime mortgages and derived CDO's is to pass a law that would reduce the payments due under these mortgages by some fixed proportion. A reduction in the range of 20-40 percent should be enough to very largely eliminate defaults. The flow of payments under these mortgages would resume with the result that the derived securities would again become as marketable as any other assets. The reduction in their value should be in about the same proportion as the reduction in interest payments. The loss relative to the initial face value would be borne by the financial industry, which is as it should be! Fairness requires the reduction to be retroactive. Since the law would apply only to existing mortgages, no moral hazard is created.

d. Several of the authors cited advocate an injection of funds into the financial sector in return for equity. The proposals have however remained vague. How much is to be injected into a given institution? How is the corresponding equity share to be determined? What role is to be assigned to the funds thus obtained? I make instead a proposal that is completely clear and definite in all of these respects.

My starting point is the article by Telser (2008). He shows that as a consequence of deregulation the ratio of reserves kept by banks against their deposits has effectively declined to zero. I propose that this deregulation should be reversed and that bank should be required to maintain a traditional reserve ratio of say five percent. The government should offer to give them the required funds against equity. The equity shares should be valued at market prices.

e. The above measures would improve the condition of the financial sector and substantially reduce, but not eliminate, the risk of bankruptcy. I don't see bankruptcy as the huge problem that it is generally made out to be. Bankruptcy by itself does not in any way reduce the human and physical resources present in a firm. After reorganization and the installation of a new management, these resources may be more productive than before. Bankruptcy in fact plays a similar role in a market economy as physical death does in biology; there the purpose is to assure the health and survival of the species, here of the market economy.

This proposal is in the spirit of Beim (2008) who wrote:

> A central feature of good bailouts is that the shareholders of insolvent banks are wiped out and their senior management is dismissed. Why? Because these are the people who created the problem, they must be seen to pay a high price. Remember that most banks are conservative, well-run and solvent; only a minority got over-extended.

Conclusion

I reviewed and criticized various proposals to deal with the 'firestorm' of the current financial crisis and advanced several proposals of my own. Equally important is the question of how to construct a new financial architecture that is less prone to such conflagrations. How

well that question is answered and the answer translated into actual policy will significantly impact the evolution of the new century. Stay tuned.

Update

Events are unfolding with great rapidity. The Paulson plan that was center stage when I began to write this note is dead. Beginning with Germany, various countries have initiated large programs in support of the financial sector. These, as well as the revised US program have largely espoused at least in principle the idea expressed in my heading that the programs should at least in principle and in the long run involve no costs to the taxpayers.

One aspect of the German experience is relevant in relation to my proposals. To the surprise and disappointment of the German government, none of the private sector German banks have thus far applied for any part of the aid package. The apparent reason is that no bank wants to bear the onus of being the first to apply for aid. It would have been better to force them to act by mandating a certain level of reserves, as I proposed.

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The Crisis & What to Do About It[1]

George Soros

1.

The salient feature of the current financial crisis is that it was not caused by some external shock like OPEC raising the price of oil or a particular country or financial institution defaulting. The crisis was generated by the financial system itself. This fact—that the defect was inherent in the system —contradicts the prevailing theory, which holds that financial markets tend toward equilibrium and that deviations from the equilibrium either occur in a random manner or are caused by some sudden external event to which markets have difficulty adjusting. The severity and amplitude of the crisis provides convincing evidence that there is something fundamentally wrong with this prevailing theory and with the approach to market regulation that has gone with it. To understand what has happened, and what should be done to avoid such a catastrophic crisis in the future, will require a new way of thinking about how markets work.

Consider how the crisis has unfolded over the past eighteen months. The proximate cause is to be found in the housing bubble or more exactly in the excesses of the subprime mortgage market. The longer a double-digit rise in house prices lasted, the more lax the lending practices became. In the end, people could borrow 100 percent of inflated house prices with no money down. Insiders referred to subprime loans as ninja loans—no income, no job, no questions asked.

The excesses became evident after house prices peaked in 2006 and subprime mortgage lenders began declaring bankruptcy around March 2007. The problems reached crisis proportions in August 2007. The Federal Reserve and other financial authorities had believed that the subprime crisis was an isolated phenomenon that might cause losses of around $100 billion. Instead, the crisis spread with amazing rapidity to other markets. Some highly leveraged hedge funds collapsed and some lightly regulated financial institutions, notably the largest mortgage originator in the US, Countrywide Financial, had to be acquired by other institutions in order to survive.

Confidence in the creditworthiness of many financial institutions was shaken and interbank lending was disrupted. In quick succession, a variety of esoteric credit markets—ranging from collateralized debt obligations (CDOs) to auction-rated municipal bonds—broke down one after another. After periods of relative calm and partial recovery, crisis episodes recurred in January 2008, precipitated by a rogue trader at Société Générale; in March, associated with the demise of Bear Stearns; and then in July, when IndyMac Bank, the largest savings bank in the Los Angeles area, went into receivership, becoming the fourth-largest bank failure in US history. The deepest fall of all came in September, caused by the disorderly bankruptcy of Lehman Brothers in which holders of commercial paper—for example, short-term, unsecured promissory notes—issued by Lehman lost their money.

Then the inconceivable occurred: the financial system actually melted down. A large money market fund that had invested in commercial paper issued by Lehman Brothers "broke the buck," i.e., its asset value fell below the dollar amount deposited, breaking an implicit promise that deposits in such funds are totally safe and liquid. This started a run on money

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market funds and the funds stopped buying commercial paper. Since they were the largest buyers, the commercial paper market ceased to function. The issuers of commercial paper were forced to draw down their credit lines, bringing interbank lending to a standstill. Credit spreads—i.e., the risk premium over and above the riskless rate of interest—widened to unprecedented levels and eventually the stock market was also overwhelmed by panic. All this happened in the space of a week.

With the financial system in cardiac arrest, resuscitating it took precedence over considerations of moral hazard—i.e., the danger that coming to the rescue of a financial institution in difficulties would reward and encourage reckless behavior in the future—and the authorities injected ever larger quantities of money. The balance sheet of the Federal Reserve ballooned from $800 billion to $1,800 billion in a couple of weeks. When that was not enough, the American and European financial authorities committed themselves not to allow any other major financial institution to fail.

These unprecedented measures have begun to have an effect: interbank lending has resumed and the London Interbank Offered Rate (LIBOR) has improved. The financial crisis has shown signs of abating. But guaranteeing that the banks at the center of the global financial system will not fail has precipitated a new crisis that caught the authorities unawares: countries at the periphery, whether in Eastern Europe, Asia, or Latin America, could not offer similarly credible guarantees, and financial capital started fleeing from the periphery to the center. All currencies fell against the dollar and the yen, some of them precipitously. Commodity prices dropped like a stone and interest rates in emerging markets soared. So did premiums on insurance against credit default. Hedge funds and other leveraged investors suffered enormous losses, precipitating margin calls and forced selling that have also spread to markets at the center.

Unfortunately the authorities are always lagging behind events. The International Monetary Fund is establishing a new credit facility that allows financially sound periphery countries to borrow without any conditions up to five times their annual quota, but that is too little too late. A much larger pool of money is needed to reassure markets. And if the top tier of periphery countries is saved, what happens to the lower-tier countries? The race to save the international financial system is still ongoing. Even if it is successful, consumers, investors, and businesses are undergoing a traumatic experience whose full impact on global economic activity is yet to be felt. A deep recession is now inevitable and the possibility of a depression cannot be ruled out. When I predicted earlier this year that we were facing the worst financial crisis since the 1930s, I did not anticipate that conditions would deteriorate so badly.

2.

This remarkable sequence of events can be understood only if we abandon the prevailing theory of market behavior. As a way of explaining financial markets, I propose an alternative paradigm that differs from the current one in two respects. First, financial markets do not reflect prevailing conditions accurately; they provide a picture that is always biased or distorted in one way or another. Second, the distorted views held by market participants and expressed in market prices can, under certain circumstances, affect the so-called fundamentals that market prices are supposed to reflect. This two-way circular connection between market prices and the underlying reality I call reflexivity.

While the two-way connection is present at all times, it is only occasionally, and in special circumstances, that it gives rise to financial crises. Usually markets correct their own mistakes, but occasionally there is a misconception or misinterpretation that finds a way to reinforce a trend that is already present in reality and by doing so it also reinforces itself. Such self- reinforcing processes may carry markets into far-from-equilibrium territory. Unless something happens to abort the reflexive interaction sooner, it may persist until the misconception becomes so glaring that it has to be recognized as such. When that happens the trend becomes unsustainable and when it is reversed the self-reinforcing process starts working in the opposite direction, causing a sharp downward movement.

The typical sequence of boom and bust has an asymmetric shape. The boom develops slowly and accelerates gradually. The bust, when it occurs, tends to be short and sharp. The asymmetry is due to the role that credit plays. As prices rise, the same collateral can support a greater amount of credit. Rising prices also tend to generate optimism and encourage a greater use of leverage—borrowing for investment purposes. At the peak of the boom both the value of the collateral and the degree of leverage reach a peak. When the price trend is reversed participants are vulnerable to margin calls and, as we've seen in 2008, the forced liquidation of collateral leads to a catastrophic acceleration on the downside.

Bubbles thus have two components: a trend that prevails in reality and a misconception relating to that trend. The simplest and most common example is to be found in real estate. The trend consists of an increased willingness to lend and a rise in prices. The misconception is that the value of the real estate is independent of the willingness to lend. That misconception encourages bankers to become more lax in their lending practices as prices rise and defaults on mortgage payments diminish. That is how real estate bubbles, including the recent housing bubble, are born. It is remarkable how the misconception continues to recur in various guises in spite of a long history of real estate bubbles bursting.

Bubbles are not the only manifestations of reflexivity in financial markets, but they are the most spectacular. Bubbles always involve the expansion and contraction of credit and they tend to have catastrophic consequences. Since financial markets are prone to produce bubbles and bubbles cause trouble, financial markets have become regulated by the financial authorities. In the United States they include the Federal Reserve, the Treasury, the Securities and Exchange Commission, and many other agencies.

It is important to recognize that regulators base their decisions on a distorted view of reality just as much as market participants—perhaps even more so because regulators are not only human but also bureaucratic and subject to political influences. So the interplay between regulators and market participants is also reflexive in character. In contrast to bubbles, which occur only infrequently, the cat-and-mouse game between regulators and markets goes on continuously. As a consequence reflexivity is at work at all times and it is a mistake to ignore its influence. Yet that is exactly what the prevailing theory of financial markets has done and that mistake is ultimately responsible for the severity of the current crisis.

3.

In my book *The New Paradigm for Financial Markets*,[*] I argue that the current crisis differs from the various financial crises that preceded it. I base that assertion on the hypothesis that the explosion of the US housing bubble acted as the detonator for a much larger "super-bubble" that has been developing since the 1980s. The underlying trend in the super-bubble

has been the ever-increasing use of credit and leverage. Credit—whether extended to consumers or speculators or banks—has been growing at a much faster rate than the GDP ever since the end of World War II. But the rate of growth accelerated and took on the characteristics of a bubble when it was reinforced by a misconception that became dominant in 1980 when Ronald Reagan became president and Margaret Thatcher was prime minister in the United Kingdom.

The misconception is derived from the prevailing theory of financial markets, which, as mentioned earlier, holds that financial markets tend toward equilibrium and that deviations are random and can be attributed to external causes. This theory has been used to justify the belief that the pursuit of self-interest should be given free rein and markets should be deregulated. I call that belief market fundamentalism and claim that it employs false logic. Just because regulations and all other forms of governmental interventions have proven to be faulty, it does not follow that markets are perfect.

Although market fundamentalism is based on false premises, it has served well the interests of the owners and managers of financial capital. The globalization of financial markets allowed financial capital to move around freely and made it difficult for individual states to tax it or regulate it. Deregulation of financial transactions also served the interests of the managers of financial capital; and the freedom to innovate enhanced the profitability of financial enterprises. The financial industry grew to a point where it represented 25 percent of the stock market capitalization in the United States and an even higher percentage in some other countries.

Since market fundamentalism is built on false assumptions, its adoption in the 1980s as the guiding principle of economic policy was bound to have negative consequences. Indeed, we have experienced a series of financial crises since then, but the adverse consequences were suffered principally by the countries that lie on the periphery of the global financial system, not by those at the center. The system is under the control of the developed countries, especially the United States, which enjoys veto rights in the International Monetary Fund.

Whenever a crisis endangered the prosperity of the United States—as for example the savings and loan crisis in the late 1980s, or the collapse of the hedge fund Long Term Capital Management in 1998—the authorities intervened, finding ways for the failing institutions to merge with others and providing monetary and fiscal stimulus when the pace of economic activity was endangered. Thus the periodic crises served, in effect, as successful tests that reinforced both the underlying trend of ever-greater credit expansion and the prevailing misconception that financial markets should be left to their own devices.

It was of course the intervention of the financial authorities that made the tests successful, not the ability of financial markets to correct their own excesses. But it was convenient for investors and governments to deceive themselves. The relative safety and stability of the United States, compared to the countries at the periphery, allowed the United States to suck up the savings of the rest of the world and run a current account deficit that reached nearly 7 percent of GNP at its peak in the first quarter of 2006. Eventually even the Federal Reserve and other regulators succumbed to the market fundamentalist ideology and abdicated their responsibility to regulate. They ought to have known better since it was their actions that kept the United States economy on an even keel. Alan Greenspan, in particular, believed that giving users of financial innovations such as derivatives free rein brought such great benefits that having to clean up behind the occasional financial mishap was a small price to pay. And

his analysis of the costs and benefits of his permissive policies was not totally wrong while the super-bubble lasted. Only now has he been forced to acknowledge that there was a flaw in his argument.

Financial engineering involved the creation of increasingly sophisticated instruments, or derivatives, for leveraging credit and "managing" risk in order to increase potential profit. An alphabet soup of synthetic financial instruments was concocted: CDOs, CDO squareds, CDSs, ABXs, CMBXs, etc. This engineering reached such heights of complexity that the regulators could no longer calculate the risks and came to rely on the risk management models of the financial institutions themselves. The rating companies followed a similar path in rating synthetic financial instruments, deriving considerable additional revenues from their proliferation. The esoteric financial instruments and techniques for risk management were based on the false premise that, in the behavior of the market, deviations from the mean occur in a random fashion. But the increased use of financial engineering set in motion a process of boom and bust. So eventually there was hell to pay. At first the occasional financial crises served as successful tests. But the subprime crisis came to play a different role: it served as the culmination or reversal point of the super-bubble.

It should be emphasized that this interpretation of the current situation does not necessarily follow from my model of boom and bust. Had the financial authorities succeeded in containing the subprime crisis—as they thought at the time they would be able to do—this would have been seen as just another successful test instead of the reversal point. I have cried wolf three times: first with *The Alchemy of Finance* in 1987, then with *The Crisis of Global Capitalism* in 1998, and now. Only now did the wolf arrive.

My interpretation of financial markets based on reflexivity can explain events better than it can predict them. It is less ambitious than the previous theory. It does not claim to determine the outcome as equilibrium theory does. It can assert that a boom must eventually lead to a bust, but it cannot determine either the extent or the duration of a boom. Indeed, those of us who recognized that there was a housing bubble expected it to burst much sooner. Had it done so, the damage would have been much smaller and the super-bubble may have remained intact. Most of the damage was caused by mortgage-related securities issued in the last two years of the housing boom.

The fact that the new paradigm does not claim to predict the future explains why it did not make any headway until now, but in the light of recent experience it can no longer be ignored. We must come to terms with the fact that reflexivity introduces an element of uncertainty into financial markets that the previous theory left out of account. That theory was used to establish mathematical models for calculating risk and converting bundles of subprime mortgages into tradable securities, as well as other forms of debt. Uncertainty by definition cannot be quantified. Excessive reliance on those mathematical models did untold harm.

4.

The new paradigm has far-reaching implications for the regulation of financial markets. Since they are prone to create asset bubbles, regulators such as the Fed, the Treasury, and the SEC must accept responsibility for preventing bubbles from growing too big. Until now financial authorities have explicitly rejected that responsibility.

It is impossible to prevent bubbles from forming, but it should be possible to keep them within tolerable bounds. It cannot be done by controlling only the money supply. Regulators must also take into account credit conditions because money and credit do not move in lockstep. Markets have moods and biases and it falls to regulators to counterbalance them. That requires the use of judgment and since regulators are also human, they are bound to make mistakes. They have the advantage, however, of getting feedback from the market and that should enable them to correct their mistakes. If a tightening of margin and minimum capital requirements does not deflate a bubble, they can tighten them some more. But the process is not foolproof because markets can also be wrong. The search for the optimum equilibrium has to be a never-ending process of trial and error.

The cat-and-mouse game between regulators and market participants is already ongoing, but its true nature has not yet been acknowledged. Alan Greenspan was a past master of manipulation with his Delphic utterances, but instead of acknowledging what he was doing he pretended that he was merely a passive observer of the facts. Reflexivity remained a state secret. That is why the super-bubble could develop so far during his tenure.

Since money and credit do not move in lockstep and asset bubbles cannot be controlled purely by monetary means, additional tools must be employed, or more accurately reactivated, since they were in active use in the 1950s and 1960s. I refer to variable margin requirements and minimal capital requirements, which are meant to control the amount of leverage market participants can employ. Central banks even used to issue guidance to banks about how they should allocate loans to specific sectors of the economy. Such directives may be preferable to the blunt instruments of monetary policy in combating "irrational exuberance" in particular sectors, such as information technology or real estate.

Sophisticated financial engineering of the kind I have mentioned can render the calculation of margin and capital requirements extremely difficult if not impossible. In order to activate such requirements, financial engineering must also be regulated and new products must be registered and approved by the appropriate authorities before they can be used. Such regulation should be a high priority of the new Obama administration. It is all the more necessary because financial engineering often aims at circumventing regulations.

Take for example credit default swaps (CDSs), instruments intended to insure against the possibility of bonds and other forms of debt going into default, and whose price captures the perceived risk of such a possibility occurring. These instruments grew like Topsy because they required much less capital than owning or shorting the underlying bonds. Eventually they grew to more than $50 trillion in nominal size, which is a many-fold multiple of the underlying bonds and five times the entire US national debt. Yet the market in credit default swaps has remained entirely unregulated. AIG, the insurance company, lost a fortune selling credit default swaps as a form of insurance and had to be bailed out, costing the Treasury $126 billion so far. Although the CDS market may be eventually saved from the meltdown that has occurred in many other markets, the sheer existence of an unregulated market of this size has been a major factor in increasing risk throughout the entire financial system.

Since the risk management models used until now ignored the uncertainties inherent in reflexivity, limits on credit and leverage will have to be set substantially lower than those that were tolerated in the recent past. This means that financial institutions in the aggregate will be less profitable than they have been during the super-bubble and some business models that depended on excessive leverage will become uneconomical. The financial industry has

already dropped from 25 percent of total market capitalization to 16 percent. This ratio is unlikely to recover to anywhere near its previous high; indeed, it is likely to end lower. This may be considered a healthy adjustment, but not by those who are losing their jobs.

In view of the tremendous losses suffered by the general public, there is a real danger that excessive deregulation will be succeeded by punitive reregulation. That would be unfortunate because regulations are liable to be even more deficient than the market mechanism. As I have suggested, regulators are not only human but also bureaucratic and susceptible to lobbying and corruption. It is to be hoped that the reforms outlined here will preempt a regulatory overkill.

—November 6, 2008

Progressive conditions for a bailout[1]

Dean Baker (Center for Economic and Policy Research, USA)

The events of the last month showed the urgency of dealing with the financial crisis. There is a real risk that the banking system will freeze up, preventing ordinary business transactions, like meeting payrolls. This would quickly lead to an economic disaster with mass layoffs and plunging output.

The Fed and Treasury are right to take steps to avert this disaster. While there is an urgency to put a bailout program in place, there are several important issues that Congress should address in the context of bailout.

While there is not time to prepare all the details of the financial restructuring that will follow after the bailout, there can be an agreement on the outlines that this restructuring should take. This list of suggestions is presented in that context:

Principles to Guide the Bailout

1. Financial institutions should be forced to endure the bulk of the losses with taxpayer funds only used where absolutely necessary to sustain the orderly operation of the financial system.

2. The bailout must be designed to minimize the opportunity for gaming.

3. The bailout should be designed to minimize moral hazard.

4. In the case of delinquent mortgages that come into the government's possession, there should be an effort to work out an arrangement that allows the homeowner to remain in her house as owner. If this proves impossible, then former homeowners should be allowed to remain in their homes as renters paying the market rent. This should be done even if it leads to losses to the government.

5. There should be serious efforts to severely restrict executive compensation at any companies that directly benefit from the bailout.

Principles for Restructuring the Financial System

1. Combating asset bubbles must be one of the Fed's key responsibilities.

2. The government should impose a modest financial transactions tax, comparable to the one in the United Kingdom. This can both restrain excessive trading and raise more than $100 billion a year in revenue.

3. Regulatory agencies should require that potentially tradable assets (e.g. credit default swaps) actually be traded on exchanges.

[1] This paper was written on 20 September 2008.

4. There should be strict limits on leverage for all regulated financial institutions.

5. Fannie and Freddie should remain fully public institutions, returning them to a status comparable to Fannie's prior to its privatization in 1968.

6. The Fed should be restructured so that all the key decision makers (e.g. the open market committee) are appointed by democratically elected officials. Its responsibility is to manage the economy in the interest of the general public, not the financial sector.

Given the urgency for passing a bill, Congress should look to enshrine principles in a bailout bill that will allow subsequent legislation to circumvent ordinary procedural issues (e.g. the filibuster in the Senate).

Principles to Guide the Bailout

1. Every effort should be made to ensure that the financial institutions bear absolutely as much of the cost of these bailouts as possible, thereby minimizing the cost to the taxpayer. This is important not just to protect taxpayers. The managers who got their institutions and the country into this housing and financial crisis exercised extremely bad judgment. They should be forced to face the consequences of their actions. Similarly, the shareholders who benefited on the upside of the housing bubble should be forced to experience the downside that resulted from risky investment strategies.

Without details of the plan, it is difficult to say how best to accomplish this task, but one obvious way is to have an equity stake be the price of admission to the auction system. For example, any company could be forced to sell itself to the government in proportion to the assets it puts up at auction. For example, if the government buys $10 billion of its junk-rated mortgage backed securities, then it gets an equity stake in the company of $2 billion. This would also get around the issue of having foreign financial institutions get into the mix. If UBS or other foreign banks want to sell themselves to the U.S. government, they can be given that option.

2. A big part of our financial problems stems from the corruption of the appraisal/rating processes. This occurred both at the level of home appraisals in the mortgage industry and at the level of the bond rating agencies who gave investment grade ratings to mortgage backed securities and derivative instruments that did not deserve this status.

This creates an obvious problem for any reverse auction system of the sort being described by the Treasury. One way that a bank can offload much of its assets at these auctions is to misrepresent the quality of the asset. In other words, if there is a reverse auction for near-investment grade MBS, and a bank offers to sell a large amount of complete junk, that it claims to be near investment grade, then it is likely to be a big winner at the auction.

A way to limit such gaming would be to structure the contracts so that both the companies and their managing executives are personally liable for the subsequent performance of any assets they unload. If the assets perform substantially worse than other assets in the same grade, then they can be sued to make up the difference.

For example, if Citigroup sells $10 billion worth of assets in a particular investment grade, and the loans in this sale end up having a default rate that is 20 percent higher than other loans in the same investment grade, then the government can sue Citigroup and the executives who signed off on the sale to collect the difference, plus some penalty.

This provision can be written so that normal variance would not trigger any action (e.g. if the default rates are 5 percent higher). This will provide a substantial disincentive for the most obvious form of gaming.

3. The bailouts so far have allowed the institutions that took irresponsible risks to fail (e.g. Bear Stearns and Lehman Brothers), while protecting their creditors. This has the effect of punishing the executives and shareholders of these institutions, but allowing those who foolishly lent money (often for high returns) to escape unscathed.

Any future bailouts should also ensure that those who took excessive risks suffer the consequences, but they should also attempt to ensure that creditors exercise better judgment in their loans in the future. One way to do this would be to initially allow the creditors of failed institutions to recoup their funds immediately, but to reserve the right to reclaim some of this money for loans that carried especially high rates of return.

For example, if a creditor had lent Bear Stearns money at a 15 percent interest rate the month before its collapse, there is no reason that the government should fully honor this debt. The lender obviously understood that this was a high-risk loan at the time it was made. Any loan to a failed institution should be subject to such a review, which could result in a demand for a partial repayment to the government. This would only apply to large loans, since there would be little point in scrutinizing a loan for $20,000.

4. The government will inevitably come into the possession of a vast amount of mortgages in various stages of delinquency. The priority in these cases should be to allow people to remain in their homes, not maximizing the return on the mortgages.

This should mean first a good faith effort to negotiate a write-down that makes it possible for homeowners to remain in their house as owners. If this proves impossible, then the next recourse should be to give homeowners the option to remain as renters paying the market rent for the house. Only if the homeowner can neither arrange a new mortgage nor pay the market should the government move ahead with foreclosure procedures. This is a subsidy to homeowners, but it is a relatively small subsidy to people who were often the victims not only of abusive marketing practices by the mortgage industry, but an explicit government policy to push moderate income families into homeownership.

It is also important that renters in foreclosed properties have their rights protected. This should mean, at the least, that any existing leases be honored and also that a reasonable time period be given before a new owner is allowed to carry through with the eviction of tenants.

5. The government can set whatever conditions it wants on participating in the reverse auctions. One of the conditions it should set is that executive compensation be severely constrained at any financial firm that participates. For example, it can set an absolute limit of $2 million in total compensation for any executive at any firm that takes parts in the reverse auction.

Since participation in the auction is completely voluntary, this would make the cap voluntary. Furthermore, there need be little fear about losing good talent, because well-managed firms would not have to participate in the reverse auction.

Restraining compensation on Wall Street will be incredibly important in reversing the pattern of inequality that has developed over the last three decades. The exorbitant compensation packages on Wall Street distorted pay structures throughout the economy.

Executives at non-financial companies looked at the pay on Wall Street and used this as a basis for demanding outrageous pay packages for themselves as well. Presidents of universities often get over $1 million a year, and even top executives at private charities can often earn near $1 million a year. These salaries seem low when compared to their counterparts in the corporate world, but they are outrageous when compared to the pay checks of typical workers. If we can bring about voluntary pay restrain on Wall Street with this bailout, it will be a very big step toward reversing the pattern of inequality that has developed over the last three decades.

Principles for Restructuring the Financial System

1. The Fed must see the combating of asset bubbles as one of its main responsibilities, along with maintaining high employment and low inflation. We are in this crisis because Alan Greenspan chose to ignore first the growth of a $10 trillion dollar stock bubble and then an $8 trillion dollar housing bubble.

The Fed has a wide variety of tools that it can use to rein in bubbles, starting with talk. The Federal Reserve Chair regularly testifies before Congress and frequently speaks in other public forums. The chair can use these occasions to lay out evidence that a bubble exists in a financial asset and to explicitly describe the potential risks to the actors involved.

or example, in 1998 and 1999 Alan Greenspan could have carefully explained that price to earning ratios in the stock market were inconsistent with any plausible projection of corporate profit growth. He could have explained the risks that pension funds and other investors faced from being heavily invested in an over-valued asset.

Similarly, if Greenspan had pointed out in 2002-2006 that house prices had hugely diverged from a 100-year long trend, rising by more than 70 percent in real terms after staying flat for 100 years, then it is likely that many people would have paid attention. He could have also pointed out that many of the holders of mortgage backed securities and derivative instruments were taking very serious risks, since these assets would suffer large losses with a reversal in the housing market.

It is difficult to believe that if Greenspan had made these sorts of explicit warnings, it would not have an impact on the bubbles in the stock and housing markets. Economists and financial analysts can certainly have differing views on the state of the economy, but it would be incredibly irresponsible to simply ignore clearly stated warnings from the Fed.

In addition to the impact of explicit warnings, the Fed also has substantial regulatory authority that it can use to rein in bubbles. The main tool in the case of the stock market is the

margin requirement for borrowing to buy stock. Raising the margin requirement by itself would have little impact (relatively little stock is bought with margin borrowing), however raising the margin requirement would be a clear warning that the Fed views the stock market to be over-valued.

The Fed has more extensive regulatory powers with regard to the housing market. Its failure to use these powers allowed for the proliferation of questionable mortgage practices.

The Fed can raise interest rates to rein in financial bubbles. This is an extremely blunt instrument that also has the effect of slowing the economy and throwing people out of work. For this reason, the Fed should be very hesitant to use higher interest rates as a weapon against asset bubbles. However, in the case of the housing bubble, if the Fed's other tools were insufficient for containing the bubble, it would have been appropriate to raise interest rates to prick the bubble, even at the cost of slowing the economy.

2. Congress should impose a modest financial transactions tax with the explicit purpose of reducing excessive trading and downsizing the financial sector. The financial sector has exploded in size over the last three decades. It accounted for more than 30 percent of corporate profits in 2004. Back in the 1950s and 1960s, the country's period of most rapid growth, the financial sector accounted for less than 10 percent of corporate profit.

The financial sector performs an incredibly important function in allocating savings to those who want to invest in businesses, buy homes, or borrow money for other purposes. But shuffling money is not an end in itself. The explosion of the financial sector over the last three decades has led to a proliferation of complex financial instruments, many of which are not even understood by the companies who sell them, as we have painfully discovered.

The best way to bring the sector into line is with a modest financial transactions tax. Such taxes have long existed in other countries. For example, the United Kingdom charges a tax of 0.25 percent on the purchase or sale of share of stock. This is not a big deal to someone who holds their shares for ten years, but it could be a considerable cost for the folks who buy stocks in the morning that they sell in the afternoon.

Scaled taxes on the transfer of other financial instruments (e.g. a 0.02 percent tax on a trade of an options, future, or credit default swaps.) could go a long way in reducing speculation and the volume of trading in financial markets. Such a tax could also raise an enormous amount of money--easily more than $100 billion a year. This would go a long way toward funding new programs or reducing the budget deficit.

And, this tax would be hugely progressive. Middle-income shareholders might take a small hit; but it would be comparable to raising the capital gains tax rate back to 20 percent, where it was before it was cut to 15 percent in 2003. The real hit would be on the big speculators.

3. Tradable instruments, like credit default swaps, should be standardized and traded on regular exchanges. One of the factors that made the financial system so vulnerable was the proliferation of credit default swaps and other instruments that were not publicly traded. This makes regulation very difficult, since regulators don't have good current information on the volume of these assets. In addition it leaves companies with a large amount of discretion in their accounting for these assets, since they don't have an exchange determined price.

4. There need to be much tighter restrictions on the extent to which financial institutions can leverage themselves. Profit maximization will encourage firms to become as leveraged as possible. In principle, the market should provide discipline, charging high interest to heavily leveraged firms. However, if lenders either exercise poor judgment or assume a government bailout will protect them (as has been the case in this instance), then the market will not by itself prevent excessive leverage.

Any institution subject to regulation should face tight restrictions on leverage. There should be absolute commitment that lenders to any institution not subject to financial regulation will not be bailed out.

5. Fannie Mae and Freddie Mac should remain as public corporations, operating in a manner similar to the way Fannie Mae operated prior to its privatization in 1968. These institutions play an important role in making low-cost mortgage money available nationwide by sustaining a secondary mortgage market. While they operated poorly in the housing boom, making risky loans and becoming overly leveraged, they still acted more responsibly than private issuers of mortgage backed securities, just about all of whom are now out of business.

There will continue to be a role for Fannie and Freddie to provide the anchor of the secondary market, ensuring the operation of a smooth functioning market. Now that they have been taken over by the government, there is no obvious reason to return them to their mixed public/private status.

We usually want the private sector to take the lead in most areas because we expect private entrepreneurs to be more innovative and willing to take risks. However, we really don't want these institutions to be innovative and risk-taking; we want them to carry through the mundane task of buying up and bundling mortgages and selling them in the secondary market. Private financial firms will still have the opportunity to experiment with new instruments insofar as opportunities develop.

Privatization would also lead to much higher pay for the top executives at these firms. The annual compensation for top executives at both Fannie and Freddie ran into the tens of millions, effectively imposing a tax on mortgages.

In short, privatization of Fannie and Freddie simply adds risk and costs. It provides no obvious additional value.

6. The structure of the Fed should be changed so that all the officials with a direct say in monetary policy are appointed by the president and approved by Congress. The Fed is supposed to act in the public interest, not in the service of the financial industry. It is disturbing that the public is being represented in this debate over the restructuring of the financial industry almost entirely by top figures from the financial industry. This would be comparable to having national policy on the auto industry determined by former top officials with the United Auto Workers. It is difficult to believe that the views of Treasury Secretary Paulson and other government officials from the financial industry are not influenced by their long association with the industry.

This problem should not be worsened by giving the banking industry a direct voice in the conduct of monetary policy, by allowing it to appoint Federal Reserve district bank

presidents who take part in open market committee discussions. There should be a strict separation between the conduct of open market policy, which should be done exclusively by people appointed by the president and approved by Congress and the responsibilities of the district bank presidents. The banking industry deserves no special voice in the conduct of monetary policy.

Statement by James K. Galbraith:

before the Committee on Financial Services, U.S. House of Representatives, Hearings on the Conduct of Monetary Policy, February 26, 2009

Mr. Chairman and Members of the Committee, it is again a privilege to appear today at these hearings, which as a member of the staff I worked on from their inception in 1975.

In 1930, John Maynard Keynes wrote, “The world has been slow to realize that we are living this year in the shadow of one of the greatest economic catastrophes of modern history.” That catastrophe was the Great Crash of 1929, the collapse of money values, the destruction of the banking system. The questions before us today are: is the crisis we are living through similar? And if so, are we taking adequate steps to deal with it? I believe the answers are substantially yes, and substantially no.

This statement covers six areas very briefly:

Why the baseline forecast is too optimistic, and why the recovery bill was too small.
Why low interest rates will have limited effectiveness going forward.
Why the banking plan will not work.
Why Social Security and Medicare are not part of the problem, but of the solution.
How to keep people in their homes, and
Why our long-term infrastructure and energy needs should be addressed now.

1. The baseline forecast is too optimistic and the recovery bill was too small.

In early February the CBO baseline projected a “GDP gap” averaging about six percent over the next three years (Table One). They also expect a recovery beginning late this year and a return to normal by 2015. That was the baseline: the forecast even if the ARRA [American Recovery and Reinvestment Act of 2009} had not passed.

The baseline rests on a mechanical assumption: that there is a “natural rate of unemployment” of exactly 4.80 percent. The assumption is that labor-market adjustments will return us to this rate over time. By labor-market adjustment, economists usually mean a fall in real wages, sufficient to make workers more attractive to employers.

This assumption is unfounded. No fall of wages will restore employment. Employment does not depend materially on wage rates, but on the prospect for sales and profits. And these require credit. Flow-of-funds data for December show that the fall-off in new borrowing is the greatest in 40 years. The Levy Institute’s accounting-based macro model, based mainly on the rate at which households are liquidating their debts, now suggests that the GDP gap will be as much as 12 percent of GDP, with no recovery in sight. This is shown in Figure One. This gap is compatible with unemployment rates near ten percent, indefinitely.

The ARRA should add between 2 and 3 percent to total demand, per year for two years. With normal multipliers (about 1.5 for spending) the total boost to GDP might be between 3 and 5 percent. This would be enough to turn a baseline recession averaging 6 percent into something quite mild. But if the true collapse is twice as bad, the stimulus was

too small. And the multipliers are probably overstated, because in a deep crisis liquidity preference grows stronger. A 12 percent GDP gap might require a stimulus of, say, 10 percent including automatic stabilizers to cope with it. The bill as enacted was far short of that.

Chairman Bernanke, in his speech at London in January, said “the global economy will recover.” He did not say how he knows. And the truth is, this is merely a statement of faith. In present conditions the most dangerous position is that of the unfounded optimist. Those who use this position to defend a program of inaction, or of little action, or to defend a program of action that is geared to a forecast of automatic recovery, might possibly turn out to be right. There might be a deliverance. But to rely on that possibility in the design of policy is surely unwise, for at least two reasons.

First, we know that bad news has been outrunning the forecasts for months. Professional economists, working with the normal models, failed to predict the crisis. In many important cases, including high officials, they actively denied it could happen. Chairman Bernanke was typical: through July of 2007, he argued that the Federal Reserve Board’s predominant concern was inflation; thus the Federal Reserve was unable to give Congress a foretaste of a crisis that was to erupt within days. And as the crisis has unfolded, events have repeatedly come in worse than expected or caught us by surprise. This should tell us something.

Second, we know that the origins of the crisis lie in a breakdown of the banking and financial system, following a breakdown in the regulation of mortgage originations, in underwriting, and in credit default swaps. This is something we have not seen in our lifetimes. We know that the actions already taken in response – the TARP [Troubled Asset Relief Program]**,** the nationalization of the commercial paper market and the swap agreements with the ECB and other central banks – are unprecedented. We know that these measures have, at best, only averted a deeper catastrophe. And we know that the baseline forecast, which is a mechanical procedure based on statistical relationships between non-financial variables, for the most part, takes none of this into account.

We therefore have no basis for confidence in the baseline forecasts, and we should prepare ourselves, as Churchill said to Parliament at the time of Dunkirk, “for hard and heavy tidings.”

2. Monetary policy alone cannot restore growth and employment.

Chairman Bernanke deserves respect for his forceful interventions since the crisis broke. A failure, last October, to nationalize the commercial paper market would have been disastrous. Increasing deposit insurance limits warded off a run on the banks. The extension of currency swap agreements to Europe and elsewhere helped stabilize global markets temporarily, though there is a grave question, as to whether those swaps can be unwound.

I also supported this Committee’s version of the TARP, despite its limitations. At that time, a collapse of the payments system in the last months of a dying presidency was to be avoided at all costs. And the most unworkable idea in TARP, the outright repurchase of bad assets at inflated prices, was abandoned in favor of a step – the purchase of preferred equity in banks – that was possibly unnecessary but not the worst that might have happened.

Despite the fact that these steps were able to ward off complete disaster, monetary policy today has little power to restore growth. In the Depression they called it “pushing on a string.” With interest rates already at zero, there is little more the Federal Reserve can do. Chairman Bernanke’s London speech grasps at a number of straws, including “policy communication” and the reduction of long-term interest rates. But the former is a weak reed and the latter is of very doubtful effect in a liquidity trap. If rate cuts do not lead to new borrowing – as they have not – then their effect is actually counterproductive, since they reduce the interest income flowing to the elderly and others who hold the national debt, or (what is the same thing, economically) cash and cash-equivalents in the banks.

The phrase “quantitative easing” – or in Chairman Bernanke’s formulation, “credit easing” – is often heard these days. What does it mean? Not much, in my view. Can it be relied on to produce a return to economic growth? No. Credit easing, at its heart is about liquidity – a problem monetary policy can deal with. But the problems of the economy go far beyond liquidity. Chairman Bernanke’s discussion of “heterogeneous effects” --the supposed differences between lending to banks, to the commercial paper market or elsewhere, strikes me as a keen example of wishful thinking. It is unlikely that the Federal Reserve can, merely by making judicious distinctions, materially reduce the perception of risk in these markets and therefore the credit spreads that are strangling them today.

The deeper problem obviously lies in the lack of demand for output, in the collapse of confidence, in the grim prospects for profit, and in the absence of collateral to support new loans. These problems will require much more work – work to persuade the public and the business community that effective, long-range, sustained, visible action is underway. The Federal Reserve is not the agency that can persuade the world of this.

Thus, in this situation the main responsibility for pulling the ox from the ditch is not Chairman Bernanke’s. Let me turn next to the question of whether Secretary Geithner’s plan to restart the “flow of credit” can take up the slack.

3. The bank plan will not work.

The scale of the ARRA was predicated on the baseline and also on the idea that lending by the banking sector can be made to return to normal. That is, it assumed, implicitly, that Secretary Geithner’s plan for the banks will succeed. So we must ask, will it?

The bank plan appears to turn on a metaphor. Credit is “blocked” or “frozen.” It must be made to “flow again.” Take a plunger to the toxic assets, a blowtorch to the pipes, it's said, and credit will flow. This will make the recession essentially normal, validating the baseline forecast. Add the stimulus to a normalization of credit, and the crisis will end. That's the thinking, so far as I can tell, of the Treasury department in this new administration.

But common sense begins by noting that the metaphor is wrong. Credit is not a flow. It is not something that can be forced downstream by clearing a pipe. Credit is a contract. It requires a borrower as well as a lender, a customer as well as a bank.

The borrower must meet two conditions. One is creditworthiness, meaning a secure income and, usually in the case of a private individual, a house with equity in it. Asset prices

therefore matter. With a chronic oversupply of houses, prices fall. Collateral disappears, and even if borrowers were willing many of them would not qualify for loans.

The other condition is a willingness to borrow, motivated by the "animal spirits" of business enthusiasm or just the desire for more worldly goods. In a slump such optimism is scarce. Even if people have collateral, they want cash. And it is precisely because they want cash that they will not deplete their reserves by plunking down, say, a down-payment on a new car.

The "credit-flow" metaphor implies that people came flocking to the auto showrooms last November and were turned away because there were no loans to be had. This is not true. What happened was that people stopped coming in. And they stopped coming in because, suddenly, they felt poor, uncertain and afraid.

In this situation, stuffing the banks with money will not change their behavior. Banks are not money-lenders. Banks are money-creators. They do that by making loans. And the bank chiefs have made it very clear, in testimony here and elsewhere: they will not return to ordinary commercial, industrial and residential lending until they can see a reasonable way to make money at it. If given the chance, they may go off on another bender in commodities or some other quick way to repair losses. More likely, they will hunker down, invest in Treasuries and prime corporate bonds, and rebuild capital for the long-term, as they did from 1989 to 1994. Only this time, with the yield curve as flat as it is and the insolvencies as deep as they are, it could take a decade or longer.

Seen in this light, the latest version of the plan to remove bad assets from the banks' balance sheets is a costly exercise in futility. It will protect incumbent management, for a time. It will keep the equity values above zero, for the benefit of those who did not sell their shares when they were high and those who now speculate on a public rescue. It will do this at the expense of driving public debt, as a share of GDP, to very high levels. But there is no reason to believe that the "flow of lending" will be restored, nor that banks which long ago abandoned prudent and ordinary lending practices will now somehow return to them, chastened by events. Why should they change behavior, if their losses are in effect guaranteed by the Treasury Department?

The Treasury plan, if put in place as described, would have a perverse effect on the distribution of wealth. To guarantee bad assets at rates above their market value is simply a transfer to those who hold those assets. It would enable them to convert those assets, sooner or later, to cash. The plan would thus preserve the wealth of bank insiders and financial investors, while failing to prevent the collapse of the wealth of almost everyone else. I cannot believe that the American public will tolerate this, for very long.

There is an argument, made by those who would suspend mark-to-market accounting, that the true value of the mortgage-backed securities has been depressed by fire-sale conditions, and that a guarantee would help to restore confidence and would be validated, in changing economic conditions, by improved performance of the loans. This is something that does, in fact, sometimes happen: good loans go bad in bad times, but become good again when conditions improve. But it is not an appropriate argument for the current case.

Why not? Because the sub-prime securities that are at the bottom of this problem were, and are, in very large measure, corrupt, abusive and even fraudulent from the very beginning. They should never have been issued, and they should never have been securitized, and the ratings agencies engaged in fraud, on the face of it, by giving them AAA ratings in certain configurations, without actually inspecting the loans. No private buyer, with responsibility to do due diligence on these loans, will ever purchase them simply because due diligence is going to reveal the truth. So far as we know, the loans, almost uniformly, lack documentation or show prima facie evidence of fraud or misrepresentation. The ratings agency Fitch so determined, when it reviewed just a small sample of loan files in 2007: there was fraud or misrepresentation in practically every file. The default rates on these loans will be very high no matter what happens. It is only a matter of time. Therefore, there is no reason to think that the Treasury's guarantees, at any price above the market price, are likely ever to be made into a profitable investment by changing economic conditions.

Finally, one has to worry about the long-term consequences of issuing new public debt just to wash away the sins of the banks. Those in the larger world who have, in the past, trusted the transparency, efficiency and accountability of the U.S. financial system – and have therefore been willing to treat the US as a haven of financial safety and stability – are bound to take note. It can't be good for the long-term reputation of the government, and therefore for the long-term stability of the dollar. Moreover, while there is no reason to treat these asset exchanges as new public spending, it is certain that adding ten or twenty percent of GDP to the public debt (fruitlessly) will complicate the political problems associated with the effective fiscal expansion measures that getting out of the crisis may require. In short, the Treasury plan will not achieve its stated goals, and meanwhile risks both triggering inflation and obstructing growth.

If we are in a true collapse of finance, our models will not serve and our big banks will not serve either. You will have to replace them both. Since several very big banks are deeply troubled, there is in my view no viable alternative to placing them in receivership, insuring their deposits, replacing their management, doing a clean audit, isolating the bad assets. Since these banks were clearly too large, in my view they should be broken up, and either sold in parts or relaunched as multiple mid-sized institutions with fresh capitalization and leadership.

And meanwhile, how do we keep the economy running? There should be a public bank to provide the loans to businesses – small, medium and large – sufficient to keep them running through the crisis. This was the function, in the Depression, of the Reconstruction Finance Corporation. While the need for this today is very clear in the automotive sector, as time goes on a much larger part of American industry and commerce will face similar problems and similar needs. The resulting forced liquidation of the productive sector is a distinct possibility, and is not in our national interest.

4. Social Security and Medicare are not the problem.

A repeated theme from certain quarters holds that the financial meltdown is only a side-show, that the real "super sub-prime crisis" is in the federal budget, and that the most urgent need today is "entitlement reform," which is code for cutting Social Security and Medicare, in the guise of saving those programs. Some of this was heard earlier this week at the White House meeting on "fiscal responsibility."

These arguments are both mistaken and dangerous.

By long-standing political convention Social Security and Medicare are attached to designated funding streams – portions of the payroll tax. It was the original intent that Social Security benefits would be largely matched by these taxes, but this was never true for Medicare, and as the aging population grows and lives longer it has become contentious for Social Security as well. Thus we have frightening estimates of "unfunded liabilities" running to the scores of trillions of dollars over long or infinite time horizons, with dire warnings that these will drive the entire government of the United States into bankruptcy, whatever that means.

These arguments are testimony to the power of accounting to cloud men's minds, and not much else. Let me make some obvious points.

First, a transfer program reassigns claims to output. It neither creates nor destroys production. What comes from somewhere, goes somewhere else. Thus Social Security liabilities to the government are matched by assets in the hands of the aged and those who will become aged that is to say, in the hands of citizens of the country. From the standpoint of the country, the two sides of the balance sheet necessarily balance. Talk about "unfunded liabilities" without discussing the corresponding assets is intrinsically misleading: the liabilities in question are owed to citizens of the United States, and represent to them a very modest degree of income security and as well as access to medical care in old age.

There is no operational reason why the country cannot transfer income to its elderly, as a group, as much or as little as it wishes. The supposed inter-temporal aspect of this transfer is meaningless, for two reasons. First, the goods and services actually provided to the elderly at any point in time are always produced only shortly before they are used. Second, the workers on whom the liabilities supposedly fall today, are the same people who accrue the assets that they will enjoy later. It is true that Social Security's real burden will rise as the population ages: from about 4.5 percent to about 6.5 percent of GDP over the century ahead. There is no reason to be afraid of this, it is simply the mechanical consequence of the fact that there will be more old people to care for. Those people would exist, and would be cared for to some degree, without Social Security. But the process would be much more erratic, much less fair, and subject to the neglect and petty cruelties of private financial relations.

The only issue posed by a deficiency of payroll taxes, now or later, is whether the funds devoted to Social Security and Medicare might be described as coming, in part, from other sources: from the wealthy, or from bondholders. So what if they are? There is no reason in principle why income or estate taxes (as the late Commissioner Robert Ball suggested), or a financial transfer tax, could not be assigned to cover Social Security and Medicare costs. The Social Security compromise of 1983, which raised payroll taxes on my generation, plainly envisaged that the obligations to cover my generation's retirement would come, in due course, from somewhere else. That is what "paying back the Trust Fund" is all about.

Part of the worry about "entitlements" relates to borrowing, and thus to future deficits. Are these "unfunded liabilities" so large as to threaten the creditworthiness of the government? Clearly this is not the case. Despite immense efforts by the gloom-and-doom chorus on this question, the government of the United States is today funding itself, long term,

for less than it did in the 1950s. Solvency was not a question then and is not a question now. This also suggests that the long-term deficit projections for the government as a whole, though much discussed at the fiscal responsibility summit, are not a worry for the financial markets, either.

The preoccupation with Social-Security-and-Medicare is actively dangerous to the prospects for economic recovery. Why? Because it raises concern and anxieties among today's working population, who have been told repeatedly that these programs will not be present for them when they will need them. The rational individual response, in that case, is to save more and spend less. I don't think this effect is very large, right now, but it is a risk. There are cases in the world (notably in China) of distressed populations over-saving obsessively, to try to provide for security that could be provided much more cheaply by social insurance.

More immediately, our elderly population is under a tremendous squeeze, from the stock market collapse, from falling house prices and from falling interest rates. It has already lost, through these channels, a major part of its wealth. The economist Mark Zandi told the House Democratic Caucus in December that this alone could subtract around $200 billion per year from total spending, and the situation is worse now than it was then.

Talk about the supposed need to cut back on Social Security and Medicare thus gets in the way of the discussion we should be having. This is over how to use these programs to get us out of the hole we are in. Each them could be powerful and useful. To wit:

- a permanent increase in Social Security benefits would help offset the losses that the elderly population, as a group, is suffering on its equity investments and its cash holdings. A thirty percent increase in Social Security benefits would not repair individual losses, but it would keep the elderly out of poverty as a group, and relieve severe difficulties in many individual cases.

- a payroll tax holiday would powerfully ease the financial situation of America's working families, giving them roughly an 8.3 percent pay increase and their employers a comparable reduction in the cost of keeping them on the job. Many mortgages would be paid, and many cars purchased, that otherwise would default or go unsold.

- a reduction in the age of eligibility for Medicare would be a powerful response to the industrial crisis, permitting many older workers who would like to retire but who cannot afford to lose health insurance to do so. This would relieve health burdens from private industry, while not infringing on the employer-insurance systems still in effect for the prime-age workforce. Note that transferring workers from private health care to Medicare in this age bracket has no real economic cost: the same health care is provided to the same people. In fact, the reduction in private insurance claims and bookkeeping constitutes a real saving.

These measures are among the most promising available at this moment. Congress should be prepared to use them if and when it becomes clear that the present policies are insufficient. And the historical linkage between Social Security and Medicare benefits and the payroll tax should then be broken. Social Security and Medicare obligations should be treated, henceforward, as simply the bonded obligations of the government – like net interest,

backed by the full faith and credit – thus making explicit what is obvious to any careful observer, which is that these programs cannot go “bankrupt” anymore than the government of the United States can go bankrupt, which it cannot.

And of course the United States Government has not gone bankrupt, in more than two centuries of continuous operations and through much bigger deficits and greater trials than we are experiencing just now.

5. Keep people in their homes.

The housing crisis is at the root of our difficulties, for since the Tax Reform Act of 1986 our economy has been strongly biased toward collateralizing lending with homes. This model, which built up a structure of debt over a very long period of time, has now collapsed. It has collapsed, moreover, in ways that not only have destroyed the market for sub-prime securities, but that also have compromised secondary markets for prime mortgages.

There is no way for public policy to stabilize housing prices as such in the near term. House prices are private contracts for idiosyncratic goods, and cannot be controlled. Therefore, policy must focus on the proximate problem, which is chronic excess supply. The only way to do that, short of buying up surplus homes and knocking them down, is to find a means to stop the wave of evictions, vacancies, trash-outs and forced sales that is overwhelming the system.

In economic terms the problem is simple: how to align, in a way that is fair and sustainable, the payments people are required to make on their houses with their actual capacity to pay? But there is a corollary which is not so simple: how to do so in ways that do not encourage irresponsible behavior on the part of homeowners who are not in trouble?

The administration’s plan of action in the housing sphere is a bright spot on the policy horizon. It meets, so far as I can tell, the tests of fairness and sustainability reasonably well. But it does so only for a limited class of borrowers, who are not too deeply underwater already on their homes. It will provide a measure of relief, but it will not, so far as I can tell, either stop the wave of foreclosures or prevent a continued decline in prices.

There are, I think, two basic alternatives that might work. One would be to declare a comprehensive moratorium on new foreclosures, and then to turn over the entire portfolio of troubled mortgages to an entity like the depression-era Home Owners Loan Corporation for triage and renegotiation on a case-by-case basis. The advantage of this approach is that, if done on a large enough scale, it would work. An HOLC could distinguish honest from fraudulent borrowers, fit legitimate homeowners into appropriate work-out categories, and manage or dispose of the properties of the rest. Meanwhile people would enjoy a presumptive right to stay in their homes. The difficulty is that this would take a long time and a lot of money and manpower, and the system would still be prone to manipulation, at least to some degree.

An alternative, suggested by Warren Mosler, is to allow the ordinary foreclosure process to work. But, after foreclosure, owner-occupied properties would be bought at the lower of the appraisal price or mortgage balance by a new federal entity, and the previous owner allowed to stay in the house for a fair market rent, with the option of repurchasing the

home at a fair appraisal value later on. This would have the advantage of protecting against moral hazard, while at the same time preserving occupancy, to the maximum extent possible.

6. The long term starts now: infrastructure, energy and the dollar.

Finally, though these remarks depart from the realm of monetary policy in a strict sense, it is important to make them briefly.

First, no recovery program will work unless crude oil imports in the upswing are effectively curtailed. Failure to do this simply leaves the power to set oil prices in the hands of speculative markets and the swing producers – Saudi Arabia and possibly Russia. This is the channel that poses the most serious inflation risks going forward.

Second, a growing economy down the road will need new focal points for public and private investment. Infrastructure and energy are clearly the great challenges ahead: infrastructure because this vital contributor to efficiency and competitiveness has been severely neglected for decades, and energy because of the danger of climate change. The correct approach to infrastructure remains a National Infrastructure Fund – a permanent facility that can provide funds to state and local governments and to regional authorities independently of market conditions, while serving as a source of standards and providing a measure of oversight.

Third, energy conservation and the production of sustainable energy are areas with potential for great gains; since the United States is the world's greatest per capita greenhouse gas emitter we have the capacity to make the largest improvements. But there is also the potential here for economic gains: if we do this job right, we can develop new industries which will set standards for efficient and sustainable energy production and use, and reduce our trade deficits, over time, both by curbing imports and by exporting these new products to the world. These new industries will help sustain the international position of the dollar in the long run.

For the time being, the world crisis has revealed the relative strength of the dollar and the structural weakness of the euro and of other major currencies. This situation, which has surprised many, removes the concern that the dollar will lose its reserve status – at least for the moment. But it awakens an equally serious danger, which is that instability between world currencies could produce a cumulative spiral of global economic collapse. This is an important danger, for which we are ill-prepared. There needs to be a new attention to the financial architecture, both to achieve a coordinated fiscal expansion and to admit the serious possibility of an even larger crisis, preparing for the moment when major reforms may be required.

The time to start work on all of these issues is now. Let's face it. We are not in a temporary economic lull, an ordinary recession, from which we will emerge to return to business-as-usual. We are at the beginning of a long, profound, painful process of change. Of irreversible change. For better or for worse. We need to start thinking and acting accordingly.

Thank you very much for your time and attention.

Table One. CBO's Baseline Forecasts, February 11, 2009, from a letter from Douglas Elmendorf, Director, to Senator Judd Gregg

Table 1.

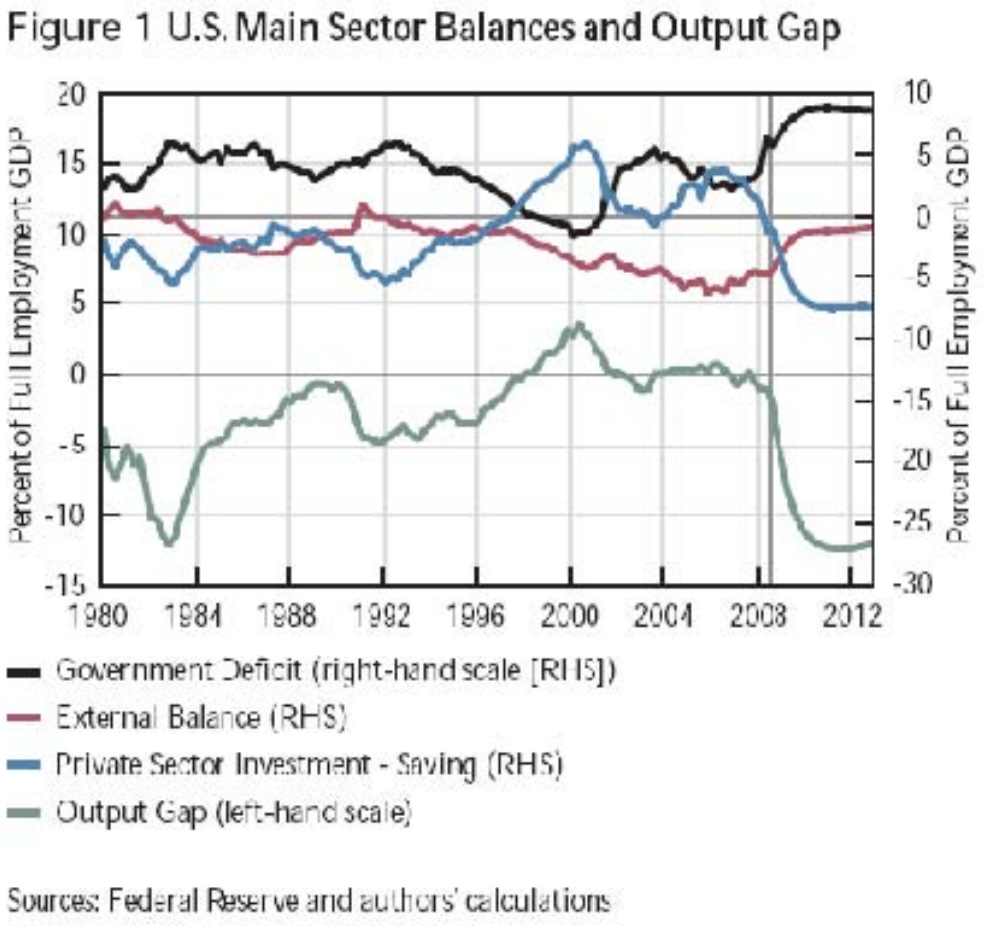
Estimated Macroeconomic Impacts of a Stimulus Package (Average of House-Passed and Senate-Passed Versions of H.R. 1), Fourth Quarters of Calendar Years 2009 Through 2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Real GDP (Percentage change from baseline)											
Low estimate of effect of plan	1.4	1.1	0.4	0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
High estimate of effect of plan	3.8	3.3	1.3	0.7	0.4	0.3	0.0	0.0	0.0	0.0	0.0
GDP Gap[a] (Percent)											
Baseline	-7.4	-6.0	-4.1	-2.2	-0.7	-0.1	0.0	0.0	0.0	0.0	0.0
Low estimate of effect of plan	-6.2	-5.3	-3.7	-2.0	-0.6	-0.1	0.0	0.0	0.0	0.0	0.0
High estimate of effect of plan	-3.9	-3.2	-2.9	-1.7	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Unemployment Rate (Percent)											
Baseline	8.0	8.7	7.5	6.4	5.5	5.0	4.8	4.8	4.8	4.8	4.8
Low estimate of effect of plan	8.5	8.1	7.2	6.3	5.4	5.0	4.8	4.8	4.8	4.8	4.8
High estimate of effect of plan	7.7	6.8	6.5	6.0	5.3	4.9	4.8	4.8	4.8	4.8	4.8
Employment (Millions of jobs)											
Baseline	141.6	143.3	146.2	149.3	152.1	153.9	154.9	155.7	156.1	157.0	157.7
Low estimate of effect of plan	142.4	144.5	146.8	149.6	152.2	154.0	154.9	155.7	156.4	157.0	157.7
High estimate of effect of plan	143.9	146.0	148.1	150.1	152.5	154.2	154.9	155.7	156.4	157.0	157.7

Source: Congressional Budget Office.

a. Real GDP is gross domestic product, excluding the effects of inflation. The GDP gap is the percentage difference between gross domestic product and CBO's estimate of potential GDP. Potential GDP is the estimated level of output that corresponds to a high level of resource (labor and capital) use. A negative gap indicates a high unemployment rate and low utilization rates for plant and equipment.

Figure One. The Output Gap: Levy Institute Strategic Analysis, December 2008.



The triumph – and costs – of greed *(Part I)**

Clive Dilnot [The New School, USA]

Problems of cause and consequence

The events of summer and fall 2008 have shown with stark clarity that the modes of accumulation pursued across the banking industries —not only, but particularly those of the US and UK—were so deeply flawed, so toxic in their consequences, that they call into question the fundamentals of the economics on which they were based. Yet to date there is precious little evidence of any fundamental rethinking, either in the industry or by the economics profession,—much of which still seems in denial about the character and gravity of the present crisis. With few exceptions, the argument from all sides—and from most in politics too—is for a return to business as usual as quickly as possible.

It is not difficult to see why this should be so. Crises of this scale, in opening severe uncertainty, call forth two contradictory impulses. The first is towards action. What was unthinkable may suddenly become, in heat of the moment, the applauded, bold and essential action of government. Such was, briefly, the response last September to the threat of a complete collapse of the banking system.[1] But hard on the heels of the impulse to act comes reaction, the adamant re-assertion that everything must, in the end—and preferably as quickly as possible—be just as it was before.

This was the surely the sentiment that lay behind the open letter sent to Congress by 166 economists in late September. Labeling the crisis as merely a 'short-run' disruption, the impulse to preserve what-is *at all costs* was captured in its central premise, that "for all their recent troubles, America's dynamic and innovative private capital markets have brought the nation un-paralleled prosperity. Fundamentally weakening those markets in order to calm short-run disruptions is desperately short-sighted."[2] What was sharply evident in this letter, as well as in the series of statements by a number of economists across the fall that followed this line, was that denial of the depth of the crisis was not based on an analysis of what was occurring but was rather introduced a priori as defense against change—on the obvious grounds that if you can deny that there is anything rotten in the state of Denmark then you obviate the need for action.

This desire for the earliest possible return to the status quo has significant implications for policy. Take how we are dealing (or failing adequately to deal) with the bank "bail-outs".

Lack of acceptance of the true state of the financial sector,[3] which is one side of the premature desire for restoration of what-was, goes along with its other—i.e. the policy failure to develop the necessary strategies to re-structure their operations (e.g., to address counter-productive incentive structures,[4] and more fundamentally to *compel* banks to withdraw from speculative trading in areas where they cannot assess risk)[5] is creating the conditions for a perpetuation of unacknowledged insolvency which has grave dangers for the revival of the economy as a whole. In this case the desire for continuity is overwhelming the necessity for structural action.[6] Are we then surprised that the policy of pumping money into the banks is taking on the character of pouring resources into a bottomless pit?[7]

The desire for the axiomatic restoration of what-is bears also on explanation. It is already clear that the kind of stories that we are beginning to tell ourselves concerning the causes and nature of the crisis are in fact centrally concerned to account for what occurred in ways that make possible a smooth return to the status quo. Even among liberal economists the preferred mode is to locate "cause" in the operations of the market, i.e. to have the faults be operational rather than fundamental.[8] On one level this is not surprising. If cause can be identified in an operational failure it can be rectified. Since it is essential that, whatever else happens, such failures *are* rectified there is a point to this. No surprise then that there is an impulse to seek cause in what can be quickly (and relatively painlessly) transformed. It was telling in this respect that Jeff Madrick concluded a recent analysis of the crisis by noting: 'Financial market participants created a financial bubble of tragic proportions in pursuit of personal gain. But the deeper cause was a determination among people with political and economic power to minimize the use of government to oversee the financial markets and to guard against natural excess.'[9]

Madrick is surely correct in his observation as to the importance of abdication of responsibility for oversight of these markets. The absence of regulation (and more the deliberate creation of that absence) is a significant aspect of the irresponsibility that ran through the operations of the financial markets, though it is by no means the only factor. But is it causal? Lax or non-existent regulation *enables* a market to operate in ways that are structurally irresponsible, but can it *alone* be causal with respect of the depth of the crisis we are now facing?

This is not an idle question, and on several grounds. Without adequacy in explanation—that is without facing up to the factors producing the crisis—policy will likely remain a band-aid at best. At worst it will not only contribute little to solving the crisis, it may even ensure inadvertent translation of the situation into a longer-term social and political as well as economic disaster.[10] The problem of the reparative instinct in this respect—both in policy and in intellectual terms—is that it cuts off questioning too soon and does not get to the generative heart of the matter. The analytical issue here is to distinguish levels and types of cause. A simple example: the absence of sufficient lifeboats and the absence of a common-practice of 24hr-manned radio facilities in ships crossing the Atlantic in 1912 were both major *contributing* factors to the death-toll in the sinking of the Titanic. But they were not *causal* in respect of the initial impact with the iceberg, nor do they bear on the insufficiently understood vulnerability of the Titanic to certain types of flooding of its hull. In other words, all these moments were causal in respect of the scale of disaster, but not in the same way. Of course the line between what we might call contributing or enabling causes ('conditions of existence' for the crisis) and what we might call direct or generative causes (active cause) is a fine one and never in practice easily differentiated.

Nonetheless with respect to this crisis we can talk of enabling and generative causes. The first are those conditions which must to be in place for the markets to operate in the way they did. Lack of regulation is one of them; permission to leverage deposits in relation to loans is another; liquidity and the easy availability of capital is obviously essential, as is (in my view of central importance) the political tolerance and even encouragement of unprecedented levels of debt in, both in total (for the US 350% of GDP, or c$42bn, equal to not far short of 85% of pre-

crisis world GDP) and particularly in household debt (100% GDP) and—even more telling—financial sector debt (c.117% GDP in 2007 up from c.20% of GDP in 1980) is yet another.[11]

The second group, 'generative causes,' can be described less as conditions and more as forces. But this is where we run into a problem, for as one looks at the explanations given for the collapse one senses not only the desire to latch onto a "fault," or an identifiable single cause ("Greenspan!"; "Regulations!") but avoidance, a marked reluctance to consider the *active* causes of the crisis. It is telling in this respect that as successive ways of naming the crisis and of offering explanations have been given—it was a housing crisis; it was a crisis caused by defaulting sub-prime mortgage owners; a crisis of the sub-prime mortgage sector; a crisis of operational failures in the shadow-banking and mortgage industries; a crisis induced by lax or non-existent regulation in the financial sector, a crisis of market hubris, even a crisis of inept government[12]—realization has come that the crisis-inducing potential of the named factor could not possibly match the depth of what has transpired. No housing crisis induces a credit-crunch; defaulting mortgagees could not possibly bring down a banking sector; a market collapse equal to 1/6th of US GDP does not itself create a global recession.

This touches on a general rule: attributed cause has to have the capacity—singly or in conjunction—to induce consequence. In the case of this crisis we know that the primary *trigger* was the successive and eventually almost complete failure of the shadow-banking mortgage brokers and debt-encumbered banks beginning from December 2006. The underlying *enabling conditions* have to do with the circumstances and mores that let those markets come into being, and which allowed the banks to operate in the distinctive ways that eventually induced disaster. These are the circumstances we can indentify with some ease. The trick is giving them the correct weight and placing them in the pattern of conditions and circumstances that underlay the collapse.

But these circumstances and conditions are scarcely dynamic. They are taken up, they become significant in their *use by* forces. We move towards the *active causes* then when we begin to think about the axioms and forces that drove the market. For example, the erroneous belief that a market driven wholly by and working as a force for short-term accumulation can (and should) be self-regulating and will naturally reproduce that ideal of competitive equilibrium. As a motivation and a legitimation for action this is not insignificant in the crisis.

But even belief pulls back before force. If we want to know the active force in the markets, and thus the forces behind the collapse—the forces therefore with which we have to contend in long-term policy terms— we have to look at what drove these markets. What drove them was unleashed financial accumulation based on the effective privatization and private organization of the banking sector and the credit- and debt-systems.[13] Such accumulation cannot but be blind to consequence and cost, and it cannot be other than systemically unstable.[14] This means that *irresponsibility is a determining and structural characteristic of the modes of accumulation we have now sanctioned*.

It is not easy to deal with this. It means giving *systemic* weight to Madrick's first point, that 'Financial market participants created a financial bubble of tragic proportions in pursuit of personal gain.' The difficulty of doing this, of translating subjective drive into objective structures and mechanisms of accumulation and collapse is not easy. The question of 'personal gain' sits uncomfortably in modern economic discourse. That it does so is surely not

unconnected with the difficulty of accepting over the last decades that the processes of financial wealth-creation have been transposed to become primarily structures of wealth-diversion, dispossession and extraction. It is the implications of this that are now in question.

This paper tries to address this question of active cause. It looks at the structure of accumulation that developed on Wall St and in the City and it analyses the problems of the operative logic of this 'temporary growth regime' and its costs and consequences—cognitive one might add, and moral, as well as economic. In particular it tries to look at this (disastrous) mode of accumulation not in terms of universal 'laws' but in terms of forces, of the dynamics of accumulation, coming out of and responding to particular economic and political conditions and resulting in a 'growth regime' that is un-precedented in certain of its features and by no means understood, even by its principal actors (and let alone by economists).

The paper begins this analysis from the issue of continuity, from the question of whether continuity in the operation of markets is what we want, need or *can afford*. The motif through which this is approached is the question of crime. This issue of what we can afford gives the paper its second thrust, which is to ask about the true costs of doing business. I am taking it that this question—raised acutely by this crisis but by no means confined to it—is perhaps *the* economic question for our time. It moves center stage in its wide form in terms of the *absolute* requirement for us to pursue this question in view of the rank un-sustainability, in "ecological" terms, of our current modes of our economic activity.[15] In terns of this crisis the question takes on a less overarching but scarcely less significant role. To ask whether the costs of 'doing business' in terms of privatized financial accumulation as we have done it over the last decade or so—and the moral and social costs as well as the financial costs—are more than we should be asked to bear is to open up the question of the *value* that we obtain from the economy. To ask about *cost* in relation to *cause* is to try to establish a broader understanding of how (and who) an economy benefits.

The argument proceeds in five steps. Beginning with the question of crime in the contemporary economy, i.e., of what is done in order to secure wealth—crime here taken in a wide extractive sense (sections I-IV), the paper looks at the nature of the modes of (extractive) financial accumulation created from the 1980s onwards and specifically at the modes and models of accumulation dominant in the current crisis (sections IV-VII). The third section then examines accumulation as a force and what I have called the "structures of irresponsibility" characteristic of the modes of accumulation that were dominant in the run up to the crisis. It looks particularly at debt, regulation, risk, responsibility for consequence and privatization and finishes with the question of greed (Sections VIII-X). Finally, the fourth aspect of the paper looks at the costs of greed, cognitive as well as economic, and considers how we might begin to think of the economy outside of the current *a priori* definition of the economy as, in effect, only a vehicle for private accumulation (Sections X-XV). Because of the complexity of the argument, I have divided the paper in two. Part I, that takes in sections I-IV, essentially acts as a long introduction to the main argument, which focuses, as is noted above on the structures of irresponsibility internal to this mode of accumulation and on the multifarious—and unacceptable— costs it imposes.

The question of a charity

Consider, as a starting point to the double question of the causes of the crisis and its costs, this story. It concerns the collapse and subsequent nationalization, of Northern Rock, a British bank and mortgage lender and one of the UK leaders in the sub-prime market. First uncovered by the financial analyst Richard Murphy[16] the point of the tale lies in what the British government found as it opened the books. Here is Iain Macwhirter's summary from the UK *New Statesman* of 20th October 2008: "The Treasury minister Yvette Cooper discovered to her dismay that Northern Rock didn't own half its own mortgages: £50bn ($75bn)[17] had been hived off to a Jersey-based company, Granite,[18] *registered as a charity benefiting Down's syndrome children in the north-east of England*."[19]

The smile of incredulity that half-forms at the sheer audacity of the act—how could they conceive of doing that?—fades as the implications of this appropriation (an act of identity theft at the very least) sink in.[20] Even Brecht, one thinks, might have hesitated to ascribe such a tactic—though *The Threepenny Opera* provides perhaps the only suitable fictional parallel that come close to what is afoot here.[21]

Sanctioned at the highest levels in the company, and underwritten by some of the major US and UK banks,[22] Granite was not essentially different—save in its theft of DSNE — from many other (highly profitable) "structured" synthetic investment vehicles and valuation models developed, in the last decade or so, across the banking sector.[23] Located off-shore, in a schema of ownership that made it extremely difficult to discern by whom it was controlled, it was, in effect, all but impervious to taxation and, equally importantly, given what it held, detailed scrutiny.[24]

Even by the standards of the City, Northern Rock's appropriation of Down's Syndrome North East should have been an acute embarrassment to a financial industry that only three months before had been lauded, in an annual ritual, by the British Prime Minister—who congratulated them on 'remarkable achievements' that 'history will record as the beginning of a new golden age.'[25] Yet the story is more than an embarrassment. It is pathetic of course—there is no great financial acumen in hiding liabilities or in setting up what is essentially a fake charity; *The Producers* were more inventive, the stock-exchange games of the 1920s more complex—but it is revealing. [26] Whether technically illegal or not, most of us would say that what happened at Northern Rock was, at minimum, a serious moral crime. Instinctively (and surely correctly) we feel there is something fundamentally unforgivable in using a charity for Down's syndrome children as a tax-evasive parking lot for (ultimately distressed) mortgages just as there is something deeply shameful about making the "new economics" dependent on such gambits..[27]

But it is not only a moral problem—even though in the end this is a more significant dimension of the issue than we might think. Part of our reaction to this story is that if *this*, then there is no boundary, no limit; no place where it is possible to say, *here* legitimate business ends, *there* criminality begins.[28] Instead, we are faced with the opposite, a steady slide towards criminality becoming an internalized norm of business. But this is exactly what is revealed here.[29] Like Madoff, Enron—and today Stanford—and many others before it, a litany that is getting much too long for comfort, Northern Rock's act is in danger of blurring the line between business and crime.[30]

This is a line which is crossed with increasing frequency in the “new” economy: criminality, and near-criminality, runs throughout the financial system. Corporate scandals of the past few years have involved many, if not most, of the world's major global accounting firms as well as a goodly spread of major corporations and financial institutions.[31] Caribbean, British and European tax havens run on tax evasion and criminal money-laundering, a fact that the governments concerned no longer bother to deny. (Obama pointed out in his campaign that a single office building in Cayman Islands was the headquarters of 18,000 US companies—that’s either, he said, ‘the biggest building or the biggest tax scam on record. And I think we know which one it is’).[32] In Europe, crime now constitutes one of the largest single sectors of business. The Mafia alone controls, through "legitimate" companies, something of the order of 20 per cent of Italian business or 15% of GNP worth (in 2000) around $800bn with a (then) annual turnover of $133bn.[33]

All of this—and more—is well known. Yet we tend to pretend—along with government—that the institutionalization of crime within the "mainstream" economy is not a matter of concern; that it doesn't come with acute political, social, moral and—in the end economic—costs. This is an unsupportable supposition. To put it bluntly, it is nonsense. Not only is there a danger of a moral vacuity (into which genuine criminality steps with ease—one thinks of the trade in body organs run so profitably by the Italian mafia—hence their investments in medical care facilities)[34] but crime costs—socially and politically and (in the not so long-run) economically. The global cost of corporate crime coupled with tax evasion and avoidance is estimated, conservatively, at around $400-500bn a year.[35] When more than 40 per cent of the value of African bank accounts is in Swiss banks, we know that looting and corruption — the ‘politics of spoil’, as Oswald Spengler named it nearly 80 years ago[36] —has taken place on a huge scale.[37] The (failed) reconstruction of Iraq, which has remarkably little new infrastructure or working institutions to show for investments that have topped $100bn, will be noted, when its history is finally recorded, as perhaps the largest site of embezzlement in history.[38]

One could go on. The list simply reminds that crime is indeed a redistribution of wealth, but there is nothing of Robin Hood about it. It is the most regressive form of "taxation" and the one most debilitating, in all its consequences, to social well-being.[39] (For the wider social—and economic— costs of crime, it should suffice to look, for example, at southern Italy, where criminality at this level has been in operation for generations and little or nothing escapes its take.).[40]

Crime in the new economy

We tend to turn our back on these issues; to romanticize crime as part of entertainment, while denying the wider cost of the slippage of the boundary between “legitimate” and criminal business. One result is that we scarcely understand the full consequences of what happens when crime and business begin to slide together at this scale. This is a particular problem for us in that it is increasingly difficult, if not impossible, to disengage crime from the mainstream economy.

Take the issue of corporate tax evasion. Why, we might ask, when states are losing colossal revenues to evasion and avoidance[41] is there an effective refusal by those

governments who have at least nominal oversight over the centers of money-laundering and tax evasion (the US, the UK, Switzerland, Luxembourg, Lichtenstein) to do anything meaningful to regulate the movement of capital? Why have neither the World Bank nor the IMF tried to investigate or quantify capital flight and tax evasion?[42] One answer is that although we tend to assume that tax evasion occurs at it were after or post- legitimate business activity, in fact something of the order of half of all world trade is conducted, for accounting purposes, through tax havens. In other words, tax-havens are not merely for evading the social costs of doing business they are weapon of competitiveness. John Christensen of the London-based Tax Justice Network explains:

> The ability of multinational businesses to structure their trade and investment flows through tax-haven subsidiaries provides them with a massive financial advantage over nationally based competitors. Local firms, regardless of whether they are technically more efficient or more innovative, find themselves competing on an uneven basis. In practice this market distortion favors the large business over the small, the international business over the national, and the long-established business over the start-up. The outcome has been that both in theory and in practice the use of tax havens by virtually every major global bank and multinational business has nullified David Ricardo's doctrine of comparative advantage. Fundamentalist advocates of a no-holds-barred approach to free trade have persistently turned a blind eye to this problem. For those like Baker – and myself – who believe that free and fair trade can generate viable economic growth and spread its benefits across society, the blatant unwillingness of key players like the IMF, the World Bank and the UK government to tackle these global market failures says a lot about their real intentions.[43]

Christensen is surely correct on this point. But one wonders too if this increased acceptance of the fluid or porous border between mainstream economy and crime—and this is a global phenomena, visible in every major geographic center of accumulation—is only an accidental by-product of the process? There seem to be two aspects at work here. Once you not only allow but *insist* as the IMF began to from the 1980s onwards, that 'the world' be opened up to the operation of 'free-markets financial services' (meaning also the free flow of capital) there is no effective way of policing what occurs. You thus by necessity create an economy that is remarkably hospitable to organized criminality'[44]

At the same time, by setting in place a mentality in which it becomes *de rigueur* that any and all opportunities for accumulation should be seized, almost no matter what the implications, you create an ethos in which, in effect, in terms of financial accumulation, there are few or no limits. What all this means is that while criminality in the operations of markets is not officially sanctioned, in practice much is permitted. After all, the nature of dis-possessive, diversionary and extractive accumulation operating at very high levels of short-term profits lends itself to operations disinclined to restraint and responsibility.[45]

All this suggests—and this is surely accurate—that the structures of (particularly) short-term privatized financial accumulation are permeable with respect to quasi-criminality. To put it in a more picturesque manner, the piratical seizing of opportunity for profit is not as dissimilar as some in business would like to pretend.[46] Of course capitalism has never been overly concerned about its source of profits. Results (i.e. returns) have always trumped scruples. The

problem however, athough we tend to forget this, is that crime is not only socially regressive, it is economically incompetent. There is nothing surprising about this. Crime is by definition *nothing but* theft. It does not *make,* it *takes*; it is not wealth-creative, but wealth-destructive—or at best wealth-diversionary. It leaches monies out of economies that it in no way constructively contributes and it destroys the structures of trust that are the conditions for real economic life.[47] It is, to put it simply, extractive; a using-up of what is;[48] the diversion, or dispossession, of wealth earned elsewhere; in effect, it is a tax (and often a very large one) on the body politic. It is cost.[49]

But crime is not only economically incompetent as theft. The vanity and narcissism that fuel it—both qualities, note, massively evident in the banks and institutions that have collapsed[50]—is the same as that which demands realization *in the moment*. The question of time is fundamental here. The conditions for the generation of genuine wealth, i.e., increase in long-term sustainable productive *capacity*, are antithetical to modes of accumulation, like crime, that eschew time, that live for the moment and which are essentially extractive in their attitude to wealth creation. It is worth recalling that it was for just these reasons that Keynes was particularly impatient of arguments in favor of short-term financial accumulation. Duncan Foley offers a useful summary:

> "In Keynes' view the widespread use of money and the development of sophisticated financial markets and assets are in part a defensive reaction against the 'dark forces of time and uncertainty" on the part of wealth holders. Real investment requires commitment of the investor to the long-term, illiquid and risky prospect. Financial assets, on the other hand, represent more liquid wealth than can be sold at any moment, and allow the wealth holder to defer the decision as to the ultimate use of the funds involved. But Keynes believes that this is exactly why money and financial assets are potentially dangerous. In times of uncertainty,[[51]] wealth-holders will tend to flee from real investment into financial havens and money, thus lengthening the time lag between the sale and purchase of real goods and services, and creating a gap between aggregate supply and aggregate demand.[52] While laissez-faire reasoning argues for making available as wide a spectrum of financial assets as possible, and reducing costs of transaction as much as possible, in order to increase the liquidity of the economy, Keynes sees a case for restricting investors choices, and forcing them to commit themselves to some real investment. He goes so far as to suggest that investment of wealth should be something like a marriage: an investor should be forced to choose whichever real investment he or she thought had the best long-term prospects, and stick with it for the life of the project.[53]

The remarkable contrast between what Keynes advocates and the ethos on Wall St or in the City of London over the last decade could hardly be exceeded—no wonder the discomfort that the "re-discovery" of the Keynes causes in some quarters.[54]

But there is clearly another level at which the denial of time and capacity works and that has to do with the economics of institutions and modes of regulation and the ways in which the extractive is erosive of institutions. While it maintains its own (at least in myth—this is part of the illusory romance of the Mafia) crime, and more generally the extractive, is profoundly destructive of the institutions that it makes use of (as is, as we are seeing in the crisis, debt-

fueled and leverage-induced financial accumulation which in this respect behaves with the same consequence.

One way to look at the financial crisis that we are now in is to see the system of privatized accumulation on Wall St and in the City as un-intentionally erosive of its own institutional base. All productive economies are dependent upon particular and complementary patterns of formal and substantive institutions and modes of regulation. Financial operations are particularly dependent on structures of trust embodied in institutions. Accumulation, in the modes we have seen it work on Wall St and the City is no exception, it was equally dependent on such trust. The proof of this dependency is given in the timing of the most serious moment of the collapse which occurred not when the markets began to fail but only when one of the institutions that marked that trust was (mistakenly as it turned out) allowed to fail. Mohamed El-Erian comments: "The manner in which Lehman Brothers failed disrupted the trust that underpins the smooth functioning of market economies. What was less well understood [in allowing it to fail] was that it matters a great deal how an institution's failure affects the capital structure. The way Lehman failed disrupted payments and settlements. Around the world, *market participants stepped back in mass from what, up to then, were standardized, routine, predictable transactions*.'[55]

It was not, note, simply that Lehman's possessed symbolic value—though clearly, too a degree, it did, hence the shock of its collapse. But it is more accurate to say that it represented what even accumulation in its most rampant form required, and that was the ability, at the simplest, to have transactions occur under a routine of trust and regulation. The problem, of course, is that this same mode of accumulation, which for even the possibility of the transactions on which it depended for its revenue required trust (and which also was dependent, wholly, on institutional identity to give its products a price —*there was after all in the end nothing else on which to base price*)[56] could not but also work to erode regulation (this was Madrick's point of course) and therefore could not but also erode the institutions and the basis of trust on which transactions could happen.

Put this another way and we can say that the move from what Peter Gowan calls the public-utility side of banking and financial services into a 'private capitalist credit system(s)'[57] focused on accumulation-through-speculation underwritten by individual incentives—was bound to give operational emphasis not to stewardship but to short-term maximization of returns, not matter what the institutional context. Bonuses at the operational level, profits at the supervisory (board) level provided sufficient lure for this emphasis. Not that in practice it mattered, but this was in any case supported "theoretically" by the premise of the maximization of notional-net-worth-at-market-prices—no matter how illusory or, to put it a little more charitably "uncertain" these prices and profits might be (whether as prices paid for "assets" (loans), the 'profits' booked or the assessed market value of the institution).

This would not be the only moment in economics when the pursuit of short-term *notional* net worth proved catastrophic.[58] From the perspective of pure market theory even concern for something as *apparently* indirectly related to value as institutional worth (i.e., in the financial sector, trust in the institution on which all else depends) can be read as 'interference' with the realization of value, a hindrance to the 'spontaneity' of the market. The problem is that in the case of the sub-prime mortgage and other speculative "markets" the pursuit of short-term returns come what may, i.e., without reflection on costs or consequences, simultaneously

hollows out the asset-base of the institution. Just as the Mafia extracts until the source is emptied, in Wall St and the City the lode—let us say, sub-prime mortgages and their related "asset-backed" securities—is mined for value (through leveraging and debt) irrespective of consequences for the institution *through which the wealth-creation depended.*[59] Hollowing out the asset base of the institution cannot but lead however to a hollowing out of trust.[60] But when trust goes, then the institution goes. One scarcely needs to add that once the requisite collective level of trust in the market is breached then the contagion—i.e., the seizing up of credit transactions—spreads with the speed of a bush-fire.

A new mode of accumulation?

Two conclusions can now be borne forward from these last sections. The first is obvious: it is that criminality, in the wide sense, is far more present (i.e., is far more structurally internalized) in the accumulative economy than, in general, we would like to concede. We said above that 'the structures of (particularly) short-term privatized financial accumulation are permeable with respect to quasi-criminality' (and more dramatically that 'the piratical seizing of opportunity for profit is not as dissimilar as some in business would like to pretend). But although this is not inaccurate, the last observations around the erosion of trust suggest that this way of seeing at once over-dramatizes, *but underplays*, the real consequences here. For while criminality is more present (i.e. is more structurally internalized) in the accumulative economy than, in general, we would like to concede, much of the reluctance to admit the relation comes from the fact that it is not simply a matter of criminal modes of extraction co-existing *within* the economy (which they do, and to massive extent); it is rather that the extractive model of wealth "creation" permeates the accumulative economy. In other words, to admit the real relation with criminality is also to have to concede that many of our current modes of so-called "wealth creation" are in truth less creative than extractive. The real problem therefore is not only criminality per se, but our effective shift into a mainstream economy dominated by models of wealth extraction and not wealth-creation and characterized by the pursuit of modes of accumulation focused on dispossession, diversion and extraction.[61]

Evidence for this is all around us in the debris of the crisis. It is now perfectly clear, for example, that for all their apparent sophistication, a significant percentage of what was sold in the sub-prime markets was considerably closer to the pyramid-selling or Ponzi rackets of door-to-door salesman than the industry would like to admit. In a telling instance that can stand for a raft of similar practices, the *New York Times* reported (January 20, 2009) on the attempt by one small Connecticut-based US bank to sue Deutsche Bank. At issue was the latter's sale to it of $80m worth of Gemstone VII, a Cayman Islands based offshore "collateralized debt obligation," which contained such toxic and unreliable asset backed securities *that at the same time Deutsche Bank were selling it to the Connecticut bank they were 'encouraging others to bet against' it.*[62]

The issue here, again, is less the specific instance (which doubtless could be reproduced *ad nauseum*—the whole process after all lends itself to these maneuvers) than it is the extractive slide between the accumulative and the criminal; the creation of structures of accumulation (and lack of regulation) which allow—and to a degree encourage—practices that are sometimes criminal in the individual case, often borderline criminal, but widely accepted, and in all cases markedly deeply erosive of both institutions and markets.[63] It is this slippage—

this slide into what we can call "structurally irresponsible accumulation"—that is so consequential for the debacle and hence for the collapse of the banking sector as a whole.

The second point that arises from the Deutsche Bank story is that such practices, or those close to them, will necessarily occur *whenever returns are demanded from models of "wealth-creation" that cannot supply the level of return demanded*. Packing and bundling sub-prime mortgages could never create the *additional* billions of value attributed to these "innovations" by the industry.[64] That they appeared for a time to do so derived from a cocktail of financial euphoria, debt-fuelled liquidity, crony capitalism and the pressure of huge incentives (i.e., individual and collective profit) to make-believe that this was possible.[65]

But this tells us, as we now know, that the extractable-value[66] supposedly won from these transactions—let us say some $400 billion on Wall St at the height of the bubble[67]—has proved largely illusory.[68] This should not surprise. The much vaunted "creativity" and innovation in the financial markets[69] post 2000- lay not in the production of wealth (for no increase in real wealth-producing *capacity* was in fact produced) but in the ability to generate *flows* of capital from which revenue could be extracted.

This suggests, as on reflection we might expect, that in the absence of real wealth-creation accumulation finds a *substitute*. For the banks and financial houses of Wall St. and the City what mattered was not the creation of wealth (a process infinitely too long-term to contemplate, even as their own project matured over a considerable period of time—for one should really see this crisis as 25 years in the making)[70] but the extraction of realizable value from capital that could be made to flow through the institution. This explains the 'relentless' drive for expanded balance sheets 'at all costs'—and for expansion on *both* sides of the balance sheet, assets and liabilities alike.[71] Value is here a cull. Innovation is creating the conditions under which, and from which, immediate[72] surplus can be won from flows of capital.

All of this suggests that we are dealing with a *distinct mode of accumulation*, a new 'growth regime' as Aglietta might call it[73] (though he of course uses it to refer to the economies he sees emerging in China/India—the economies that will now dominate the C21st—and we are by contrast talking here merely about some rather sordid trading in markets that probably should not have existed but which unfortunately have had the capacity, in their unfolding, to do untold damage).

Nonetheless his point, and especially his rider— '*whose rules we have yet to find out*'—is perhaps a useful pointer, and in two ways. First, it is clear that across the boom years a relatively new pattern of accumulation did in fact emerge. Desired behavior (increased short-term returns with the most rapid possible rate of return between (deferred) debt and bookable profit shifted the correlation of factors, and, second, did so in ways that were not immediately transparent, either to players or to (most) watching economists and politicians. In other words what occurred was nowhere near as "known" as was thought; the rules that players thought they were playing with, and certainly the ones that economists thought were being played to, turn out to be largely illusory. Another pattern was at work. As Paul Krugman recently put it, echoing Keynes, in this situation the "scarcity is understanding."[74]

Take for example the issue of the rate of return desired in relation to the basic proposition that revenue can be won by essentially offering (originating) products that allow

institutions to skim a percentile take from flows of capital. Post-2000 the 'natural' flows of capital, through trade, pension funds and the like, although massive by historic standards and intensified by a large order through globalization, are still inadequate to what is required to meet what is now felt as both possible *and* necessary, i.e., considerably higher ratio's of return than those previously available or expected. To make possible these levels of returns additional flows of capital are required. The agency of this additional flow is debt.[75] Debt enables vast increases in the flows of capital through the institution. In so doing it *directly* secures accumulation.[76] But it brings in train two questions at some point which take us back to the underlying issue of whether, in all of this, wealth was ever created at all? The first question is whether the immediate profits won in such a situation are "created"—or merely *purchased*.[77] The second is whether the surplus extracted from the throughput is greater than the *real* costs of borrowing—and whether the cycle of short-term borrowing to finance long-term liabilities could be sustainable.[78]

Post-crisis, we know the answer to both questions. Profits were essentially "bought"—at the price of debt and a tranche of liabilities that are not at this point resolved as to their value. The cycle was clearly unsustainable—but *only*, we should note, when it became finally clear that the value of what was traded was wholly opaque, even to the creators of the structured investment vehicles themselves. The questions that we now have to ask are two-fold: what are the structures that underlay this mode of accumulation, and why do they take on the form of what I've called structural irresponsibility—an objective irresponsibility if you like, which condemns this mode of accumulation to collapse? And second, what are the costs and consequences of unbridled (financial accumulation)? What does this do to the economy? What does it do to society? And what are its cognitive consequences? What does accumulation obscure? In a certain, but deep, sense, how does accumulation in this form make us stupid, economically speaking? How does it become the opposite of what we fondly wish to think it is?

Notes

[1] Such was also the case in Sweden in the early 1990s when a similar, though more limited, collapse of the banking sector had the government step-in and boldly (if temporarily) nationalize the banks. In the Swedish case this allowed a rapid recovery--and the taxpayers to recover their investment.

[2] In the same vein a month later 16 UK economists also felt confident enough to deny that this was a crisis at all: "Occasional Economic slowdowns are natural and necessary features of a market economy" they wrote. (*Sunday Telegraph,* 26th October 2008). There is little to be alarmed about—and no need at all for any change in policy. "Insofar as [slowdowns] are to be managed at all, the best tool is monetary." Any 'additional state spending' would only "stunt the private sector's recovery once recession is past." In reality the signatories fears of disruption coming to the markets through government action seem as overblown as was their obtuseness towards what was startling evident to everyone else.

[3] As is well known, current estimates are that the loan and securities losses for US originated assets will total anywhere between $2 trillion and $3.6 trillion—of which the US banking sector is exposed to around half. At the high end of the estimates this is roughly equal to the current market capitalization of the sector. Since capital has evaporated, and the asset base of many still cannot be reliably priced or brought to market, 'restoration" seems to be a strategy in denial.

[4] Succinctly and sharply analyzed by Nassim Nicholas Taleb in "How bank bonuses let us all down," *Financial Times*, 25 February 2008, p. 9.

[5] It would be the height of folly to execute the bank-bail-outs at colossal cost merely to re-instate a *temporary* mode of accumulation? Should it not be rather argued that "originate and distribute" or "transaction based" models of banking have failed in practice and are in any case, late and aberrant models. Should not the point be to restore the public-utility dimension of banking?

[6] A deep problem with how we understand the current situation is that while the words "greed" "fraud" and "irresponsibility" are now used in conjunction with Wall St and its part in the crisis with a frequency unthinkable even a year-ago—itself an indicative sign in sea change in public attitudes—nonetheless there is a huge gap between this sentiment (and anger this induces) and changing policy on Wall St. Two issues seem to be interconnected here which bear on the overall thrust of this paper. The first, epitomized by the focus on the issue of bonuses, is the confusion over subjective impulse ("greed") and structural irresponsibility. The second, is the degree to which, in forgetting that the banking system is in fact a public utility, closer to the provision of telephones or water or electricity than the stock-exchange, we have not yet in mind another role for the banks. Too aware of their role in the economy (the fear of letting them go under) and not enough aware of their public function, policy focuses on "reform" but in fact structurally preserves the private "capture" of the banking system for short-term accumulation. *Nothing* that is being proposed so far adequately addresses this complex of problems. What we are not still facing up to is the degree of structural irresponsibility built into the mode of accumulation that the banking sector has now *internalized* as its modus operendi.

[7] It is worth noting that at least one economist has smelt a rat in this respect. David K. Levine of Washington University in St. Louis commented on the occasion of the letter from the 166 economists referenced above: "I suspect that part of what we're seeing in the freezing up of lending markets is strategic behavior on the part of big financial players who stand to benefit from the bailout."

[8] There is still a sense that "had I been in charge" none of this would have happened. .This illusion, one feels is carried through less by ego than by a refusal to admit the degree of structural un-sustainability in what is. There is clearly acute fear in admitting the degree to which extractive accumulation has become the driving force in the economies of the older and declining economies and as such constitutes *permanent* instability and potential for destructiveness. As is noted below, no one is yet prepared to admit that in the financial sector at least, the processes wealth-creation have now become structures of extraction.

[9] "How We Were Ruined and What We Can Do," *New York Review of Books*, February 12th 2009 p.15-18.

[10] The possibility of the latter was neatly summarized by Martin Wolf in early January in the *Financial Times*: 'Now think what will happen if, after two or more years of monstrous fiscal deficits, the US is still mired in unemployment and slow growth. People will ask why the country is exporting so much of its demand to sustain jobs abroad. They will want their demand back. The last time this sort of thing happened – in the 1930s – the outcome was a devastating round of beggar-my-neighbour devaluations,

plus protectionism. Can we be confident we can avoid such dangers? On the contrary, the danger is extreme. Once the integration of the world economy starts to reverse and unemployment soars, the demons of our past – above all, nationalism – will return. Achievements of decades may collapse almost overnight.' "Choices made in 2009 will shape the globe's destiny," January 6th 2009.

[11] As is made clear below, I see, the provision of debt as the key political as well as economic agent of the crisis. Debt is an instance perhaps of where an enabling cause or an enabling condition of existence becomes active in the generation of the crisis but itself becomes the equivalent to a pressure or a force to act in relation to it. Acting in relation to allowed-debt runs across behavior, from households to Wall St to government.

[12] 'The economic crisis should be regarded as an unavoidable consequence and hence a "just" price of we have to pay for immodest and over-confident politicians playing with the market.' Vaclav Klaus, "Do not tie the markets —free them" *Financial Times* Jan 7th 2009

[13] This is the shift from deposit-and-loan banking to "transactions-orientated" financial accumulation based (primarily) on inter-bank trading: "endogenous accumulation"?

[14] These points are discussed extensively below in Part II of this essay.

[15] A point that suggests that "accountancy"—*the ability to cost*, though scarcely not in the modes we know it today—will be an essential discipline in respect of any attempt to create a less unsustainable economy.

[16] See Richard Murphy's excellent and informative blog on these matters, *Tax Research*. For his notes on Granite see: http://www.taxresearch.org.uk/Blog/?s=Granite&searchsubmit=Find

[17] The more usual figure quoted is £40-45bn., but the given the recent inflation in monetary figures the difference has no impact on the implication.

[18] Richard Murphy accurately describes Granite as a 'wholly artificial construction, seeking to shift liability'. Granite was in fact owned and controlled by Northern Rock but with a pretence that it did not. There was particular hypocrisy in the description of the beneficiaries of the holding company: 'The entire issued share capital of Holdings is held on trust by a professional trust company under the terms of a discretionary trust for the benefit of one or more charities. The professional trust company is not affiliated with the seller. Any profits received by Holdings, after payment of the costs and expenses of Holdings, will be paid for the benefit of the Down's Syndrome North East Association (UK) and for other charitable purposes selected at the discretion of the professional trust company. The payments on your notes will not be affected by this arrangement.' However, as Richard Murphy notes, this is effectively countered by Northern Rock's own statement that 'The financial information of the Group incorporates the assets, liabilities, and results of Northern Rock plc and its subsidiary undertakings (including Special Purpose Entities). Entities are regarded as subsidiaries where the Group has the power to govern financial and operating policies so as to obtain benefits from their activities. Inter-company transactions and balances are eliminated upon consolidation.'

[19] It goes without saying that neither the charity nor the children received any money—though the company insists that it placed collecting boxes in the entrance to its offices. The summary I have quoted is from Ian Macwhirter "The mad world of the shadow bankers", *New Statesman* 20 October 2008.

[20] The charity concerned, the Down's Syndrome Association North East (UK) is a family support group run by about 300 parent volunteers. The charities trustees issued a statement when the news of Northern Rock's actions first broke: 'In connection with the current problems of Northern Rock, we would like to assure our members and supporters that Down's Syndrome North East (DSNE) has not been knowingly involved in any misuse of money. We are investigating why our charity appears to have been named as a beneficiary of a Trust without our consent. We have definitely not received any money from Northern Rock or affiliated companies, except for a one-off donation from a staff collection in 2001. Currently we have not received notification that any funds are being raised or collected by Northern Rock or affiliated companies on our behalf.' For more on the (non-)relation between Northern Rock and the charity see Paul Murphy, 'The (un)charitable core of Northern Rock' *Guardian*, October 8th 2007.

[21] Bertold Brecht, *The Threepenny Opera*. The novel, set in the context of the last great period of the dominance of financial capital, pre WWI London of the 1890s/1900s, remains perhaps the best guide to the current crisis, not least because the "primitive accumulation" it represents (amidst the sophistication of Imperial London) is far more akin than might be first imagined to what we are now encountering. The other novelist of relevance here, to be mentioned below, is the under-read Ben Traven. *The Treasure of the Sierra Madre* (famously filmed by John Huston) is an allegory of the entire crisis.

[22] 'Lead underwriters on the Granite program were Lehman Brothers, Merrill Lynch, and UBS. Underwriters were Barclays Capital, Citigroup, JP Morgan and Morgan Stanley.' Paul Murphy, 2007, op. cit.

[23] How profitable were such moves? Barclays, a major British commercial bank, in 2007 took all but half its profits from "special investment vehicles."

[24] By placing its mortgage liabilities off-shore Northern Rock did not need to "count" them on its balance sheet. It therefore allowed the company to leverage loans at even higher levels. At the same time, both located off-shore and registered as a charity, it was all but impervious to taxation—or, equally importantly given what it held, detailed scrutiny. For a succinct note to this effect that links offshore tax-havens and the current crisis, see Richard Murphy and John Christensen 'The threat lying offshore,' *Guardian*, 10th October 2008.

[25]Gordon Brown, UK Prime Minister, in the annual Mansion House speech made by to the city of London on 20 June 2007: " . . . And I believe it will be said of this age, the first decades of the 21st century, that out of the greatest restructuring of the global economy, perhaps even greater than the industrial revolution, a new world order was created.' The speech in full can be accessed at http://www.hm-treasury.gov.uk/2014.htm . Even more egregious, in the light of what has followed, are some of the lines in the speech of the year before: see
http://www.guardian.co.uk/business/2006/jun/22/politics.-economicpolicy

It is indicative of the transformation in the situation that on the day this paper was revised (26th January) there was serious consideration being given as to whether the attempts to bail-out the UK financial sector might result in effective bankruptcy of the UK. While this possibility was thought remote, the very fact it could be raised as a serious consequence illustrates graphically both the speed—and cost—of the collapse. Is it necessary to add that the order that may emerge from all this will likely not be the order Gordon Brown intended, and not perhaps order at all. The combination of direct costs, 'secondary fall-outs' and worrying signs of protectionism, nationalism and lack of coherence in international responses to the crisis point to disturbing potentials for longer-term social and political crises

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[26] In the wake of the subsequent collapses on Wall Street—and particularly of the financial empire of Bernard Madoff—there may seem little special about Northern Rock's act. There might be a temptation therefore to try to place this in the same class. But despite the scale of his operations (still much less, at $50bn, than Northern Rock) Madoff can be dismissed. He belongs simply in the long tradition of the crooked swindler. All financial scandals expose a number of these. As Sherlock Holmes might have said, apropos a particularly mundane murder, the case offers scant theoretical interest. Northern Rock is more complex, both economically and morally. It opens us to the more ambiguous capitalism of our time and its "costs" go well beyond a simple accounting of profit and loss. It is therefore of considerable interest to political economy (if an embarrassment to economics).

[27] This is where the question of the return to the status quo takes on a sharper bite. It should make us ask: does a return to "unparalleled prosperity" require us to buy into a model where appropriating charities for Down's Syndrome children becomes an acceptable strategy for keeping the financial economy afloat? Are we to accept that this is this what "dynamic and innovative private capital markets" now do?

[28] This is where the question of the return to the status quo takes on a sharper bite. Does a return to "unparalleled prosperity" require us to buy into a model where charities for Down's Syndrome children become the only means of keeping afloat the inverted pyramids of financial Ponzi-schemes? Is this what financial innovation now means? Note that the insistence that this is what it should *not* mean has no force.

Part of the intellectual problem here lies in seeing consequences (and costs) of modes of accumulation.

[29] What is felt as the mortal and social danger here is precisely this slippage: if *this*, then there is no boundary, no limit, no place where it is possible to say *here* legitimate business ends, *there* criminality begins. Instead, we are faced with the opposite, a steady slide towards criminality becoming an internalized norm of business. A defense will be that this has always been the case. But this neither legitimates was is occurring nor recognizes what is structurally peculiar to the relation today.

[30] Collusion between the overtly criminal and the those who also profit from their activities is a particularly virulent plague. On the Bernard Madroff scandal for example, while the company appears to have deliberately employed tiny accounting firms, major accountants like PriceWaterhouseCoppers and

KPMG were involved in accessing risk. And what are we to make of Greenwich Financial, the Connecticut-based company who acted as one of Madroff's prime agents—to the tune of obtaining $500m in fees, or the private Swiss bank UBP. Both companies, it appears, chose to ignore red flags signaled (if privately) by other companies as early as 2003.

[31] A good example is Citibank. Since its merger with Travelers and its investment banking arm, Saloman Smith Barney the company has been (i) penalized for its practices in the dot-com bubble of 2000-2001; (ii) faced losses and lawsuits over its connection with Enron and WorldCom; (iii) had problems over its links with the criminal collapse of Parmalat in Italy; (iv) had its private banking business in Japan closed by the government; (v) has been forced to recant over it "over-zealous" actions in the European Bond market. By 2005 even the ever-lenient Federal Reserve was refusing permission to it to make further acquisitions. And what the longer-term financial results of this activity? By January of 2009 the company had produced its fifth straight quarterly loss.

[32] For more on corporate tax-evasion as endemic to the economy, see Raymond Baker, *Capitalism's Achilles Heel: Dirty Money and How to Renew the Free-Market System* (Hoboken, 2005, Wiley). Baker's book was the subject of an excellent review article by John Christensen in the *London Review of Books*, 6th October 2005. The latter provides—in part through his personal experience in the industry in Jersey—a succinct overview of many of the issues around tax evasion and money laundering. Christensen directs the international secretariat of the Tax Justice Network, which is based at the New Economics Foundation in London. He is one of the authors of *Tax Us If You Can: The True Story of a Global Failure*.

[33] See BBC news, "Mafia 'gripping Italian economy'" Tuesday, 14 November, 2000 http://news.bbc.co.uk/2/hi/europe/1023221.stm

[34] There is nothing fictional about this reference. There was sufficient concern in regard to the market for global organ trafficking that University of California, Berkeley, held a conference to examine global organ trafficking, April 24th 2003. The goal was 'to bring attention to organ trafficking as a subset of a larger global problem in human trafficking' On shifts in Mafia organization see e.g. Jane and Peter Schneider, *Reversible Destiny: Mafia, Antimafia and the Struggle in Palermo* (Berkeley: UC Press, 2003).

[35] The web-site *Global Issues* has some interesting figures. Admitting that it is not at all clear how much money is held in tax havens they report that (in 2005) 'at least US $11.5 trillion is held offshore' this estimate reflecting largely high-wealth individuals. But, as they report, 'this does not include the laundered profits of businesses which operate through offshore tax havens to avoid tax. Nor does it include the financial assets of those whose wealth amounts to less than US$1 million. The total sum of money currently held offshore is not known.' $11.5 trillion dollars translates into around $255bn 'lost each year to governments around the world because of the no or low taxation of funds in offshore centers'—but this figure too 'does not include tax loses arising from tax competition or corporate profit-laundering.' How much profit laundering is there? On the latter *Christian Aid* reports that the total estimated "dirty money" flowing into the global banking system is $1 trillion, which breaks down to around $500m siphoned from the developing world, around $200 billion laundered by multinational companies, another $250 laundered by individuals and criminals and $50bn lost through corruption. None of these figures can be regarded as more than indicative. But they place the scale of the problem in some perspective. Christensen's review of Baker noted above is a useful beginning point for thinking about these issues.

[36] See Oswald Spengler, *The Decline of the West*, especially volume II, chapters XXII-XXIV

[37] Two indicative straws in the wind: it is thought that during his 5-year reign the Nigerian Dictator General Sani Abacha managed to send some $3bn to Swiss banks—an average of S600m per year. Another estimate says that for every $1 in aid to Africa, $3 is sent out of Africa as capital flight, mostly to Europe, the UK and the USA.

[38] An initial (unpublished) federal history of the American-led reconstruction of Iraq issued in December 2008 details spending in Iraq of around $117 billion. Achieved reconstruction was minimal. See James Glanz and T. Christian Miller in the *New York Times* December 13th 2008 "Official History Spotlights Iraq Rebuilding Blunders."

[39] One obvious instance is the "grand larceny' of the Russian sale of public assets (at rock-bottom prices) in the early 1990s. To public depredation was added the parallel rise of the Russian mafia. Applauded at the time by free-marketeers, the irresponsibility of the act carried through both symbolically and actually to the miseries of the 1990s in the former USSR. Studious avoidance of

acknowledging the human consequences of this public theft by those who were most prominent in urging "privatization" does not alter the facts.

[40] See e.g., Roberto Saviano, *Gomorrah: A Personal Journey into the Violent International Empire of Naples' Organized Crime System* (New York: Picador, 2008)

[41] The figures for the UK are indicative of the scale of the problem. Estimates of corporate tax evasion run as high as £13.7bn a year. 'Between 2000 and 2007 the proportion of tax paid by top companies fell.' 'A third of FTSE 100 companies (including 12 of the largest) paid no tax in 2005-2006, and another third paid a minute proportion of their operating profits. Scores more claimed tax losses.' *Guardian*, February 2nd 2009.

[42] Christensen, *London Review of Books*, 6th October 2005, op. cit.

[43] op. cit.

[44] As Neal Ascherson puts it in his review of the journalist Misha Glenny's book *McMafia: Crime without Frontier*s, is that the world becomes a perfect environment for mafias. 'Neo-liberal free trade meant that clean or dirty money could go anywhere. Meanwhile, the exceptions to free trade – commodities such as drugs, cigarettes, weapons, prostitutes and immigrants, which governments still feel obliged to regulate – could be smuggled in previously undreamed-of quantities. See "Gazillions" *London Review of Books*, 3rd July 2008

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[45] David Harvey has effectively summarized "accumulation by dispossession." See *Spaces of Global Capitalism: Towards a Theory of Uneven Geographical Development* (London, Verso: 2006) especially pp. 41-50.

[46] At the "respectable" end of the business, few banks, and no major firms of accountants—let alone hedge-funds, or the shadow-banking sector—have been counted amongst those calling for more than nominal supervision of the centers of money-laundering.

[47] A vivid example of the economic significance of trust was given to the markets by the manner of the collapse of Lehman Brothers. As Mohamed El-Erian has noted, the suddenness—and, to the market, the seeming arbitrariness—of allowing Lehman's collapse was more than simply disruptive of payments and settlements. As he put it, it shattered 'a given trust and confidence' in what had been up until then 'standardized, routine, predictable transactions.' Mohamed El-Erian, 'Only new thinking will save the global economy,' *The Guardian*, December 3rd 2008. We might add that the collapse in trust and resulting paralysis that the markets experienced in a sharp 24 hours is what is experienced as a generalized, if diffuse, condition in zones where the criminal erosion of social trust has become an embedded fact of life. On the societal implications of the destruction of trust see, e.g. Zygmunt Bauman, *Society Under Siege* (Cambridge: Polity, 2002) pp. 192-193; *Liquid Fear* (Cambridge: Polity, 2006) pp. 69-71.

[48] On "using-up" see Martin Heidegger "Overcoming Metaphysics" in *The End of Philosophy*, trans. Joan Stambaugh (Chicago: Univ. of Chicago Press, 1973) pp. 84-110. See especially pp 103-110.

[49] It is interesting that those most concerned with the "efficiency" of markets do not pay more attention to this point. The reason of course is that crime is a social tax. It is highly lucrative, on a personal basis, for those that profit from it. But then what is the measure of wealth in use here?

[50] As I write, RBS in Britain, a massive recipient of bail-out funds, is insisting it will maintain the bonus payouts even in sectors that lost billions in the past year, while the Wall St banks are reported to be ignoring the injunction to maintain loans to businesses while using their shares of the billions a cheap capital to finance acquisitions of smaller banks. The excesses of Bank of America in these respects are the current, but by no means the last, scandal in these terms.

[51] One of the conditions of the current crisis is that it is precisely financial speculation that has created 'uncertainty.' The capacity of the financial system—5% to 8% US GDP in most years—to effect the global economy as a whole confirms the historical shift from any notion that systems of financial accumulation acting as in some manner secondary to the real economy. Spengler got this as early as 1922: 'Only high finance is wholly free, wholly intangible. Since 1789 the banks, and with them the bourses, have developed themselves on the credit needs of an industry growing ever more enormous, as a power on their own account, and they will (as money wills in every Civilization) be the only power.' Oswald Spengler, *The Decline of the West, Volume II* trans. C. F. Atkinson (New York: Knopf, 1928) p.505-6.

[52] A gap that in this case had to be filled by debt: it was debt that in the short-term at least both allowed for the colossal accumulation that Wall St. manufactured in the boom years, and the maintenance of a tight connection between supply (loans) and demand (enforced consumption).

[53] Duncan Foley, *Adam's Fallacy* (Cambridge: Harvard University Press, 2006) p.194

[54] Cf. the full page advertisements that appeared in a number of US newspapers on January 28th 2009 the day before the House voted on Obama's economic rescue package. The Cato Institute, a right-wing Washington think-tank, funded a letter signed by some 200 US economists. The first sentence of the substantive statement read: "Notwithstanding reports that all economists are now Keynesians …." It went on: "we the undersigned do not believe that that more government spending is a way to improve economic performance … to improve the economy, policymakers should focus on reforms that remove impediments to work, saving, investment and production. Lower tax rates and a reduction in the burden of government are the …best ways to boost growth."

[55] "Only new thinking will save the global economy," *Guardian*, December 3rd 2008.

[56] The prices of the products sold in these transactions, since they were opaque as to value, were dependent for their valuation on the rating agencies and the reputations of the issuing bank.

[57] Peter Gowan, 'Crisis in the Heartland' *New Left Review* 55 Jan/Feb 2009 pp. 5-29.

[58] The difference, and it is one that we will have to pay increasing attention to, is that between notional paper wealth, profits booked in accounts, and real increases in (sustainable) productive capacity. One of the myriad costs of un-restricted financial accumulation is, as we will see, that this distinction is dangerously obliterated—to the point of real confusion, both in the minds of agents and in society as a whole (let alone by economists) .

[59] Traders, senior executives and board members within the Wall St Banks and City institutions acted, in relation to their (own) host institutions, much as the accumulative economy acts to the (real) economy as a whole., i.e., they pretended that their own actions were the generative source of wealth and denied dependency on the institution. But the "wealth-creating" activities of agents within the banks and financial houses could occur only because they were supported institutionally. In turn the entire process of accumulation could occur because of socially- and politically tolerated levels of debt. Hegel's dictum that all culture's deny what supports them absolutely comes to mind.

[60] There is a further useful reminder of the importance of trust in a series of interviews conducted with an "Anonymous Hedge Fund Manager" and published in N+I magazine, #7, Fall 2008, pp., 21-53 see especially 51-52. See also Luke Johnson, 'A tragedy for champions of free markets' *Financial Times*, Wednesday February 4, 2009.

[61] "Models" because what we are talking about here is ideology as well as reality. The comments by Gordon brown alluded to above are telling here. What Brown sees is that it is today the financial system that captures the imagination as the source of (instant) wealth. The problem is made more complex because although the financial sector is actually *not* the dominant sector of the economy, quantitatively speaking, its central role in the economy as a whole increases its ideological weight. If models of wealth-extraction ("seeking short-term treasure") dominate in this sector; if it admits and slides towards quasi-criminal extraction and practices that are both structurally irresponsible and profoundly erosive, this has incalculable effects—as we are discovering—across the economy as a whole. Part of the irresponsibility of economics over the last decade has been its seeming inability to chart these kinds of relations—but then these have dimensions that go beyond the 'main business' of economics as Edward Nell memorably characterized it some years ago, i.e., 'the *demonstration* that a well-oiled market mechanism will produce the most efficient allocation of scarce resources among competing ends.' See Nell, 'Economics: The Revival of Political Economy' in Robin Blackburn ed., *Ideology In Social Science* (new York: Vintage, 1973) p. 76.

[62] See "After Sure-Bet Investment Fails, A Bank Contends It was Duped" *New York Times*, January 20, 2009.

[63] "It is classic historically that financial crises reveal criminal fraud in the system, and it is actually nothing new that when one person does a Ponzi scheme it is viewed as criminal fraud and when a lot of people collectively do exactly the same thing (passing the money around among themselves) it is regarded as market instability. This kind of crisis is latent in capitalism, just as much part of it as the developmental booms." Ducnan Foley, personal communication.

[64] A simple but succinct explanation is offered by John Kay: "How can a package of loans be worth more than the sum of their individual values? … Securitization in lending may add value by allowing the risk characteristics of the new instrument to be precisely tailored to the risk characteristics sought by the buyer … There is something in that argument. But could there be tens of billions of dollars a year of profit in it? Could the advantages of slightly more elaborate differentiation of an already wide range of fixed-interest products really be so large? If differences in risk appetite determined the market, you would not expect the list of institutions that bought securitized products to be so similar to the list that sold them. There was never an economic rationale for structured products on the scale on which the financial services industry created them. They were the result of a frenetic search for commissions and bonuses. See "Wind down the market in five-legged dogs," *Financial Times*, January 20, 2009.

[65] More prosaically it was also due to the failure—but also the near-impossibility given the opacity of what was traded—of performing due diligence on what was being purchased. That failure, seemingly innocuous at the scale of issues we are now facing, is nonetheless indicative of the structural irresponsibility at the heart of the crisis and of this mode of accumulation.

[66] "Extractable value" because what was "created" here (e.g. in CDO transactions) were levels of notional profit that could be immediately booked and thus extracted. No true pricing of the costs of the debts necessary to fund such transactions occurred—nor were the risks of such transactions either understood or assessed. For a useful explanation of one part of this process, around so-called "super senior" debt, see Gillian Tett, "Misplaced bets in the carry trade," *Financial Times*, 17 April 2008. The combination of high-levels of debt and the *difference* between the fact that profits in this situation were super-liquid but that (as the banks discovered to their surprise) the "super senior" debt was not, accounts in large part for the crisis.

[67] The figure is derived from difference between historic rates of returns on Wall St and the rates of return in the last three years or so of the boom.

[68] All of this makes nonsense of course of the claim, quoted above, that "For all their recent troubles, America's dynamic and innovative private capital markets have brought the nation unparalleled prosperity."

[69] Innovation that Greenspan, Summers et al would not disturb by regulation lest the latter curtail the former. The principle fails to differentiate useful from dangerous innovation: it assumes what should the question: namely, is innovation in models of accumulation *always* necessarily beneficial?

[70] The is a very interesting relation between the (relatively) slow accretion of power by Wall St over last three/four decades; an accretion thought strategically and the product of much thought and investment and the remarkable capacity of its contemporary actors to focus only on the most immediate returns. To be sure, it was, for its protagonists, a remarkable party. And one that is not over yet. But it adds further food for thought, and makes those who clamor only for return to what-was, appear both more foolish and more short-sighted than they would wish to thought.

[71] There is an interesting question here as to whether there was not, in much of this situation, a perennial confusion as to what was "asset" and what "liability"—and for whom, and when?

[72] Immediacy is key here, the most liquid possible profit, realizable within a quarter; bookable at the conclusion of a trade. Not only the culture of the bonus and the short-term is important here. As will be noted later, much of Wall St and the City behaved from the beginning as if the trading culture that offered these profits was essentially unsustainable; that profits must be "grabbed" as opportunity arose.

[73] Michel Aglietta, "Into a New Growth Regime" *New Left Review*, 54, Nov/Dec 2008, 61-74, p. 63.

[74] ' The true scarcity in Keynes' world—and ours—was therefore not of resources, or even of virtue, but of understanding.' Paul Krugman, "What to Do" *New York Review of Books*, December 18th 2008. p.10.

[75] One telling statistic, at least for the UK banks, is that the difference between the amount on deposit and the amount on loan escalated from close to zero in 2000 to £530bn by the end of 2006. The difference is almost wholly accounted for by debt. Northern Rock was a typical example of this shift. It financed its mortgage program almost entirely by borrowing commercial money.

[76] Overall, as already noted above financial industry debt in the US escalated from c.21 per cent of GDP in 1980 to c.83 per cent in 2000 to c.116 per cent in 2007. The major increase in this debt is to facilitate of inter-bank trading.

[77] "Purchased" because this value was not created but, essentially, *bought*. In the sub-prime loan system increased debt purchased the *appearance* of profit. Repayment was of course indefinitely deferred. Monies paid under TARP are essentially the *public* repayment of this *private* debt.

[78] At one point 73% of Northern Rock's balance sheet was due in 3 months: a debt-dependency that almost beggars belief.

Reforming the world's international money

Paul Davidson [The New School, USA]

The last two lines of the original manuscript of my book *John Maynard Keynes* (Palgrave, 2007) was written in July 2006. In those lines I noted that:

> "when, not if, the next Great Depression hits the global economy, then perhaps economists will rediscover Keynes's . . . analytical system that contributed the golden age of the post World War II. For Keynes, however, it will be a pyrrhic victory".

The winter of 2007-2008 will prove to be the winter of economic discontent and the beginning of the end of the classical theory of the efficiency of global financial markets. For more than three decades mainstream economists have preached, and politicians accepted, the myth of the efficiency of markets, while burying any thoughts of Keynes's analysis of domestic financial markets and their connection via the international payments system.

Those who do not study the lessons of history are bound to repeat its errors. Economists forgot the events of the world-wide Great Depression and the collapse of unfettered financial markets that followed the "Roaring Twenties" prosperity. For history has repeated itself with the growth of deregulated financial markets and the prosperity of the 1990s and early 2ist century ending up in 2008 with the greatest financial market crisis since the Great Depression.

Within a few months, the so called U.S. sub prime mortgage problem that started in 2007 developed from a small blip on the economic radar screen to a situation that has caused the collapse of financial markets and threatened the viability of financial institutions world wide as the contagion spread quickly via the existing international payments system. If we are to prevent a global Great Depression, it is time to restore Keynes's vision of how the international payments system should work to permit each country to promote a national full employment policy without having to fear balance of payments problems or financial events occurring in other countries from infecting the domestic banking and financial system.

1. A lesson from the early post World War II history

In *The General Theory*, Keynes argued that if an economy was operating at less than full employment, then the nation's central bank, while maintaining the stability of financial markets, should focus on providing all the liquidity that the economy can absorb in order to reach full employment. For more than a quarter century after following World War II, the major central banks around the world tried to meet the role that Keynes had prescribed for them in his *General Theory*.

From the end of the war until the early 1970s most central banks tended to provide increases in the money supply in response to any domestic or international increase in demand for the nation's money, while maintaining interest rates at historic lows for prosperous times. This endogenous increase in the money supply tended to support expansion of aggregate demand that resulted in a golden age of economic growth and development for both developed and less developed capitalist economies.

While exchange rates were fixed under the Bretton Woods Agreement, in the early years after the Second World War the United States avoided amassing surplus international reserves by providing grants to the war torn nations, initially via the Marshall Plan and then via other foreign aid programs. In essence, the United States accepted the Keynes Plan suggestion that it is in the best interest of all nations if the major creditor nation bear the major burden of reducing trade imbalances and international payments adjustments. As a result of the Marshall Plan, for the first time in modern history, a post war depression was avoided. The U.S. and its major trading partners experienced unprecedented long run rates of real economic growth from the end of the second World War until the early 1970s.

When, in 1973, the U.S. withdrew from the Bretton Woods Agreement, the last vestiges of Keynes's enlightened monetary approach were lost, apparently without regret or regard as to:

[a] why the Bretton Woods system had been developed in the first place and

[b] how well it had helped the free world to recover from a devastating war which had destroyed much of the productive stock of capital in Europe and Asia.

In the decades since the breakdown of Bretton Woods, the world's economic performance has been unable to match what became almost routine economic success in the quarter century since the end of World War II in terms of low rates of global inflation accompanied by high rates of employment and real growth. Since 1973, however, international economic problems have multiplied, while significantly high rates of unemployment in many nations has again become the norm.

Under any traditional international free trade system, any nation that attempts to improve its economic growth performance by pursuing Keynes's policies for increasing domestic effective demand via easy monetary and fiscal policies will almost immediatelyface an international payments problem. Expanding domestic aggregate demand will increase the demand for imports relative to the value of exports. When a nation’s imports persistently exceed its exports, the nation typically requires foreign loans to finance this import surplus that is encouraging increased economic growth in the trading partners’s export industries.

Since 1981 the United States has been the “engine of growth” for most of the rest of the world, as U.S. ran an unfavorable trade balance as U.S. imports tended to grow more rapidly than its exports In so doing, the United States has been saddled by increasing international deficits almost every year for its laudatory efforts.

2. The Bretton Woods experience and the Marshall Plan

Too often economic discussions on the requirements for a good international payments system that would eliminate persistent trade and international payment imbalances have been limited to the question of the advantages and disadvantages of fixed vs. flexible exchange rates. As suggested in Davidson [pp. 139-144, 2007] those who champion the argument for flexible exchange rates most mainstream economists merely assume that the price elasticities of the demand for imports and exports will meet the Marshall-Lerner condition. Although the question of whether the Marshall-Lerner condition is important in deciding whether a policy of permitting some flexibility in the exchange rate has anything to

recommend it, the facts of experience since the end of the Second World War plus Keynes's revolutionary liquidity analysis indicates that more is required, if a mechanism is to be designed to resolve persistent trade and international payments imbalances, prevent contagion of financial markets globally, and simultaneously promoting global full employment, rapid economic growth, and a long-run stable international standard of value.

Since the second World War, the economies of the capitalist world has conducted experiments with the different types of exchange rate systems. For more than a quarter of a century (1947-1973) after the war, nations operated under the Bretton woods Agreement for a fixed, but adjustable, exchange rate system where, when necessary, nations could invoke widespread limitations on international financial movements (i.e., capital controls). Since 1973, the conventional wisdom of economists and politicians is that nations should liberalize all financial markets to permit unfettered international capital flows to operate under a freely flexible exchange rate system. The current international financial market crisis is a result of permitting unconstrained international financial flows.

In contrast to the classical view of the desirability of liberalized markets , Keynes's position at the 1944 Bretton Woods conference suggested an *incompatibility thesis*. Keynes argued that free trade, flexible exchange rates and free capital mobility across international borders can be incompatible with the economic goal of global full employment and rapid economic growth.

Between 1947 and 1973 policy makers in their actions implicitly recognized Keynes's incompatibility thesis. This period was, as already noted, an era of sustained economic growth in both developed and developing countries. Moreover, during this period, there was "a much better overall record of price level stability" with very high levels of employment compared to either the post-1973 period or the earlier gold standard era of fixed exchange rates (1879 - 1914) [McKinnon, 1990, p. 10].

The free world's economic performance in terms of both real growth and price level stability during the Bretton Woods period of fixed, but adjustable, exchange rates was unprecedented. Moreover, economic growth rates during the earlier gold standard fixed exchange rate period, although worse than the Bretton Woods record, was better, on average, than the global experience during the post 1973 period where liberalizing exchange rate and financial markets to achieve more flexibility exchange rates has been the conventional wisdom. The disappointing post-1973 experience of persistent high rates of unemployment in many nations, bouts of inflationary pressure and slow growth in many OECD countries, plus debt-burdened growth and/or stagnation (and even falling real GNP per capita) in developing countries contrasts sharply with the experience during the Bretton Woods period. Finally in the era of ease of electronic transmission of funds globally, individual investors and institutions such as pension funds,, local governments, banks, etc., looking for a slightly greater return on their money than they could obtain from holding domestic safe investments , reached across national boundaries to purchase foreign assets that they did not understand – but which were represented as being "as good as cash".

The significantly superior performance of the free world's economies during the Bretton Woods fixed rate period compared to the earlier gold standard fixed rate period suggests that there must have been an additional condition besides exchange rate fixity that contributed to the unprecedented growth during the 1947-73 period. That additional condition, as Keynes explained in developing his proposal for the Bretton Woods Conference, required

that any creditor nation that runs persistent favorable trade payments must accept the major responsibility for resolving these trade imbalances. The post war Marshall Plan (see *infra*) was an instance where the creditor nation adopted the responsibility that Keynes had suggested was required.

3. Keynes, free trade and an international payments system

To reduce entrepreneurial uncertainties and the possibility of massive currency misalignments in any fixed exchange rate system, Keynes recommended the adoption of a fixed, but adjustable, exchange rate system. More importantly, Keynes argued that the "main cause of failure" of any traditional international payments system – whether based on fixed or flexible exchange rates-- was its inability to actively foster continuous global economic expansion whenever persistent trade payment imbalances occurred among trading partners. This failure, Keynes [1941, p. 27] wrote,

> "can be traced to a single characteristic. I ask close attention to this, because I shall argue that this provides a clue to the nature of any alternative which is to be successful.
>
> It is characteristic of a freely convertible international standard that it throws the main burden of adjustment on the country which is the debtor position on the international balance of payments - that is, on the country which is (in this context) by hypothesis the weaker and above all the smaller in comparison with the other side of the scales which (for this purpose) is the rest of the world".

Keynes concluded that an essential improvement in designing any international payments system requires transferring the onus of adjustment from the debtor to the creditor position. This transfer would substitute an expansionist, in place of a contractionist, pressure on world trade [Keynes, 1941, pp. 29-30]. To achieve a golden era of economic development Keynes recommended combining a fixed, but adjustable, exchange rate system with a mechanism for requiring the nation “enjoying” a favourable balance of trade to initiate most of the effort necessary to eliminate this imbalance, while “maintaining enough discipline in the debtor countries to prevent them from exploiting the new ease allowed them” [Keynes, 1941, p. 30].

After World War II, the war-torn capitalist nations in Europe did not have sufficient undamaged resources available to produce enough to feed its population and rebuild its economy. Economic rebuilding would require the European nations to run huge import surpluses with the United States in order to meet their economic needs for recovery. During the war, the European nations had run down their foreign reserves to extremely low levels. To obtain the necessary imports from the United States, under a *laissez-faire* system, it would be necessary for the United States to provide enormous loans to finance the required U.S. export surplus to Europe. The resulting European indebtedness would be so burdensome that it was unlikely that, even in the long run, the European nations could ever service such debt obligations.

Private lenders in the United states were mindful that German reparation payments to the victorious Allied nations after World War I were often financed by U.S. investors lending to Germany (e.g., the Dawes Plan). Germany never repaid these loans. Given this history and

existing circumstances it was obvious that private lending facilities could not be expected to provide the credits necessary for European recovery after World War II.

The Keynes Plan, presented at the 1944 Bretton Woods conference, would require the United States, as the obvious major creditor nation, to accept the major responsibility for curing the international financial problems that would be associated with the post-war European nations need for U.S. imports. Keynes estimated that the European nations might require imports in excess of $10 billion to rebuild their economies. The U.S. representative to the Bretton Woods Conference, Harry Dexter White, rejected the Keynes Plan. Dexter White argued that Congress would be willing to provide, at most, $3 billion as the U.S. contribution to solving this post war international financial problem.

The White Plan created the International Monetary Fund (IMF) whose function it would be to provide short-term loans to nations running unfavorable balances of trade. These loans were suppose to give the debtor nation time to get its economic house in order. The White Plan had the U.S. subscribing to a maximum of $3 billion as its contribution to the IMF lending facilities. White's plan also developed another lending institution, now called the World Bank, that would borrow funds from the private sector. These funds would then be used to provide long-term loans for rebuilding capital facilities and making capital improvements initially in the war-torn nations and later in the less developed countries. White's plan was basically the institutional arrangements adopted at the Bretton Woods Conference.

Under the White Plan, international loans from the IMF or the World Bank were the only available sources for financing the huge volume of U.S. imports that the wartorn nations would require immediately after the war. This would result in a huge international indebtedness of these nations. Even if the nations could obtain a sufficient volume of loans to finance their import necessities for rebuilding, servicing the resultant immense debt of these nations would require them to accept the main burden of adjustment by "tightening their belt". To tighten the nation's belt is a catch phrase to indicate that the debtor nations have to reduce dramatically their need for imports. The ultimate result would be a significant decline in the standard of living in these countries which probably would have led to political and social unrest in these nations..

Even if the debtor nations had abandoned the Bretton Woods fixed exchange rate mechanism and opted for a depreciating currency under a flexible exchange rate system to force the European residents to "tighten their belts", the result would have reduced the Europeans to almost a starvation level of income. Accordingly, any conventional free market solution available to the European nations after World War II to obtain U.S. imports for rebuilding their economy would have so depressed the standard of living as to possibly induce political revolutions in most of Western Europe.

To avoid the possibility of many European nations facing a desperate electorate that might opt for a communist system when faced with the dismal future that the conventional Bretton Woods system offered, the United States produced the Marshall Plan and other foreign grants and aid programs to assure that Communism did not spread West from the Soviet Union. Despite White's argument that the U.S. would not be willing to give more than $3 billion to solving this international payments problem, the Marshall Plan provided $5 billion in foreign aid in 18 months and a total of $13 billion in four years. (Adjusted for inflation, this

sum is equivalent to approximately $135 billion in 2007 dollars.) The Marshall plan was essentially a four year gift of $13 billion worth of U.S. exports to the war devastated nations

The Marshall plan gift gave the recipient nations claim to approximately 2 per cent of the total output (Gross Domestic Product) of the United States for four years from 1947 to 1951.. Yet no U.S. resident felt deprived of goods and services even as the Marshall Plan recipients essentially siphoned off $2 out of every $100 worth of goods produced in the United States. Real gross national income (GNP) per capita in the United States (a measure of the U.S. standard of living) during the first year of the Marshall Plan was still 25% larger than it had been in the last peacetime year of 1940. Per capita GNP continued to grow throughout the 1950s.

Despite Americans giving away 2 per cent of their income per annum, there was no real sacrifice for Americans associated with the Marshall Plan as the remaining income was significantly greater than pre-war levels. The resulting U.S. exports that Marshall plan funds recipient nation's were able to purchase created significant increases in employment in U.S. export industries just as the federal government severely reduced its spending while several million men and women were discharged from the U.S. armed forces and entered the U.S. labor force looking for jobs. For the first time in its history, the United States did not suffer from a severe recession immediately after the cessation of a major war. The U.S. and most of the rest of the world experienced an economic "free lunch" as both the potential debtor nations and the creditor nation experienced tremendous real economic gains resulting from the Marshall Plan and other foreign aid give aways.

By 1958, however, although the U.S. still had an annual goods and services export surplus of over $5 billion, U.S. governmental foreign and military aid exceeded $6 billion, while there was a net private capital outflow of $1.6 billion. The post-war U.S. potential surplus on international payments balance was at an end.

As the U.S. current international payments account swung into deficit in 1958 other nations began to experience payments surpluses. These credit surplus nations did not spend their entire payments surpluses. Instead they used a portion of their annual dollar surpluses to purchase international liquid assets in the form of gold reserves from the U.S. Federal Reserve System. For example, in 1958, the U.S. lost over $2 billion in gold reserves to foreign central banks. These trends accelerated in the 1960s, partly as a result of increased U.S. military and financial aid responses to the construction of the Berlin Wall in 1961 and later because of the U.S.'s increasing involvement in Vietnam. At the same time, a rebuilt Europe and Japan became important producers of exports so that the rest of the world became less dependent on the U.S. exports.

Still the United States maintained a positive merchandise trade balance until the first oil price shock in 1973. More than offsetting this merchandise trade surplus during most of the 1960s, however, were foreign and military aid plus net capital outflows from the United States so that the United States experienced an annual unfavorable balance of international payments. The Bretton Woods system had no way of automatically forcing the emerging surplus nations to stop accumulating dollar surplus and instead step into the creditor adjustment role that the U.S. had been playing since 1947. Instead the surplus nations continued to convert some portion of their annual dollar surpluses into calls on U.S. gold reserves. The seeds of the destruction of the Bretton Woods system and the golden age of

economic development were being sown as surplus nations drained gold reserves from the United States.

When the U.S. closed the gold window and unilaterally withdrew from Bretton Woods in 1971, the last vestige of Keynes's enlightened international monetary approach was lost.

4. Changing the international payments system

The 1950-1973 global golden age of economic development required international institutions and U.S. government foreign aid policies that operated on principles inherent in the Keynes Plan with the creditor nation accepting the major responsibility for solving international payments imbalance. The formal Breton Woods agreement, however, did not require creditor nations to take such actions. Since 1973, the international payments system has been one where international payments considerations often impede any rapid economic growth of many of the developed nations of the world while severely constraining the growth of the least developed countries (LDCs).

Utilizing Keynes's general theory principles, it is possible to update Keynes's original plan for a postwar international monetary scheme that will promote global economic prosperity. For "to suppose [as the conventional wisdom does] that there exists some smoothly functioning automatic [free market] mechanism of adjustment which preserves equilibrium if only we trust to methods of *laissez-faire* is a doctrinaire delusion which disregards the lessons of historical experience without having behind it the support of sound theory" [Keynes, 1941, pp. 21-2]

In the 21st century interdependent global economy, a substantial degree of economic cooperation among trading nations is essential. The original Keynes Plan for reforming the international payments system called for the creation of a single Supranational Central Bank. The clearing union institution suggested *infra* is a more modest proposal than the Keynes Plan, although it operates under the same economic principles laid down by Keynes. Our proposal is aimed at obtaining an acceptable international agreement (given today's political climate in most nations) that does not require surrendering national control of either local banking systems or domestic monetary and fiscal policies. Each nation will still be able to determine the economic destiny that is best for its citizens without fear of importing deflationary repercussions and financial disruptions from their trading partners. Each nation, however, will not be able to export any domestic inflationary forces to their international neighbors.

What is required is a closed, double-entry bookkeeping clearing institution to keep the payments 'score' among the various trading nations plus some mutually agreed upon rules to create and reflux international liquidity while maintaining the purchasing power of the created international currency of the international clearing union. The eight provisions of the international clearing system suggested in this papter meet the following criteria. The rules of the proposed system are designed:

> [1] to prevent a lack of global effective demand either due to a liquidity problem arising whenever any nation(s) holds either excessive idle reserves or drain reserves from the system, or a financial crisis occurring in any nation's banking and asset

marketing system spilling over to create liquidity and insolvency problems for residents and financial institutions in other nations.

[2] to provide an automatic mechanism for placing a major burden of correcting international payments imbalances on the surplus nations,

[3] to provide each nation with the ability to monitor and, if desired, to control international movements of funds to prevent contagion from financial problems occurring in other nations, tax evasion money movements, earnings from illegal activities, and even funds that finance terrorist operations, and finally

[4] to expand the quantity of the liquid asset used in settling international contracts (the asset of ultimate redemption) as global capacity warrants while protecting the purchasing power of this asset.

5. There are eight major provisions in this clearing system proposal.

Provision One

The unit of account and ultimate reserve asset for international liquidity is the International Money Clearing Unit (IMCU). All IMCU's can be held only by the central banks of nations that abide by the rules of the clearing union system. IMCUs are not available to be held by the public.

Provision Two

Each nation's central bank or, in the case of a common currency (e.g., the Euro) a currency union’s central bank, is committed to guarantee one way convertibility from IMCU deposits at the clearing union to its domestic money. Each central bank will set its own rules regarding making available foreign monies (through IMCU clearing transactions) to its own bankers and private sector residents.

Since Central Banks agree to sell their own liabilities (one-way convertibility) against the IMCU only to other Central Bankers via the International Clearing Union while they simultaneously hold only IMCUs as liquid reserve assets for international financial transactions, there can be no draining of reserves from the international payments system. Ultimately, all major private international transactions clear between central banks' accounts in the books of the international clearing institution.

The guarantee of only one-way convertibility permits each nation to institute controls and regulations on international capital fund flows if necessary. The primary economic function of these international capital flow controls and regulations is to prevent rapid changes in the bull-bear sentiment from overwhelming the market maker and inducing dramatic changes in international financial market price trends that can have devastating real consequences.

There is a spectrum of different capital controls available. At one end of the spectrum are controls that primarily impose administrative constraints either on a case-by-case basis or an expenditure category basis. Such controls may include administrative oversight and

control of individual transactions for payments to foreign residents (or banks) often via oversight of international transactions by banks or their customers. Other capital controls might include the imposition of taxes (or other opportunity costs) on *specific* international financial transactions, e.g., the 1960s United States Interest Equalization Tax.

Finally there can be many forms of monetary policy decisions undertaken to affect net international financial flows, e.g., raising the interest rate to slow capital outflows, raising bank reserve ratios, limiting the ability of banks to finance purchases of foreign securities, and regulating interbank activity.

The IMF, as lender of last resort during the 1997 East Asian contagion crisis, imposed the same conditions on all nations requiring loans for international liquidity purposes. The resulting worsening of the situation should have taught us that in policy prescriptions one size does not fit all situations. Accordingly, the type of capital regulation a nation should choose from the spectrum of tools available at any time will differ depending on the specific circumstances involved. It would be presumptuous to attempt to catalog what capital regulations should be imposed for any nation under any given circumstances. Nevertheless, it should be stressed that regulating capital movements may be a necessary *but not a sufficient* condition for promoting global prosperity. Much more is required.

If any government objects to the idea that the IMCU Provision two provides governments with the ability to limit the free movement of "capital" funds, then this nation is free to join other nations of similar attitude in forming a regional currency union and thereby assuring a free flow of funds among the residents of the currency union.

Provision Three

Contracts between private individuals in different nations will continue to be denominated into whatever domestic currency permitted by local laws and agreed upon by the contracting parties. Contracts to be settled in terms of a foreign currency will therefore require some publically announced commitment from the central bank (through private sector bankers) of the availability of foreign funds to meet such private contractual obligations.

Provision Four

The exchange rate between the domestic currency and the IMCU is set initially by each nation or currency union’s central bank -- just as it would be if one instituted an international gold standard. Since private enterprises that are already engaged in trade have international contractual commitments that would span the changeover interval from the current system, then, as a practical matter, one would expect, but not demand, that the existing exchange rate structure (with perhaps minor modifications) would provide the basis for initial rate setting.

Provisions 7 and 8 *infra* indicate when and how this nominal exchange rate between the national currency and the IMCU would be changed in the future.

Provision Five

An overdraft system should be built into the clearing union rules. Overdrafts should make available short-term unused creditor balances at the Clearing House to finance the

productive international transactions of others who need short-term credit. The terms will be determined by the *pro bono publico* clearing union managers.

Provision Six

A trigger mechanism to encourage any creditor nation to spend what is deemed (in advance) by agreement of the international community to be "excessive" credit balances accumulated by running current account surpluses. These excessive credits can be spent in three ways: (1) on the products of any other member of the clearing union, (2) on new direct foreign investment projects, and/or (3) to provide unilateral transfers (foreign aid) to deficit members. Spending via (1) forces the surplus nation to make the adjustment directly by way of the trade balance on goods and services. Spending by way of (3) permits adjustment directly by the capital account balance, while (2) provides adjustment by the capital accounts (without setting up a contractual debt that will require reverse current account flows in the future).

These three spending alternatives force the surplus nation to accept a major responsibility for correcting the payments imbalance. Nevertheless this provision gives the surplus country considerable discretion in deciding how to accept the onus of adjustment in the way it believes is in its residents best interests. It does not permit the surplus nation to shift the burden to the deficit nation(s) via contractual requirements for debt service charges independent of what the deficit nation can afford. The important thing is to make sure that continual oversaving by the surplus nation in the form of international liquid reserves are not permitted to unleash depressionary forces and/or a building up of international debts so encumbering as to impoverish the global economy of the 21st century.

In the unlikely event that the surplus nation does not spend or give away these credits within a specified time, then the clearing agency would confiscate (and redistribute to debtor members) the portion of credits deemed excessive. This last resort confiscatory action (a 100% taxes on excessive liquidity holdings) would make a payments adjustment via unilateral transfer payments in the current accounts.

Under either a fixed or a flexible rate system with each nation free to decide on how much it will import, some nations will, at times, experience persistent trade deficits merely because their trading partners are not living up to their means -- that is because other nations are continually hoarding a portion of their foreign export earnings (plus net unilateral transfers). By so doing, these oversavers are creating a lack of global effective demand. Under Provision 6, deficit countries would no longer have to deflate their real economy in an attempt to reduce imports and thereby reduce their payment imbalance because others are excessively oversaving. Instead, the system would seek to remedy the payment deficit by increasing opportunities for deficit nations to sell abroad and thereby work their way out of their deteriorating debtor position.

Provision Seven

A system to stabilize the long-term purchasing power of the IMCU (in terms of each member nation's domestically produced market basket of goods) can be developed. This requires a system of fixed exchange rates between the local currency and the IMCU that changes only to reflect permanent increases in efficiency wages. This assures each central bank that its holdings of IMCUs as the nation's foreign reserves will never lose purchasing

power in terms of foreign produced goods. If a foreign government permits wage-price inflation to occur within its borders, then, the exchange rate between the local currency and the IMCU will be devalued to reflect the inflation in the local money price of the domestic commodity basket. For example, if the rate of domestic inflation was 5 cent, the exchange rate would change so that each unit of IMCU could purchase 5 per cent more of the nation's currency.

If, on the other hand, increases in productivity lead to declining production costs in terms of the domestic money, then the nation with this decline in efficiency wages [say of 5 per cent] would have the option of choosing either [a] to permit the IMCU to buy [up to 5 per cent] less units of domestic currency, thereby capturing all (or most of) the gains from productivity for its residents while maintaining the purchasing power of the IMCU, or [b] to keep the nominal exchange rate constant. In the latter case, the gain in productivity is shared with all trading partners. In exchange, the export industries in this productive nation will receive an increasing relative share of the world market.

By devaluing the exchange rate between local monies and the IMCU to offset the rate of domestic inflation, the IMCU's purchasing power is stabilized. By restricting use of IMCUs to Central Banks, private speculation regarding IMCUs as a hedge against inflation is avoided. Each nation's rate of inflation of the goods and services it produces is determined solely by (a) the local government's policy toward the level of domestic money wages and profit margins vis-a-vis productivity gains, i.e., the nation's efficiency wage. Each nation is therefore free to experiment with policies for stabilizing its efficiency wage to prevent inflation as long as these policies do not lead to a lack of global effective demand. Whether the nation is successful or not in preventing domestic goods price inflation, the IMCU will never lose its international purchasing power in terms of any domestic money. Moreover, the IMCU has the promise of gaining in purchasing power over time, if productivity grows more than money wages and each nation is willing to share any reduction in real production costs with its trading partners.

Provision 7 produces a system designed to, at least, maintain the relative efficiency wage parities amongst nations. In such a system, the adjustability of nominal exchange rates will be primarily (but not always, see Provision 8) to offset changes in efficiency wages among trading partners. A beneficial effect that follows from this proviso is that it eliminates the possibility that a specific industry in any nation can be put at a competitive disadvantage (or secure a competitive advantage) against foreign producers solely because the nominal exchange rate changed independently of changes in efficiency wages and the real costs of production in each nation.

Consequently, nominal exchange rate variability can no longer create the problem of a loss of competitiveness due solely to the overvaluing of a currency as, for example, experienced by the industries in the American "rust belt" during the period 1982-85. Even if temporary, currency appreciation independent of changes in efficiency wages can have significant permanent real costs as domestic industries abandon export markets and lose domestic market business to foreign firms and the resultant existing excess plant and equipment is cast aside as too costly to maintain.

Provision 7 also prevents any nation from engaging in a beggar-thy-neighbor, export-thy-unemployment policy by pursuing a real exchange rate devaluation that does not reflect changes in efficiency wages. Once the initial exchange rates are chosen and relative

efficiency wages are locked in, reduction in real production costs which are associated with a relative decline in efficiency wages is the main factor (with the exception of Provision 8) justifying an adjustment in the real exchange rate. Although Provision 6 prevents any country from piling up persistent excessive surpluses, this does not mean that it is impossible for one or more nations to run persistent deficits. Consequently Provision 8 infra provides a program for addressing the problem of persistent international payment deficits in any one nation.

Provision Eight

If a country is at full employment and still has a tendency toward persistent international deficits on its current account, then this is *prima facie* evidence that it does not possess the productive capacity to maintain its current standard of living. If the deficit nation is a poor one, then surely there is a case for the richer nations who are in surplus to transfer some of their excess credit balances to support the poor nation. (This is equivalent t6o a negative income tax concept.) If the deficit nation is a relatively rich country, then the deficit nation must alter its standard of living by reducing its relative terms of trade with its major trading partners. Rules, agreed upon in advance, would require the trade deficit rich nation to devalue its exchange rate by stipulated increments per period until evidence becomes available to indicate that the export-import imbalance is eliminated without unleashing significant recessionary forces.

If, on the other hand, the payment deficit persists despite a continuous positive balance of trade in goods and services, then there is evidence that the deficit nation might be carrying too heavy an international debt service obligation. The *pro bono* officials of the clearing union should bring the debtor and creditors into negotiations to reduce annual debt service payments by [1] lengthening the payments period, [2] reducing the interest charges, and/or [3] debt forgiveness.

It should be noted that Provision 6 embodies Keynes's innovative idea that whenever there is a persistent (and/or large) imbalance in current account flows, whether due to capital flight or a persistent trade imbalance, there must be a built-in mechanism that induces the surplus nation(s) to bear a major responsibility for eliminating the imbalance. The surplus nation must accept this burden for it has the wherewithal to resolve the problem.

In the absence of Provision 6, under any conventional system, whether it has fixed or flexible exchange rates and/or capital controls, there can ultimately be an international liquidity crisis (as any persistent current account deficit can deplete a nation's foreign reserves) that unleashes global depressionary forces. Thus, Provison 6 is necessary to assure that the international payments system will not have a built-in depressionary bias. Ultimately then it is in the self-interest of the surplus nation to accept this responsibility, for its actions will create conditions for global economic expansion some of which must redound to its own residents. Failure to act, on the other hand, will promote global depressionary forces which will have some negative impact on its own residents

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