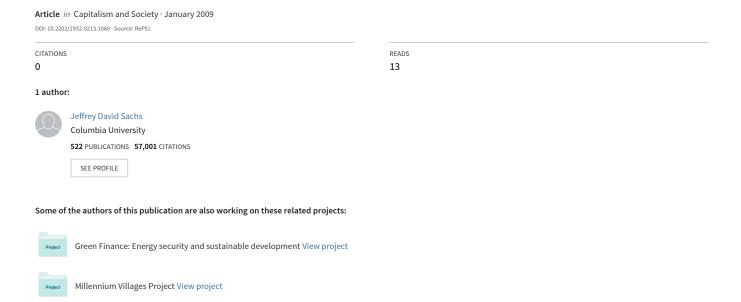
## Comment on "Financial Markets and the State: Long Swings, Risk, and the Scope of Regulation" (by Roman Frydman and Michael D. Goldberg)



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## Comment on "Financial Markets and the State: Long Swings, Risk, and the Scope of Regulation" (by Roman Frydman and Michael D. Goldberg)

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The Great Crash of 2008 was a systems failure, in the sense that it arose from dynamic processes involving a large number of interconnected actors. As in many complex systems, the dynamic behavior of the economy as a whole could not be predicted by examining the state of individual actors within the system. Rather, the collapse "emerged" in a somewhat unpredictable manner through the dynamic interactions among actors. Roman Frydman and Michael Goldberg brilliantly add to our understanding of the recent systems collapse, both through their cogent critique of the prevailing efficient markets (or Rational Expectations Hypothesis, REH) paradigm, which basically denies the possibilities of such system failures, and by postulating one key driver of system-wide failure, specifically the role of imperfect economic knowledge among market participants.

I would like to suggest that there are four aspects of the economic system that contributed to the 2008 collapse and others like it. The first of these is indeed imperfect knowledge, as powerfully emphasized by Frydman and Goldberg. Imperfect knowledge, an intrinsic feature of complex and evolving economic systems, permits long excursions of key economic prices from historical norms, thereby setting up the possibility of a crash as prices and the real economy return to those norms. The most important of these price excursions in the past thirty years have involved land prices (in Japan's bubble), exchange rates (on several occasions), equity prices (especially in the Dot.com bubble), and housing prices (in the most recent bubble). In most of these episodes, major deviations of key prices from historical norms were encouraged by at least two economy-wide phenomena: easy credit from the central bank (thereby feeding the run-up in asset prices) and a long period of preceding economic growth, which was extrapolated by market participants as a new "golden age" of unfettered prosperity. Another accompaniment of price distortions in many cases was a round of financial deregulation, bringing new investors into new sectors of the economy.

The second aspect of system collapse, also powerfully emphasized by Frydman and Goldberg, and championed by George Soros, is the positive feedback from the price excursions to real systemic outcomes, which in turn amplify the price excursions. High housing prices, for example, led to more mortgage lending which drove up housing prices further, which led to even more mortgage lending, in an upward spiral – until a ceiling was reached in 2006, setting the stage for the subsequent crash. Soros has labeled this positive feedback "reflexivity," a term that mainstream economists resist, but one which seems destined to enter the economics toolkit.

The third aspect of system performance is the phenomenon of *cascading failure*, which suggests that a local breakdown of financial relations can quickly cascade throughout the entire global financial system, just as a power outage in one part of a grid can quickly cascade through an entire grid. These two phenomena of financial panics and power outages are actually closely related.

When a transformer goes down in one part of the power grid, electricity is shunted to other lines, which are then overloaded to the point of failure. These failures then cascade from site to site. In a banking crisis, a bank is attacked by its creditors, forcing that bank to pull in credit lines from other banks, so that a process of nearly instantaneous "deleveraging" sweeps through the financial arteries of the world economy. Lehman Brothers and AIG failed, and soon enough the banks in Europe, South Korea, Brazil, Iceland, and beyond were seeing the credit lines pulled.

The fourth aspect of system performance contributing to failure was the system-wide collapse of prudential regulation in the decade preceding the crisis. This was partly the result of regulators' difficulty in keeping up with financial innovations (such as credit default swaps, CDOs, CDOs-squared, CDOs-cubed, and so forth), but even more it was an avoidable regulatory failure of system managers at the Federal Reserve and other agencies assigned to limit financial risks. Part of that avoidable failure was ideological, of the sort that Frydman and Goldberg brilliantly skewer in their critique of the Rational Expectations Hypothesis (REH). True believers in perfect markets had their day. The ultralibertarian Ayn Rand inspired Alan Greenspan to refrain from prudential regulation, while Greenspan's technocratic underlings were often inspired by the laissez-faire policy conclusions of Robert Lucas and Eugene Fama. Another part of the deregulation, however, was just money politics and influence peddling. In our modern Gilded Age from the 1980s onward, Wall Street bought off Congress, the White House, and the regulatory agencies through aggressive lobbying, revolving-door career paths linking Wall Street and Washington, and ample campaign contributions.

A complex system vulnerable to failure needs a control strategy that responds to the four points of vulnerability. Frydman and Goldberg suggest important ways to address the first two areas of vulnerability: imperfect knowledge and reflexivity. They point out with great persuasiveness that the REH revolution of the 1980s till now in academic economics has left economists and regulators without the tools to diagnose prolonged and dangerous excursions of key prices – interest rates, exchange rates, housing prices, equity prices – from historical norms. The REH model assumes that expectations are simply implied by the economic system itself, so that expectations can have no *independent* role in market outcomes. This is wrong. Since economic knowledge is intrinsically imperfect, each economic agent is forced to form expectations without any rigorous grounding in an accepted model. Expectations therefore constitute an independent factor in the economy, not simply a rational reflection of the economic structure itself. Since those expectations reflexively feed back into market outcomes (e.g. into housing construction or the startup of Dot.coms),

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excursions of expectations from reasonable ranges can create the conditions for market crashes.

Frydman and Goldberg do not posit that policy makers can outperform the market, but they do assume that both policy makers and the market can measure when key economy-wide prices are outside of historical ranges, thereby raising red flags about the possibility of subsequent reversals, and the need to take precautionary actions (e.g. tightened credit standards, increased capital adequacy standards, increased guaranteed credit lines, and/or reduced leverage ratios). This precautionary approach could have paid off several times in the past twenty years, for example in the case of the dizzying run-up in Tokyo land values (which subsequently crashed), the Dot.com boom at the end of the 1990s, and the house price bubble in the past decade, which finally peaked in 2006 and then contributed to the subsequent crash.

I would suggest that such benchmarking would be very helpful, but not sufficient to avoid crises. A full package of reforms requires that we address factors three and four as well: the cascading of financial distress and the failure of prudential regulations. The risks of cascading bank failures are well recognized, and led Walter Baghot to call for "lender of last resort" facilities from the Central Bank some 140 years ago. Famously, even free-marketeers Milton Friedman and Anna Schwartz attributed the US bank failures of 1931 to 1993 to a chain reaction rather than to market fundamentals. As they famously wrote:

Yet it is also true that small events at times have large consequences, that there are such things as chain reactions and cumulative forces. It happens that a liquidity crisis in a unit fractional reserve banking system is precisely the kind of even that can trigger – and often has triggered – a chain reaction. And economic collapse often has the character of a cumulative process. Let it go beyond a certain point, and it will tend for a time to gain strength from its own development as its effects spread and return to intensify the process of collapse. Because no great strength would be required to hold back the rock that starts a landslide, it does not follow that the landslide will not be of major proportions. (Friedman and Schwartz, *The Great Contraction*, p. 207)

There are several regulatory aspects that can help limit cascading failures. The first is the regulation of counterparty risk, so that the failure of one institution does not give rise to panic regarding countless other institutions. When AIG failed a year ago, throwing into question the entire credit default swap (CDS) market, the panicked uncertainty about counterparty risk was sufficiently high to freeze inter-bank loans throughout the world economy. Similarly, Lehman's

default to the Reserve Primary money market fund, causing the latter to "break the buck," probably led to a cascade of cash withdrawals from the money markets, thereby leading to a failure of the commercial paper market. Financial instruments such as credit default swaps should be regulated and traded through formal exchanges, precisely to limit counterparty risk and cascading collapses. The Fed and other regulators should also use their policy tools, notably lender-of-last resort facilities and the tools for managing liquidations (e.g. deposit insurance and the protection of certain credit classes), to prevent the onset of cascading liquidity crises when financial enterprises fail.

To the extent that regulators had their eye on the ball at all in 2004-8, they focused on one institution at a time, which is the traditional method of supervision, rather than on the functioning of the entire system. The Fed, Comptroller of the Currency, FDIC, and other regulators evidently paid little attention to whether the world system would seize up in the event of the failure of AIG or Lehman. This is another fallacy of composition—believing that a system can be regulated by the regulation of its individual components. Yet cascading failure is an emergent property, not the property of an individual firm.

Of course the fourth reason for system failure is the failure of the entire regulatory apparatus. We need to overcome three weaknesses. The first, as just mentioned, is analytical. Regulation should be directed not just at individual firms but at system stability. The second weakness is ideological. There should be no place for REH in the corridors of the Fed and other regulatory agencies. The focus should not be on the "self organization" of supposedly efficient markets, but on what can go wrong. The third weakness, however, is trickier: the political power of Wall Street. The ability of Wall Street to buy Washington, through vast lobbying outlays, massive campaign contributions, and cushy jobs on rotation between NY and Washington needs to be brought under control. Of all economic sectors, finance was the biggest lobbyist during 1998-2009, spending \$3.7 billion in the period (healthcare, not surprisingly, was second). The outlays, while modest compared to the size of the economy and the size of the financial crisis, were large enough to employ a lot of the Washington elite, and to keep Congress from asking questions that might have saved the world economy.

In the end, therefore, we need regulations that recognize Imperfect Knowledge, Imperfect Control (because of cascading failures), and Imperfect Politics. We need a financial system that is resilient, guarding against failures rather than reveling in booms, and immunized against the powerful vested interests of big money and finance that can derail the economy and even the democracy. It's a tall order, but Frydman and Goldberg (and Soros) have provided an invaluable intellectual base to get us started, by emphasizing our need to accept the imperfections of our knowledge as the epistemological basis for our actions.

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