

Financial Feedback Theory

I recently read an interesting article by Sebastian Mallaby in the Washington Post, commenting on a proposal by Barney Frank. Unlike most conservative diatribes against Frank, Mallaby takes a good analytic look at his proposal. The full article can be read at:

<http://www.washingtonpost.com/wp-dyn/content/article/2009/03/01/AR2009030101574.html>

His initial comments are these:

“Barney Frank, the thoughtful chairman of the House Financial Services Committee, wants to create a new “systemic risk regulator.” This general concept has been endorsed by some extremely distinguished economists. Nevertheless, the Frank proposal is dubious.

“Frank and his allies begin with the accurate insight that existing regulation is inadequate. We have a set of overseers who evaluate financial institutions one by one, but “systemic risk” is created by the interactions between institutions. A bank or hedge fund can take what looks like a reasonable bet on its own terms, but it still may blow up if others are making the same bet.

“Consider a bank that takes \$1 billion of its capital and \$4 billion of debt and buys a \$5 billion portfolio of Latin American bonds. It figures that even if the bonds go down, they will take at least a month to fall by a fifth, allowing plenty of time to get out before the \$1 billion cushion is vaporized. Based on the history of the bond market, this may be a perfectly smart bet. But if a hundred other banks make the same trade, the calculation is thrown off. If something goes wrong, all these banks will run for the exit at once. The market will crash in a day, not a month. Some will get stuck inside the building.”

His major point? A regulatory system that evaluates financial institutions individually misses the big picture but to monitor the unknown collection of financial investments is impossible. He talks about costs of such a system, especially if its effectiveness is suspect. He finishes with:

“A central bank's credibility is precious and fragile. Saddling the Fed with mission impossible could damage the best institution that we have for fighting financial crises.”

It occurred to me that this is a classical case of trying to stabilize a dynamic condition that is reactive to simultaneous stimuli. My daughter, Terrie, for many years a respected stock trader on Wall Street, said this to me when the

market began to unravel. She said that normally “free trade” dynamics work. Good decisions are rewarded by growth and bad ones cause businesses to fail. But, she said, too many parameters happened at the same time around November and all the dynamic economic indicators made the predictor models unstable. Hence, they couldn’t predict anything. A perfect example of what Mr. Mallaby is describing.

That got me to thinking about my own field of electronics and the theories related to servomechanisms and circuits designed to be self-correcting. Without going into the theoretical details, consider the definition of a servo:

“An automatic control system in which the output is constantly or intermittently compared with the input through feedback so that the error or difference between the two quantities can be used to bring about the desired amount of control and stability.”

A good example of a servomechanism control system is the cruise control in an automobile. As a hill approaches which tends to slow the car because of gravity, the cruise control senses this additional drag and applies automatically more gas to keep the car going up the hill at the same speed. The power window is not a servomechanism since there is no automatic feedback. The driver does this by observation. Float regulators in a toilet is another example.

Now let’s look at Mr. Mallaby’s analysis of Barney Frank’s suggestion. His proposed committee would be trying to feedback corrective data into a crowded banking system. This is, at least at a high level, similar to feedback theory in servomechanisms. The group would sample bank behavior, try to guess irregularities and prevent abuses before they occur, thus “stabilizing” the process Mr. Frank wishes to fix.

This works for circuits and control systems, but the same kind of model proposed by Mr. Frank doesn’t collect the sample often enough, can’t feed the information back into the system fast enough and is, as Mr. Mallaby points out, very expensive and unpredictable. The unpredictable output (selling or buying speculative bonds) doesn’t allow feedback in time to change the input and stabilize the mechanism.

So much for Congressman Frank’s suggestion. In any case, as Mr. Mallaby says, existing regulation isn’t working. So what should be done?

Conservatives will say “Let it alone, the bad decisions will sort things out by themselves.” In fact, my conservative friend, Charlie, says, cynically, “Well, just maybe the inefficient over-leveraged concerns are flushed out of the system, their resources are bought at bargain prices and converted to efficient industries – sounds like a radical concept some would call capitalism. (And we all know how bad that is – somebody is likely to make money doing it).

But nobody knows how much havoc this approach would cost the average person or the economy as a whole just as nobody really knows if the “stimulus” package will help in the short run. Totally unregulated banking has left a dozen banks dead or dying, several of the largest insurance companies gasping and big businesses like the auto manufacturers all but gone.

So... the real question is: if Barney Frank’s proposal isn’t going to make banking more predictable and stable and less subject to fraud or speculative investing, then what will? Or, to turn around the question, are Conservatives right: let the market kill whatever it is going to kill because that is the essence of capitalism?