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“This Time They Are More Interested”

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Truly new ideas don't emerge very often in economics, but it happens. Still less frequently do they turn out to be fundamentally important. If they find their way to the surface in the midst of a grave crisis, as happened during the 1930s, they may be electrifying.

When “Leverage Cycles and the Anxious Economy,” by John Geanakoplos, of Yale University, and Ana Fostel, of George Washington University (and a recent Yale PhD), led off the September *American Economic Review* last year, it was clear to those who read it that the article was important, at least in the everyday sense of the word. There is only one pole position in each issue, after all.

Its discussion of why emerging market economies suffer from extreme volatility, their asset markets often shutting down altogether for a time, struck a chord – especially since it applied equally to markets for emerging asset classes in general, including those for derivative securities. And the critical elements of the model had an intriguing ring: habitual optimists, pessimists, bad news and the condition the authors labeled “anxious,” meaning the state of affairs when bad news is widely known but its significance has not yet been widely agreed upon by market participants. Nineteenth century bankers, well acquainted with the phenomenon, called such moods “thundering.”

If the news grows worse, anxiousness will lead to panic. More frequently, indeed usually, markets revert to their normal state, the authors wrote. Investors in the grip of anxiousness must decide whether to cut their losses and sell, or to get back in to the market at bargain prices – a choice “sometimes described on Wall Street as whether to catch a falling knife.”

Later, I remembered hearing Geanakoplos give a lecture along somewhat similar lines in Seattle in 2000, as "Crises, Currencies and Collateral," from which, I think it is safe to say, I didn't recall a single word, including the key one, "collateral." I knew (only because he said so in the article) that his ideas on the topic went back to the alternately autobiographical and mathematical "Promises, Promises," in *The Economy as an Evolving Complex System II*, a conference volume from the Santa Fe Institute that appeared in 1997.

And, because I eventually read that piece, I understood that his initial attempt to grasp the problem of why promising markets may get out of hand and shut down altogether stemmed directly from his experience as head of fixed-income research at Kidder Peabody, the highly innovative financial markets unit of General Electric that virtually invented collateralized mortgage obligations (CMOs), which, wounded after one of its traders was caught in a fraud, flamed out memorably amid the credit crunch of 1994 and was sold to a competitor. (Remember Joseph Jett?)

It was only last week, when Geanakoplos gave "[The Leverage Cycle](#)" at the annual Conference on Macroeconomics of the National Bureau of Economic Research, in Cambridge, Mass., that it became clear that his idea was important, new, and probably fundamental, meaning that things in the world will change, perhaps substantially, as a result.

Partly it was the spectacle of an outsider, a mathematical economist, addressing the high priests of the profession, its macroeconomists (once again in the tell-tale lead-off spot). Mainly it was the force of his argument.

Geanakoplos offered a clear and straightforward explanation of the path by which the world had gotten into the current mess. He shed fresh light on the halting steps now being taken to get out of it.

For at least a century, he noted, economists have been accustomed to thinking of the interest rate as the most important variable in the economy – lower it to speed things up, raise it to slow them down. Yet especially in times of crisis, collateral demands – alternatively, margin requirements, loan-to-value ratios, leverage rates or "gearing" – become much more important.

Everybody knows that when interest rates go down, prices rise. Less widely recognized is that when margin requirements go down – say, the down payment on a house – prices rise too, often even more. Without some form of control, leverage becomes too high in boom times, and asset prices soar disproportionately. When they crash, leverage crashes with them, and then prices suddenly are too low. This is the leverage cycle, Geanakoplos says, and the current crisis is the result of a particularly virulent specimen. Intervention can mitigate its worst effects.

Central banks, therefore, should rethink their priorities. The Fed should learn to manage system-wide leverage, he said, reining in on it in ebullient times and propping it up in anxious times, in order to prevent the worst outcomes. Leverage cycles happen not because people are stupid, or because they ignore danger signs. It's in the nature of competition to drive leverage to unsustainable levels, whereupon it collapses, with various effects.

The financial derivatives crisis in 1994 that bankrupted Orange County, California, was the tail-end of a leverage cycle, Geanakoplos said. So was the emerging-markets financial crisis of 1998, which wrecked the giant Long-Term Capital Management hedge fund. And so is the global recession of the present day – the result of a double leverage cycle, one in mortgage-backed securities and the other in housing, both fueled by plentiful savings from China, and aggravated towards the end by the appearance of a further source of leverage – an enormous market for credit default swaps. Leverage cycles are an unavoidable part of life in modern capitalist economies. They will continue in the future, but they don't have to be so mysterious or untamed as this one, as long as the Fed acts to moderate them.

The idea that some sort of credit cycle has been at work for the past several centuries is hardly altogether new, of course. For thirty years, Hyman Minsky and Charles P. Kindleberger have been the standard sources on the mechanics of recurrent financial crises, and the great English financial journalist Walter Bagehot for a hundred years before them. But their arguments remained outside the consensus that is summarized in a standard introductory economics text, and only irregularly informed the views of policymakers. Many promising skeins of research have erupted in technical economics in the last few years — on contagion, flights to quality and other sorts of funding constraints. Hyun Shin, of Princeton University (a discussant at last week's session), and Anil Kashyap, of the University of Chicago's Graduate School of Business, have begun working on leverage, too.

And the fundamental insight – that a single loan requires not one but two terms to be negotiated, and that one may become much more important than the other in certain situations was clear enough to Shakespeare four hundred years ago. Wrote Geanakoplos: "Who can remember the interest rate that Shylock charged Antonio? But everybody remembers the pound of flesh that Shylock and Antonio agreed upon as collateral. The upshot of the play, moreover, is the regulatory authority (the court) decides that the collateral level Shylock and Antonio agreed upon was socially suboptimal, and the court decrees a different collateral—a pound of flesh but not a drop of blood." Thus did the *The Merchant of Venice* end happily, not with a cramdown, but with very different terms if the loan were to be foreclosed.

The trick, Geanakoplos says, is to recognize that the tendency to increasing leverage is part of the process – and that collateralization generates bigger and bigger effects on assets prices as the cycle rolls on, until, in due course, for one reason or another, participants eventually become uneasy with the situation, and the cycle comes to a crashing halt. To reduce the foreclosure mess (the paralyzing bad news in the current situation), he recommends

Fed-mandated principal write-downs for non-prime borrowers whose loans are underwater. To stop the deleveraging, he says, the Fed should prop up leverage at moderate levels, even if the market demands more collateral. To replace the natural optimists who have gone broke, the government must step in and do some buying. That's what the Troubled Assets Relief Program was for. And the market has been buoyed recently by the prospect of more of the same. But if the anticipated TARP II is not forthcoming, he says, the rescue effort probably back again. He summarized his recommendations for managing the current crisis last month in [an op-ed piece](#) in The New York Times.

[Geanakoplos](#), 54, has himself heretofore been a little hard to evaluate, a citizen of several different realms. US Junior Open Chess Champion at 15, he graduated from Yale in 1975 (a year after Paul Krugman), did his PhD under Kenneth Arrow at Harvard and was elected a fellow of the Econometric Society in 1990. Twice for short stints he directed the economics program at the Santa Fe Institute, spent those five part-time years at Kidder Peabody, and then graduated to a partnership at Ellington Capital Management, the hedge fund put together by some of the mortgage traders who lost their jobs when Kidder Peabody shut down. He has taught at Yale since he returned in 1980, as its James Tobin Professor of Economics since 1994.

"After it was published finally published, as "[Liquidity, Default, and Crashes](#)" in the conference volume in 2003, I gave that Seattle paper at every major university. It was exactly about the liquidity cycle, but it didn't really catch on," Geanakoplos recalled last week. The time for it wasn't ripe. The Asian financial crisis had been contained. No lender lost a dollar when LTCM failed. The consequences of the dot.com crash had been confined mainly to the stock market. For the next seven years, business as usual resumed. "This time they are more interested."

The unexpected appearance of a mathematical economist with a Wall Street background, armed with a formal model of the leverage cycle, a plan for ameliorating the present crisis, and suggestions for how to measure and manage the leverage cycle in the future, provided an unexpected jolt to the ordinarily relatively placid proceedings of the NBER Macro Conference. And on the meeting's second day, the macroeconomists returned to form with the topics that have preoccupied them for the last twenty years – debating the role of "technology shocks" in creating the business cycle.

But Geanakoplos' presence on the program was an indication of the centrality of his views in the present crisis. You can expect to hear much more about leverage cycles in the months to come.