

## Bubbles lurk in government debt

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By Kenneth Rogoff

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As the global economy reflates, many people are asking: "Is the next bubble in gold? Is it in Chinese real estate? Emerging market stocks? Or something else?" A short answer is "no, yes, no, government debt".

In my work on the history of financial crises with Carmen Reinhart, we find that debt-fuelled real estate price explosions are a frequent precursor to financial crises. A prolonged explosion of government debt is, in turn, an exceedingly common characteristic of the aftermath of crises. As for the probable non-bubbles, most emerging markets face better prospects in the decade ahead than does the developed world, and their central banks will probably want to continue diversifying their reserve holdings. Of course, huge volatility and corrections along the way are normal.

But a deeper question is whether economists really have any handle on ferreting out dangerous price bubbles. There is much literature devoted to asking whether price bubbles are possible in theory. I should know, I contributed to it early in my career.

In the classic bubble, an asset (say, a house) can have a price far above its "fundamentals" (say, the present value of imputed rents) as long as it is expected to rise even higher in the future. But as prices soar ever higher above fundamentals, investors have to expect they will rise at ever faster rates to make sense of ever crazier prices. In theory, "rational" investors should realise that no matter how many suckers are born every minute, it will be game over when house prices exceed world income. Working backwards from the inevitable collapse, investors should realise that the chain of expectations driving the bubble is illogical and therefore it can never happen. Are you reassured? Back in my days as a graduate student, I know I was.

But then along came some rather clever theorists who noticed that bubbles might still be possible (in theory), if we lived in a world where the long-run risk-adjusted real rate of interest is less than the trend growth rate of the economy. Basically, this condition raised the possibility that the bubble might grow slowly enough that houses would never cost more than world gross domestic product. Oh, no! But there soon followed empirical research reassuring us that we did not live in such a bizarre land.

Science moves on. Eventually, economists realised that in a real-world setting replete with non-linearities and imperfect markets, the same set of fundamentals can, in principle, support entirely different classes of equilibria. It all depends on how market participants co-ordinate their expectations. In principle, prices can jump suddenly and randomly from one equilibrium to another as if driven by sunspots. (I believe this notion of self-fulfilling multiple equilibria is quite closely related to George Soros's notion of "reflexivity".)

The problem of reflexive bubbles turns out to be even more acute when the government's policy objectives are inconsistent, as they so often are. For example, Maurice Obstfeld famously demonstrated how self-fulfilling investor expectations can bring down a fixed exchange rate. If investors gather with enough sustained force, and if the central bank lacks sufficient resilience and resources, investors can blow out a fixed exchange rate regime that might otherwise have lasted quite a while longer.

The real issue is not whether conventional economic theory can rationalise bubbles. The real challenge for investors and policymakers is to detect large, systemically dangerous departures from economic fundamentals that pose threats to economic stability beyond mere price volatility.

The answer, as Carmen Reinhart and I demonstrate drawing on centuries of financial crises, is to look particularly for situations with large rapid surges in leverage and asset prices, surges that can suddenly implode if confidence fades. When equity bubbles burst, investors who made money in the boom typically swallow their losses and the world trudges on, for example after the bursting of the technology bubble in 2001. But when debt markets collapse, there inevitably follows a long, drawn-out conversation about who should bear the losses. Unfortunately, all too often the size of debts, especially government debts, is hidden from investors until it comes jumping out of the woodwork after a crisis.

In China today, the real problem is that no one seems to have very good data on how debt is distributed, much less an understanding of the web of implicit and explicit guarantees underlying it. But this is hardly a problem unique to China. Even as published official government debt soars, huge off-balance-sheet guarantees and borrowings remain hidden for political expedience around the world. The timing is very difficult to call, as always, but even as global markets continue to trend up, it is not so hard to guess where bubbles might be lurking.

*Kenneth Rogoff is a professor at Harvard University and co-author (with Carmen Reinhart) of 'This Time is Different: Eight Centuries of Financial Crises'*

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