

The Financial Crisis and Alternative Explanations for the Collapse in Real Interest Rates

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Today's near zero nominal short-term interest rates across advanced economies partly reflect the fact that central banks have been undershooting their inflation targets, with many are expected to continue to do so for some time to come. Even long-term inflation expectations have been falling noticeably in recent years (figure 1). But most of the action has come in the collapse of the equilibrium short-term real interest rate, which is now closer to -1% on average across the advanced countries than to the +2% embodied in the original (1993) Taylor rule. The fall in real interest rates has been a global phenomenon, as Holton, Laubach and Williams (2016) and others have documented. Several recent studies (e.g. Gourinchas and Rey, 2016 and Gagnon, Johanssen and Lopez-Salido, 2016) find evidence that the current anomalous state could well continue for many years. Market measures of the real interest rate give a similar perspective. For example, the interest rate on a 10-year inflation indexed Treasury security fell from 2.7% before the financial crisis to almost -0.9% at the end of 2012; it is now near zero.

The factors underlying the remarkable fall in real interest rates have been much discussed, with many potential causes having been identified, and wide range of views on the quantitative significance of each. Indeed, there is a surfeit of theories on why real rates are so low, with man papers purporting to explain a large part of the anomaly based on just one or two factors.

One set of explanations involves increases in global savings due to the demographic cycle (see Carvalho, Ferrero, and Nechio (2016, or Gagno et al (2016) or to rapid growth in emerging markets with under-developed capital markets, or to the legacy of the Asian Financial

crisis of the late 1990s (most famously by Bernanke, 2005, but also for example Jin (2012).) Other explanations include lower trend productivity (as in Gordon, 2016), a trend fall in the cost of investment goods (e.g., Karabarbounis and Neiman, 2013), and a generalized trend fall in demand, perhaps due to rising inequality (Summers's 2013 "secular stagnation."). Reinhart and Sbrancia (2015) make the important point that financial regulation can have significant impact on the real interest rate on government bonds in particular, with financial liberalization playing a significant role in the process that drove up real interest rates after the 1970s, and the return of intense financial regulation playing a role after 2008. These, of course, are explanations of economists.

Yet, there is also a strong case to be made that a good part of the drop is a legacy of the financial crisis, broadly following the pattern of past deep systemic post-war financial crises as discussed by Reinhart and Rogoff (2009, 2014), but exacerbated first by the Eurozone debt crisis, and now more recently by a marked slowdown in China's growth. As Rogoff (2016) argues, the world might be more accurately characterized as being in the grips of a debt supercycle rather than secular stagnation.

How can it be that the legacy of deep systemic debt crises can have such long lasting effects? The reasons are many. Most broadly, perhaps, there is greater awareness (and heightened fear) of tail risks to growth, which can have dramatic effects both in financial markets and on investment. A rise in tail risks can lead to a large drop in the safe real interest rate as shown by Reinhart, Reinhart and Rogoff (2015) following very closely the model of Barro (2006); an increase in the probability of a rare disaster (which Barro defines a fall in consumption of 15%) of 1% can decrease the equilibrium real interest rate by as much as 5%. There are many nuances, depending on the exact threshold for rare disasters and assumptions

about the speed at which normal consumption is restored, but the basic point that concerns about tail events can have outsized effects on the real interest rate seems quite robust.¹ Kozlowski, Veldkamp and Venkateswaran (2016) use options prices to show that even though market volatility has greatly abated since the peak of the crisis, concern over tail risk remains very high. They go on to show that tail risk can explain a wide range of post-crisis phenomena, not least including low investment and a large (12%) drop in potential output.

Of course, the overhang of bad or precarious private debts can linger especially where regulatory forbearance allows banks to evergreen bad debts as, for example, was long the case in Japan and today is the case in Europe. Wealthy countries can do this in a way poorer countries cannot. Heightened post-crisis financial regulation and weak bank balance sheets have made it far more difficult for small- and medium-size businesses to gain access to credit markets, even controlling for slower trend growth. Geanakoplos (2014) points out that even though posted borrowing rates for small and medium-size borrowers appear to be quite low, there is considerable rationing. Many potential borrowers are shut out and others face far stricter collateral constraints than they did before the crisis; the same collateral no longer allows one to borrow nearly as much money.²

Post-crisis financial policies are generally presented as being a way to prevent future crises. Reinhart and Sbrancia (2015), however, argue that post-crisis, rich-country regulatory policies, have conveniently worked to significantly reduce the cost of borrowing for sovereigns,

¹ Goetzman, Kim and Shiller (2016) argue that investors far overestimate the odds of one day stock market crashes, but of course it is investor beliefs (not necessarily reality) that drive stock market prices.

² Gourinchas and Rey (2016) show that today's low consumption/wealth ratio in the advanced world is likely a predictor of a sustained period of low global real interest rates, but not necessarily a predictor of lower trend growth.

by creating captive audiences, and by reducing other options. One only has to look at the Eurozone, where national debts have been siloed into corresponding national banks, to see an example of their idea, for example in Italy today which again teeters on a banking crisis.

Many studies have found that, particularly in countries with chronic public debt and pension problems, a financial crisis stresses public finances and becomes a significant factor in lower post-crisis growth. Reinhart (2016) points out that the slowest growing advanced economies, for example Italy, Greece and Japan, are precisely the ones that had significant public debt problems even back in the mid 1990s. Those who would argue that very public high debt has no causal effect on growth have to do cartwheels to explain these cases away. (Let's remember that Greece was the star pupil for those who insisted that pre-crisis data shows that public debt is irrelevant to growth.)

Although the aftermath of the financial crisis (and the global debt supercycle it spawned) are only one of many explanations about today's low real interest rates, the fact is that whereas many secular factors had been driving real interest rates down before the financial crisis, (by far the largest and most dramatic drops began as the crisis unfolded. This is illustrated by figure 2 for the ten-year inflation indexed constant maturity Treasury bond; the drop from the 2007 peak to today is nearly 3 percent by far the lion's share of the long-term drop in the real interest rate. The 30 year indexed bond shows a broadly similar story comparing today with the situation before the crisis. To give the crisis second billing to longer-term secular factors is hard to justify. As former Fed chairman Alan Greenspan often pointed out, demographic trends are extremely slow moving and predictable, so the fall in interest rates is far to rapid and dramatic to pin mainly on such factors.

Many issues that are ascribed mainly to globalization and technology, have also been hugely exacerbated by the financial crisis, for example inequality and populism, which in turn may well have significant negative impacts on both real interest rates and growth.

In sum, there are many factors that could potentially explain today's extremely low level of real interest rates, and very difficult to apportion their relative quantitative importance. But the coincidence of the financial crisis and by far the most dramatic drop in real interest rates seems like it can hardly have been mainly a coincidence.

Lastly, there is the question of how monetary policy should be calibrated and conducted in such circumstances. In the short run, negative real interest rates and extremely low inflation are pushing most central banks up against the zero bound, leading to an increasingly wide array of out-of-the-box and way-outside-the-box policy suggestions.³ In my view, by far the simplest and most elegant approach would be to pave the way for *effective* negative interest rate policy, which unfortunately is not possible today anywhere (including Europe and Japan), in part because of problems posed by zero interest paper currency and in part because other frictions caused by legal, tax and market institutions. All of these problems, even with paper currency, can be dealt with easily enough given time. But they cannot be achieved by the central bank alone; for further discussion see Rogoff (2016) *The Curse of Cash*.

³ See Rogoff (2016) "[It would be wrong to abandon negative interest rates](#)".

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— Figure 1: 5-Year, 5-Year Forward Inflation Expectation Rate



— FIGURE 2 10-Year Treasury Inflation-Indexed Security, Constant Maturity

