

Conventional Thinking at the Brink: Comments on Ben Bernanke's *The Federal Reserve and the Financial Crisis* (2013)¹

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In the Spring of 2012, Fed Chairman Ben Bernanke gave a series of lectures as part of a course on monetary policy at George Washington University. The lectures were somewhat edited and reproduced in book form the following year.

After a period of more than two decades, from the early 1980s until about 2007, sometimes known as the Great Moderation, business cycles returned with a vengeance. 2007-2008 saw a plunge in the dollar exchange and a spike in oil and other commodity prices. These were followed later in 2008 by a freeze-up of the financial sector and the steepest fall-off in US business activity since the 1930s, combined with a sharp recovery of the dollar. Europe soon followed with a protracted crisis of blocked growth and growing debt. Roughly synchronous with such monetary distress, what has been called a “quiet period” in banking came to an end – that is, a period going back to the 1930s without a pattern of runs on banks or bank-like entities.² Economists frequently focus attention on either monetary matters or on financial sector and regulatory issues. But to make sense of the economics of the last few years, we need to understand both.

In view of the high stakes, both for economic performance and for our understanding, we look with some urgency to see what conceptual frameworks the world's most prominent central banker might have embraced: what he believes triggered the downturn, what economic variables he wants the Federal Reserve to target to monitor or to boost recovery, and what he sees as the appropriate foreign exchange regime, and why. As discussed below, Fed policy has been much closer to what Bernanke outlines in his recent lectures than to what he wrote that central banks should do back when he was an economics professor at Princeton University.

1. The Gold Standard and Depressions

Bernanke accepts the widely-held view, which I believe to be correct, that the underlying cause of the Great Depression of the early 1930s was restrictive monetary policy, caused in part by the deflationary constraint of the international gold standard. He adds that the “liquidationist” view of macroeconomics then in vogue saw depression in favorable terms as a necessary to “squeeze out excess.”³

But his view of the gold standard is incomplete. In theory, the adjustment mechanism between countries on a fixed-exchange rate works the same way as does the adjustment mechanism among states or regions of a single country with a unified currency regime. Theory aside, by most accounts the pre-WWI gold standard worked well, at least from the middle-1890s to the outbreak of the War. Similarly, the “Bretton Woods” fixed exchange rate system is usually thought to have worked well from the late 1940s through the 1960s. So we need to understand

¹ Ben. S. Bernanke (2013), *The Federal Reserve and the Financial Crisis*.

² Gary Gorton, *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007*, (Yale and NBER, May 9, 2009); p. 38f.

³ Bernanke (2013), p. 20.

why a gold standard (or a fixed exchange rate system) works in some situations, but not in others.

A gold standard, which links the price of gold to the price of a currency, or sometimes to a group of currencies, is comparable to any other exchange rate. If gold is cheap relative to currencies, the market will sell currencies and buy gold – bringing downward pressure on currencies and forcing central banks to contract money supplies or raise interest rates to prevent the loss of gold. The reverse happens if gold is expensive, in which case market demand for currencies will increase, thereby allowing easier monetary conditions.

Without mentioning their names, Bernanke embraces the Eichengreen-Kindleberger conclusion that the interwar gold standard broke down because of lack of central bank coordination, or, similarly, because of lack of “leadership.”⁴ We can agree that coordination is useful, but such accounts leaves out price dynamics. Following the First World War, gold was cheap – as the official dollar price of gold had been unchanged while the price of most commodities went up sharply. Rather than devalue their currencies (that is, raising the price of gold) in the following years, many European central banks (led by the Bank of England) chose to push down domestic prices, thereby contracting their economies, and hence reducing demand and economic activity. As more countries returned to the gold standard, the systemic demand for monetary gold rose, which brought more downward pressure on prices, and more contraction. But the undervaluation of gold discouraged new production, and reduced the real value of national gold stocks. What finally brought an end to the Depression was the successive devaluation of currencies during 1931-1936 and, thereby, the country-by-country revaluation of gold.

A response in economic theory to the depression, most associated with Milton Friedman, was that exchange rates should be allowed to float. If a currency was too expensive it would depreciate. The key argument is that wage, interest and overhead costs are rigid in nominal terms, so that forcing them down to restore profit margins, investment, and hiring is not viable. Depreciation allows an economy to resume monetary expansion and to increase demand without forcing down nominal costs. This is sometimes called “money illusion.”

While depreciation would allow a country to escape from a squeeze on demand and on profits, floating rate systems have significant second-order costs. One is that devaluation can lead to a spiral of cost and wage inflation, where it becomes easier to depreciate repeatedly than to bring costs under control. Another is that floating rates create price uncertainties, which can effectively fragment markets, make production planning difficult, and raise currency risks to efficient investment. The demonstrated tendency of currency prices to “overshoot” adds conceptual weight to the often-observed tendency of foreign exchange toward volatility.⁵ A theoretical counter-response to adoption of floating rates is to reconstruct fixed rate systems, but so as to avoid deflationary spirals that took hold during the years of the interwar gold standard.

The 1896-1914 gold standard avoided deflation, not because it was “well-managed,” but because monetary gold was abundant. Gold had been expensive relatively to other commodities during the 1880s and 1890s, which encouraged a sharp rise in gold production. The interwar gold

⁴ Bernanke (2013), p. 28. Barry Eichengreen (1992), *Golden Fetters* stresses lack of central bank cooperation; Charles Kindleberger (1973), *The World in Depression* pointed to lack of monetary leadership by the US. For a view stressing instead the depressed price and inadequate quantity of monetary gold, see H. Clark Johnson (1997), *Gold, France and the Great Depression (1919-1932)*.

⁵ Rudiger Dornbusch (1976). "Expectations and Exchange Rate Dynamics". *Journal of Political Economy* 84 (6): 1161–1176

standard (1920s and 1930s) failed because gold was undervalued and the supply of monetary gold was inadequate. The post-WWII Bretton Woods fixed-rate system proposed a change in monetary management – it required that surplus countries adjust (by allowing domestic demand and prices to rise), and did not put the whole burden on deficit countries. But the more important factor allowing the Bretton Woods system to avoid deflationary pressure was acceptance by much of the world of US dollars as a gold-equivalent.

Here is the key to understanding when a gold standard can work – it succeeds when there is enough gold, or gold-equivalent substitute, to support gently rising prices. Friedman’s economic views, and his floating-rate convictions, were shaped in part by the Great Depression, when prices were falling. If we combine falling prices with rigid wages and other overhead costs, then the case for floating rates to facilitate *real* cost reductions, and to reclaim national control over monetary policy, is strong. But in a world where prices generally rise – certainly the case for most of the world since before the Second World War –the calculation is different. Robert Mundell commented a few years ago:

We can grant that after long periods of stability, countries can devalue and become more competitive because labor swallows the reduction in real wages caused by higher prices. This was very much the case in the 1930s when Keynes popularized the money-illusion argument and there was mass unemployment. But since the late 1930s, prices have gone ever upward. The money-illusion argument for flexible exchange rates has faded away. Policymakers have learned that “surprise devaluation cum inflation” only works for a short period, and is often reversed. Once the money-illusion argument is taken away, the case for devaluation disappears.⁶

Eurozone crisis. The Eurozone locks currencies and economies together in a fixed-rate system reminiscent of a transnational gold standard. For awhile, after the Eurozone was established in 1999, it worked well. Monetary conditions were easy before 2008, as such “periphery” countries as Spain, Portugal, Greece and Ireland saw surpluses, thereby attracting investment and boosting domestic prices, while growth and price increases in Germany and neighboring “core” countries were relatively subdued. But after the 2008 crisis and subsequent collapse of commodity prices, risk perceptions changed with the result that euro periphery countries saw capital outflows while core countries, led by Germany, ran large surpluses.

Such surpluses should be self-correcting, as money inflows boost demand, spending, and prices. But this process has been blocked by deliberately restrictive European Central Bank monetary policy. Unemployment in 2013 in the deficit economies of the periphery remained at appalling levels – 17 percent in Portugal, 12 percent in Italy, 27 percent in Spain and in Greece, and much higher among young adults in all of them. Credit in the Eurozone contracted year-on-year during 2013, and has fallen at an annual rate ranging from 6 to 12 percent in Italy, Spain and Portugal.⁷ North European core countries, led by Germany, have meanwhile avoided deflation and now have much lower unemployment.

Much current discussion of Eurozone solutions points to creating a common fiscal policy, issuance of Euro-zone bonds, and far-reaching political union. Another proposal is for a budgetary allocation to be used for lending to sovereign borrowers. In monetary policy, a typical

⁶ Howard R. Vane and Chris Mulhearn, “Interview with Robert A. Mundell,” *Journal of Economic Perspectives*, Fall 2006, p. 98.

⁷ <http://finance.yahoo.com/blogs/the-exchange/europe-is-in-deflation-denial-200223581.html>

proposal is for the ECB to take a more active role as a lender of last resort to governments. In my judgment all of these address secondary matters, and largely miss the point: the 1896-1914 gold standard and the post-WW2 Bretton Woods system both worked without political union, a common fiscal unit, or trans-national bond issuance. The Eurozone has suffered from severe monetary constraint – indicated by cumulative Nominal GDP growth of 2.47 percent over nearly 5 years from the second quarter of 2008 through 2012,⁸ and with little change in this pattern through 2013.⁹ So most of the proposals amount to finding ways to share the pain, rather than to curing the illness.

The Eurozone contraction has usually been mis-diagnosed as resulting from sovereign debt and financial crisis. Chairman Bernanke apparently shares such views, as he notes that fiscal solvency concerns in the European periphery “have led to stressed financial conditions in Europe.” He does not in his lectures link the debt problem to ECB monetary constraint, and indeed implies that it is the sort of “structural” problem that cannot be overcome through monetary policy.¹⁰ The weakness of this argument is that fiscal indicators in most Euro-periphery countries through 2008 or 2009 do not indicate mis-management. With the exception of Greece, and perhaps to a lesser extent of Portugal, periphery countries had either fiscal surpluses or annual deficits smaller than most of the core countries.¹¹

Something similar to a 1920s-era liquidationist view is now popular in Germany -- and elsewhere, for that matter. German policy-makers have shown no inclination to inflate, or to allow the ECB to inflate, hence the Bretton Woods-era premise that surplus countries should share monetary adjustment is abandoned. As we saw a moment ago, fixed exchange rates have historically worked much better in a context of rising prices. Mundell, in his frequent endorsement of a common European currency, apparently discounted the prospect that the ECB might adopt deflationary policies.¹²

If the Eurozone is to be a zone of persistently flat or falling prices, it is better, at least from an economic point of view, that it not survive. In such a deflationary environment, conditions calling for the devaluation in probably several periphery countries are replicated. The alternative – survival of the Eurozone as a deflationary bloc – would mean an ongoing conflict between bondholders who resist debt write-downs and periphery country governments resisting imposed austerity. Not for the first time, such a conflict would provoke nearly religious-style indignation over what is in essence a matter of monetary economics, indeed, a matter getting currency prices right.

2. *Coming of the Financial Crisis*

⁸ Scott Sumner, *The Eurozone NGDP Catastrophe*, which cites Eurostat data; 17 Dec 2012.

<http://finance.yahoo.com/blogs/the-exchange/europe-is-in-deflation-denial-200223581.html>

⁹ Eurostat data shows an increase in real GDP over the first three quarters of 2013 of 0.6 percent.

<http://www.tradingeconomics.com/euro-area/gdp-growth> With price inflation running at less than 1 percent annually, total NGDP increase for 2013 looks likely to come in well below any reasonable target rate.

¹⁰ Bernanke (2013), p. 115.

¹¹ See graphic, “Budget Deficit and Public Debt to GDP – 2009”, in

http://en.wikipedia.org/wiki/Eurozone_crisis

¹² Mundell has more recently criticized the ECB for deflationary policies. E.g.,

<http://www.bloomberg.com/news/2013-03-25/mundell-says-ecb-tolerating-euro-strength-worsened-debt-crisis.html>

Bernanke argues that monetary policy was not unusually easy during 2003-2007, the years before the financial crisis of 2008; he draws attention instead to inadequate regulation of the financial sector as giving rise to excess. He joined the Fed Board of Governors in 2002, and became Chairman in February 2006, so he is of course defending his own record on monetary policy. His primary defense is that housing prices did not start to rise in earnest until *after* the Fed raised overnight rates in 2004.¹³ He suggests instead that prices were driven upward by an inflow of foreign money looking for investment assets, and by a decline in mortgage standards, which led to a sharp increase in demand for housing.

John Taylor provides a counter-argument in *Getting Off Track*. He looks at Taylor Rule evidence, which identifies a short-term interest rate appropriate given the rate of price inflation and the rate of GDP growth relative to trend. Given Taylor's own calculations, the Rule would have set short-term rates anywhere from one-half to three percent higher than they were through the entire period from early 2002 to early 2006.¹⁴ Looking at evidence from Eurozone countries, Taylor deduces that those experiencing rapid growth and investment inflows were the ones that saw greater housing outlays and price increases in the years after 1999 – a conclusion that parallels Bernanke's observation regarding the impact of foreign inflows on the US housing market. Taylor notes that short-term rates well below the Taylor target are likely to encourage investment and thereby to attract foreign funds.

Some interesting evidence for Taylor's argument appears in housing price trends in Eurozone countries during 2001-2006. All of the Eurozone countries shared the ECB monetary policy; but given growth, inflation, and unemployment trends, the same interest rate levels were expansive in some countries, but much less so in others. A graph plotting divergences from Taylor-Rule-appropriate overnight rates against changes in housing investment shows a strong visual correlation – countries where the ECB-driven interest rate was too low (Greece, Spain, Ireland) saw sharp increases in housing investment, while those in which the same interest rate was about where the rule prescribed or too high (Austria, Germany) saw declines in housing investment.¹⁵

Other evidence offers only weak support for the conclusion of too-easy money during 2002-2006. Consider:

- a) There is only a weak pattern of declining dollar: euro exchange rate from January 2004 to June 2007. Taking the first trading day of January for each of the four years, the dollar-euro rate stood at 1.25, 1.34, 1.19, and 1.33. The dollar-euro exchange stayed fairly steady through the first half of 2007, and remained at 1.33 on June 14, 2007.¹⁶ One could counter that monetary policy was too easy in both the US and the Euro-zone during 2004-2007, so that relatively stable exchange rates are only weak evidence of prudent policy. But certainly nothing in foreign exchange markets stands out to suggest unusual monetary stimulus occurred from 2004 through the first half of 2007.
- b) Market monetarist Scott Sumner has proposed that Nominal GDP should be targeted at 5 to 5 1/2 percent in an economy with a moderately growing population like that of the US. If we look at growth in NGDP from one year to the next, we see slightly-above-optimal data for each of 2003-04, 2004-05, and 2005-06 at 6.6, 6.6, and 5.8 percent.

¹³ Bernanke (2013), p. 53; also Figure 38.

¹⁴ John B. Taylor (2009), *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis*, p. 3.

¹⁵ Taylor (2009), Figure 4.

¹⁶ Federal Reserve data, http://www.federalreserve.gov/releases/h10/hist/dat00_eu.htm

But during each of the previous three years, NGDP growth was *below* the optimal range, as it was for the succeeding year, 2006-2007, during which NGDP growth was only 3.7 percent.¹⁷ By this measure also, there is little to indicate that Fed policy was unusually easy.

- c) The Taylor Rule has some predictive value because it reflects previous central banking practice. But it may be that central banks, including the Federal Reserve, have set the wrong interest rate targets in the past – see discussion in next section – in which case the Taylor Rule may not be prescriptive.

We can reject the argument that easy monetary policy during the middle years of the decade directly explains the depth of the 2007-2009 recession. The notion that an expansionary excess requires expiation on the downside has emotional resonance for some; but there is little statistical evidence to support it. Friedman, looking in 1994 at series of business expansions and contractions in the US since 1879, concluded that: “For all three series, the correlation was trivial between the amplitude of an expansion and the amplitude of the succeeding contraction.” He went on to note that changes in money stock played an important role in the amplitude of both expansion and contraction.¹⁸

Friedman’s conclusion sits uneasily with conclusions from more recent crisis literature – which indicate that financial crises follow prior credit booms.¹⁹ (The data streams might be reconciled if we consider that most of the US evidence for financial crises pre-dates 1934.) Without directly contradicting Friedman’s conclusion, Taylor and others make a related argument that easy money in the years before the 2007 crisis – combined with a breakdown in mortgage lending standards – led to a housing price boom that would aggravate financial sector vulnerability.

The 2007-2008 collapse was driven by a wholesale bank run in the shadow-banking sector. Regulated US banks – “commercial” banks -- saw no deterioration in their balance sheets during the years leading into the crisis; to the contrary, their capital ratios had been gradually rising for a decade and a half. Most of the increase in commercial bank mortgage holdings was concentrated in safer senior tranches, and came by 2003, before the sharp rise in housing prices.²⁰ The introduction of deposit insurance in 1934 ended retail bank panics in the US. But changes in banking practices, in part induced by deregulation since the 1980s, have led to a large increase in banking-like activity among financial firms that have not been regulated as banks. So “shadow banks” have taken on very large deposits, usually backed by repurchase agreements using securitized collateral – which protect *specific* wholesale “depositors,” but do not remove *systemic* risk of a run on dubious collateral. The unexpected event of a plunge in housing prices intervened, which called the value of collateralized mortgage-backed securities into question.²¹

By late 2007, the US economy had turned sour. In August 2007, the LIBOR-OIS spread opened from a typically low 10 basis points to nearly 100.²² (The Overnight Index Swap measures cost

¹⁷ IMF data, [http://en.wikipedia.org/wiki/List_of_countries_by_past_and_future_GDP_\(nominal\)](http://en.wikipedia.org/wiki/List_of_countries_by_past_and_future_GDP_(nominal))

¹⁸ Milton Friedman (1994), “The ‘Plucking Model’ of Business Fluctuations Revisited,” *Economic Inquiry*, April 1994; p. 171.

¹⁹ Gorton (Yale and NBER, August 2012), *Some Reflections on the Recent Financial Crisis*; p. 8.

²⁰ Tim Congdon, “Were Banks Bust in 2007?” In David Hale and Lyric Hughes Hale, *What’s Next: Unconventional Wisdom on the Future of the World Economy* (2011); pp. 236-238.

²¹ Gorton (2009) for discussion.

²² Bernanke (2013), Figure 24.

for a very low-risk transaction, as such swaps involve no transfer of cash before maturity date.) The wider LIBOR spread reflected growing doubts about bank counterparty credit risk – and was triggered by questions about which banks were holding bad, usually subprime, mortgages. The policy decision hinged on whether the much-higher spread could be closed through increased liquidity, or whether closing it would require some direct strengthening of interbank counterparty balance sheets.

The liquidity approach was attempted first. TAF (Term Auction Facility), allowed banks to borrow from the Fed for longer periods and against a broader range of collateral than was the case in usual open market operations. In direct monetary actions, the Fed brought overnight interest rates down from 5.25 percent in August 2007 to 2 percent in April 2008, levels below where the Taylor Rule – past practice – would have put them.²³ The lower rates somewhat eased mortgage-sector pressure, as it lowered costs on some adjustable rate mortgages. Reflecting easier money, the August 2007- April 2008 period saw the dollar fall against the euro from 1.36 to 1.56, and to 1.59 in July 2008 – the historic low point for the dollar-euro exchange.²⁴ The Mundi commodity price index rose from 133 in August 2007 to 189 in April 2008, and then to 219 in July 2008 – an historic upward spike – before falling sharply.²⁵

But the combination of TAF and lower rates had only intermittent effects on LIBOR-OIS spreads, which ranged from 50 to 100 basis points during much of the following twelve months into September 2008. Right through the inflation, “haircuts” on repurchase agreements rose steadily, from 9 percent in January 2008 to 25 percent in July, which indicated growing concerns about counter-party risk.²⁶ Lehman Brothers went bankrupt on 15 September 2008, which further raised counterparty fears, and drove the LIBOR-OIS spread to about 130 basis points. Following a partial recovery and then some uncertain rescue deliberations in Washington, the spread grew to 350 basis points by October 10. It eased only when the TARP (Troubled Asset Relief Program) Equity Plan was announced three days later, which injected amounts up to \$45 billion of long-term capital into each of a number of banks and other financial institutions. That was the high point for the LIBOR-OIS spread, which then came back down to September levels by early November.

In other words, the financial sector un-froze only when counterparty risk was addressed directly. Bernanke in the published lectures does not discuss the Fed’s attempt to inflate its way out of the subprime risk problem that first appeared in August 2007 – he says nothing about plunging Fed funds rates, the sinking dollar, or soaring oil prices. We can guess that Bernanke and the Fed may have been chastened by the failure of the inflation to restore counterparty confidence during much of the first year of the brewing crisis – and they may therefore have been disinclined to inflate again when the crisis hit with full fury in September and October of 2008. If so, they took the wrong lesson, as the later crisis was aggravated by a strong whiff of deflation.

To return to something like the 70-odd year quiet period in the U.S. after 1934, during which banking panics did not occur, might require recreating what Gary Gorton calls “informationally-insensitive” debt (in the best case, riskless debt) – parallel to insured demand deposits -- to be used as collateral for repurchase agreements. Financial crises occur when investors run away from bank debt. So a reformed banking structure must provide sufficient “carrots” that participants in the shadow-banking sector would have reason to be self-policing. The usual

²³ Taylor (2009), p. 22.

²⁴ Federal Reserve data, http://www.federalreserve.gov/releases/h10/hist/dato0_eu.htm

²⁵ <http://www.indexmundi.com/commodities/?commodity=commodity-price-index&months=300>

²⁶ Gorton and Andrew Metrick, *Securitized Banking and the Run on Repo*, NBER (Nov 9, 2010 version), Figure 4: the Repo-Haircut Index.

moral hazard argument about banks and deposit insurance did not have force during that period because banks did not want to lose their valuable charters.²⁷ The new Dodd-Frank Act provides extensive new regulatory oversight of shadow-banking activities, but does not address this key structural issue. Bernanke does not mention this, and he is perhaps too polite to comment that Dodd-Frank is silent on government-sponsored enterprises, including Fannie Mae, Freddie Mac, etc., which played a large role in amplifying the subprime-driven crisis.²⁸

3. Central Bank Targeting

Bernanke comments that “keeping inflation expectations low and stable is one of the great accomplishments of Chairman Volcker and Chairman Greenspan, and it is an important objective of central banks around the world.”²⁹ It is perhaps an evolutionary achievement for central bankers to move beyond targeting base money supply, or the overnight interest rate (both of which central banks control directly,) to get to where they feel confident enough of their powers to target price inflation. The later involves targeting an economic outcome, a derivative effect of operations involving more immediate variables.

Volcker and Greenspan indeed achieved something, but our discussion qualifies its scope. There are different kinds of inflation. One occurs where profits rise, investment increases and jobs are created – sometimes called demand-pull inflation, similar to what Keynes for awhile called “profit inflation.” Another is where price increases reflect higher costs, usually called cost-push inflation. Persistent cost-push inflation can transmute into “stagflation,” where rising prices may coexist with a squeeze on profits and investment, what used to be called “profit deflation.” In the early stages of a business recovery, where there is little pressure on productive capacity, some price inflation is likely to boost investment and speed recovery. Given a mature business recovery, on the other hand, slack capacity will have diminished, and price increases are likely to reflect higher costs.

Keynes made an argument for aggressive monetary expansion in the face of a collapse of activity, particularly where wages and other cost factors were somewhat rigid; the hypothetical conditions he described were similar to those of the 2008 crisis and its aftermath:

...the conclusion holds good that an expansion of the volume of investment, resulting in rising prices, may be extremely advisable as a general rule, when it is corrective to a pre-existing Commodity Deflation... When, for example, a condition of widespread unemployment exists as the result of the downward phase of a Credit Cycle, but without the Commodity Deflation having passed over into an Income Deflation [because of wage and cost rigidities], it will be impracticable to bring about a recovery to a normal level of production and employment without allowing some measure of expansion and of rising prices as a corrective to the existing Deflation... In short, *to stabilize prices at the bottom of a Commodity Deflation would be a stupid thing to do.*³⁰ (Italics added.)

To rephrase, in the early stage of a business recovery, we want more inflation; in the mature stage of a business recovery, we want less. Ever since central bankers took an interest in

²⁷ Gorton (2009), pp. 39f.

²⁸ Michael T. Lewis, “Dodd-Frank Financial Reforms have a Broad Scope, and will likely have a Modest Impact,” in Hale and Hale (2009).

²⁹ Bernanke (2013), p. 58.

³⁰ J. M. Keynes (1930), *Treatise on Money*, vol I, pp. 297-298.

monetary management, their implicit goal has been to “lean against the wind,” and to have a counter-cyclical effect. But when the same level of inflation is targeted all the way through the cycle, central bank policy easily becomes pro-cyclical – slowing the recovery, overheating the boom. Where we have an especially deep recession, as after 2008, the weakness in having a low-inflation target through the whole cycle becomes especially evident.

What puzzles the persistent reader is that *Bernanke understands* that an inflation target should be raised after a serious setback in economic activity. He wrote in 2000 of Japan’s troubles:

...in particular a target in the 3-4 percent range for inflation, to be maintained for a number of years, would confirm not only that BoJ is intent on moving safely away from a deflationary regime but that it also intends to make up some of the “price-level gap” created by 8 years of zero or negative inflation.³¹

A rate of inflation at 3-4 percent would be higher than the targets adopted by the Fed since 2008, and much higher than levels in fact realized.

Bernanke also emphasizes the Fed’s interest rate targeting, which is not much better. The Fed under his leadership has pledged to keep short-term interest rates close to zero for years ahead – until unemployment drops to a specified level (recently set at 6.5 percent.) He adds the explanation in his lectures that –

...the Fed has begun to provide guidance to investors and the public about what we expect to do with the federal funds rate in the future, given how we currently see the economy. So, given how we currently see the economy, we tell the market something about where we think the rates are going to go. To the extent that the market better understands our plans, that is going to help reduce certainty in financial markets.³²

Conceptually, this is a clutter. Financial markets care about how monetary policy influences trends in aggregate demand and in profits. To anyone following the stock market since 2008, investors appear less interested in any interest rate target than in the status of the Fed’s open market operations – “quantitative easing” (QE). Indeed, interest rates are not a reliable indicator of whether monetary policy is easy or tight, or of whether demand is growing or shrinking. As Friedman wrote of Japan in 1998:

As the economy revives, however, interest rates would start to rise. That is the standard pattern and explains why it is so misleading to judge monetary policy by interest rates. Low interest rates are generally a sign that money has been tight, as in Japan; high interest rates, that money has been easy.³³

A decade-and-a-half later, Bernanke nevertheless offers low interest rates as a signal the market should find decisive of the Fed’s intent to restore growth. Friedman, in contrast, went on to say in his 1998 article that what mattered was not interest rates but expansion in the money supply

³¹ Bernanke (2000), “Japanese Monetary Policy: A Case of Self-Induced Paralysis?” In Mikitani and Posen, *Japan’s Financial Crisis and its Parallels to U.S. Experience* (Institute for International Economics); p. 159

³² Bernanke (2013), p. 109.

³³ Friedman, “Reviving Japan,” *Hoover Digest*, April 30, 1998.

– that is, in liquidity -- which would allow spending and growth to resume. If we follow Friedman’s reasoning, then assurance from the Chairman of the Federal Reserve that interest rates are going to remain near zero *for years to come* might be a negative indicator, a suggestion that we will not soon see demand-led price increases.

Ultra-low interest rates raise demand for cash balances. As Keynes explained it, “interest is usually regarded as the reward of not-spending, whereas in fact it is the reward of not-hoarding.”³⁴ On that reasoning, ultra-low interest rates bring increased demand for liquidity; if low rates are to boost economic activity, they must be accompanied by sufficient new liquidity to more than compensate for the increase in liquidity demand. Also, the banking sector works better when price increases lift interest rates above zero, because doing so gives banks an incentive to lend in the interbank market. In part as a result, bank lending to corporations has never recovered to pre-crisis levels, and small and medium enterprises in particular have been squeezed.³⁵ Under such conditions, businesses hold more cash.

Puzzling, again, is that Bernanke knows better than to treat an interest rate target as decisive. In the book chapter on Japan cited earlier, he said keeping short-term interest rates at near-zero was insufficient, that the Bank of Japan must also overcome a deficiency of “aggregate demand.” He explained that even if interest rates are bounded at zero, a “liquidity trap” could be broken by issuing money that could affect prices and demand directly; for example, BoJ could itself use new cash to buy up goods, which would thereby boost demand and lift prices.³⁶

There is another potential cost to very low interest rates that Bernanke neglects to mention – their unsettling effect on exchange rates and on emerging market economies. With ultra-low interest rates in the US and other developed countries, investment cash floods into emerging markets, with pro-cyclical effect. As Ronald McKinnon and Zhao Liu commented last year:

Why are near zero interest rates a potential beggar-thy-neighbor exchange rate policy? Ultra-low interest rates in the US periodically unleash floods of hot money into emerging markets with higher growth and naturally higher interest rates. Any emerging market central bank is then faced with an uncomfortable choice: either let its exchange rate appreciate against the dollar and thus lose export competitiveness against its neighbors, or intervene heavily to buy dollars to smooth exchange fluctuations and thereby lose monetary control. Since 2002, emerging markets have acquired more than \$6 trillion in foreign exchange reserves and their consumer price index (CPI) inflation has been more than 4 percentage points higher than in the US despite, on net balance, having appreciated in nominal terms against the dollar.³⁷

McKinnon’s criticism calls to mind a broader point (and one that “market monetarists” would do well to note): effective monetary policy will not focus only on domestic economies but will also consider second- and third-order external effects.

³⁴ Keynes (1936), *General Theory of Employment, Interest, and Money*, p. 174.

³⁵ Ronald McKinnon, *Fed 'Stimulus' Chokes Indirect Finance to SMEs*, CentralBanking.com, June 2013 http://www.stanford.edu/~mckinnon/papers/Fed_chokes_SME.pdf

³⁶ Bernanke (2000); p. 158.

³⁷ McKinnon and Zhao Liu, *Modern Currency Wars: The United States versus Japan* (ADB Institute, Oct 2013); p. 5.

Bernanke's Fed is likely to be most remembered for its QE policy. Bernanke deserves some credit for insisting on the need for active monetary measures, despite loud opposition from contemporary liquidationists. But the mechanism by which Bernanke intended QE to work is unexpected. According to the lectures, the objective of QE was to lower long-term interest rates. Bernanke explains:

To influence longer-term rates, the Fed began to undertake large-scale purchases of treasury and GSE [government-sponsored enterprises] securities... by purchasing Treasury securities, bringing them onto our balance sheet, and reducing the available supply of those Treasuries, *we effectively lowered the interest rate of longer-termed Treasuries and GSE securities as well.* Moreover, to the extent that investors no longer have available Treasuries and GSE securities to hold in their portfolios, to the extent that they are induced to move to other kinds of securities, such as corporate bonds, *that also raises the prices and lowers the yields on those securities.*³⁸ (Italics added.)

Yet again, Bernanke emphasizes interest rates as the target. His explanation appears lifted from Keynes' *Treatise* or *General Theory*, which also argued that the point of aggressive monetary policy was to lower long-term interest rates³⁹ – an argument that neglects the direct impact of increased liquidity on demand. (I believe Bernanke means that QE would lower *real* long-term rates. According to market participants, Fed QE announcements tend to raise inflationary expectations, thereby raising *nominal* rates on 10- and 30-year bonds.) Bernanke's discussion may explain something that has gotten little attention: the Fed's decision in October 2008 to begin paying interest on reserves.

As is often reported, the Fed from September 2008 through early March 2014 added some \$3.1B to its balance sheet, which then stood at over \$4.1 B; but less understood is that commercial bank reserves held at the Fed grew from a tiny \$3.8 million to \$2.65 billion, a 700-fold increase, over the same period. Close to 85 percent of the increase in the Fed's liabilities have gone into reserves.⁴⁰ Bernanke explains: "as the purchases of securities occurred, the way we paid for them was basically by increasing the amount of reserves that banks had in their accounts with the Fed."⁴¹ Much of the increase reflects the 2008 decision to pay interest on reserves – the current rate of interest, at 25 basis points, *is higher than what banks can earn by holding short-term treasury bills.* Most of the liquidity added by open market purchases is thereby soon after removed. Bernanke's Fed has been so apparently indifferent about the contractionary effect of absorbing commercial bank reserves because their announced expansion strategy focuses narrowly on long-term interest rates. Perhaps if the many critics of the Fed's QE understood how relatively little of the Fed's monthly purchases contributed to new liquidity, their criticism might relent?

Bernanke knows about an alternative mechanism -- a framework in which aggressive open market intervention stresses increasing the supply of liquidity. From his Japan article cited earlier:

An alternative strategy ... [is] the real-life equivalent of that hoary thought experiment, the "helicopter drop" of newly printed money. I think most

³⁸ Bernanke (2013), pp. 102, 104.

³⁹ For ex., Keynes (1936), pp. 197, 206.

⁴⁰ <http://www.federalreserve.gov/releases/h41/Current> and http://econbrowser.com/archives/2008/10/balance_sheet_o

⁴¹ Bernanke (2013), p. 105.

economists would agree that a large enough helicopter drop *must* raise the price level. Suppose it did not, so that the price level remained unchanged. Then the real wealth of the population would grow without bound, as they are flooded with gifts of money from the government... Surely at some point the public would attempt to convert its increased real wealth into goods and services, spending that would increase aggregate demand and prices.⁴²

Bernanke's 2012 lectures, in contrast, say nothing of a "helicopter drop," or of increasing liquidity as the mechanism for increasing demand for goods and services. The earlier paper emphasizes the impact of monetary policy on demand, but says nothing about lowering long-term interest rates. My casual survey of market participants suggests that they are not even aware of Bernanke's public statement that the intent of QE is to lower long rates; they assume it has to do with creating more liquidity, or perhaps with a less specific signaling of intent. More revealing, perhaps, is that other members of the Fed understand the intent of QE in a way different from what Bernanke describes. For example, Philadelphia/Fed President Charles Plosser told the *NY Times*:

Our asset purchases are not very inflationary right now because they're just going into the banking system and sitting there. So doing more quantitative easing to try to create more inflation in that context is not going to be very effective. Our ability to actually stimulate more inflation in the short run might be a little questionable. Just buying more assets won't do that.⁴³

Plosser does not mention bringing down long rates. And in his remark that funds are just "sitting there," he neglects to note that the Fed now pays interest on reserves – which reduces or neutralizes the policy's "inflationary" impact. Our discussion at least answers the question about whether the Fed is "out of ammunition." As far as liquidity is concerned, the Fed has barely used even the ammunition thus far lifted off the shelf.

Bernanke offers three targets to guide central banking policy, none of which are consistent with what he wrote in his days as an economics professor at Princeton. Perhaps the kindest way to look at it is that he was unable to bring colleagues to his point of view, so he chose instead to defend the best he could get?

More usefully, the Federal Reserve might target growth in Nominal GDP and perhaps also exchange rates; a sharply moving exchange rate during a financial crisis is a good indicator of source of stress. As discussed in Section I, it is unwise to fix exchange rates if prices are flat or falling; but a US NGDP growth target could be set high enough – perhaps at 5 to 5 1/2 percent annually -- to keep prices generally (and slowly) rising. Under such an NGDP targeting regime, other countries would be more likely to make an effort to link their currencies to the dollar. So, much of the time, NGDP and exchange rate targeting would reinforce each other.

4. *Exiting the Great Recession*

Let's return to the narrative. Once the TARP equity was injected in October 2008, the LIBOR-OIS spread and unsecured-secured spreads started to close and the financial crisis was on the way to recovery. Bernanke's Fed discounted aggressively and bought mortgage-backed and

⁴² Bernanke (2000), p. 162.

⁴³ *NY Times*, 9 Dec 2013.

other securities. These had a calming effect on counterparty concerns. But equity market indicators – and corporate profit expectations -- continued to fall for several months, reaching bottom only in early March 2009, or about when the market began to anticipate the first round of QE that was initiated a couple of weeks later. Bernanke mentions the TARP money, and he puts somewhat more emphasis on the bank “stress tests” undertaken in the Spring of 2009. And he believes that the monetary easing played an important role in the recovery.

Bernanke does not discuss the striking evidence of deflation and monetary distress that were so large on the landscape in the third quarter of 2008. A soaring dollar went from 1.59/euro on July 15 to 1.25/euro on November 15.⁴⁴ A strong demand for the world’s leading currency is the flip-side of selling pressure on commodity prices which fell by more than half during this period. Liquidity, commodity price, and foreign exchange trends were almost diametrically different from what they had been during the inflationary period from late 2007 into the middle of 2008.

Strangely, much opinion at the time, and even several years later, including from other economists, was that the Federal Reserve in the last months of 2008 was running a determinedly expansionary monetary policy. That common view involved a misreading of the evidence of the kind suggested in the previous section. Short-term interest rates were zero-bound, bank lending was down and demands for liquidity were up. The market needed a burst of inflation to get interest rates above zero-bound; instead, the Fed promised the opposite.

While Bernanke neglects mention of the soaring dollar from July into November 2008, he certainly understands that a rising currency is evidence of tightening liquidity, and that it can be an important policy indicator. As he wrote of Japan in 1999:

The picture is consistent with an economy in which nominal aggregate demand is growing too slowly for the patient’s health... The yen has generally strengthened over the [1991-1999] period, which is consistent with the deflationist thesis.... Even more striking is the surge of the yen since 1998 [the yen rose from 145/dollar in August 1998 to 102/dollar in December 1999], a period that has coincided with weak aggregate demand growth and a slumping real economy in Japan.⁴⁵

Looking forward to the US in 2008, perhaps we should give Bernanke a “pass” here on grounds that exchange rates are the Treasury area of responsibility, not the Federal Reserve’s? Probably not: in the same 1999 paper, Bernanke wrote that he was “not aware that this [division of responsibility between the Fed and the Treasury] had been an important constraint on Fed policy.”⁴⁶

Bernanke’s discussion of impediments to recovery in 2008 is different, and may explain the absence of a more aggressive monetary policy then and since. It may explain why the intent of QE was limited to lowering long-term rates. He identifies the important impediment not as one of unusual money demand, but as sectoral – in large part having to do with contraction of activity in the housing sector. The solution from his perspective, therefore, is not to increase the aggregate supply of money but, rather, to influence supply and demand conditions in the housing sector. As he explained:

⁴⁴ http://www.federalreserve.gov/releases/h10/hist/datoo_eu.htm

⁴⁵ Bernanke (1999), *Japanese Monetary Policy: a Case of Self-Induced Paralysis?*, p. 7. Paper for presentation at ASSA Convention, 2000.

⁴⁶ Bernanke (1999), p. 19.

Why has this recovery been more sluggish than normal? One reason certainly is the housing market. In a usual recovery, housing comes back...

With a lot of excess supply in the housing market and with a lot of people unable to get mortgage credit or afraid to get back into the housing market, house prices have been declining... Recently [in 2012] we have seen some leveling off, but so far not much evidence of an upturn. Declining house prices mean it is not profitable to build new houses, and so construction has been quite weak. And more broadly, when existing homeowners see their house prices decline, it may mean they cannot get home equity lines of credit or they just feel poorer.⁴⁷

Bernanke reveals frustration that the Fed's effort to lower long term rates did not bring recovery: "We have gotten mortgage rates down very low. You would think that would stimulate housing, but the housing market has not recovered."⁴⁸

Bernanke scarcely regards the underlying monetary problem, which was the rise in systemic demand for money. His discussion in the following pages returns to the importance of targeting a low inflation rate – apparently through all phases of the business cycle – and the importance of letting financial markets know the central bank's interest rate targets. These are the targets identified above as ill-chosen, and use of which Bernanke has himself criticized in the past.

Bernanke's argument on housing parallels that of Paul Krugman, who also doubts the monetary origins of the slow post-2008 recovery.

Unfortunately, the economy didn't come roaring back. Why?

The best explanation, I think, lies in the debt overhang. For the most part, even those who correctly diagnosed a housing bubble failed to notice or at least to acknowledge the importance of the sharp rise in household debt that accompanied the bubble:

And I would argue that this debt overhang has held back spending even though financial markets are operating more or less normally again.⁴⁹

His argument is broader than Bernanke's: Krugman looks at the impact of the housing sector collapse on systemic demand, while Bernanke seems to argue that general recovery would have to be led by recovery in the housing sector. It is nevertheless surprising that Krugman would make this argument, as it embraces Austrian School, liquidationist logic – that the depth of contraction reflects excess investment from the prior expansion. His argument is very similar to what Friedman rejected in his "plucking model" research cited in Section 2. Krugman is right that debt overhang holds back spending – presumably by raising uncertainty and hence increasing demand for liquidity. But he does not move to the next step: the answer to debt overhang is to reflate demand by adding aggregate liquidity.

⁴⁷ Bernanke (2013), p. 111, 113.

⁴⁸ Bernanke (2013), pp. 106-107.

⁴⁹ Paul Krugman, *NY Times*, Aug 8, 2013; <http://krugman.blogs.nytimes.com/2013/08/08/what-janet-yellen-and-everyone-else-got-wrong/>

If the housing market remains glutted, demand can shift to markets for other goods and services. (Krugman seems to prefer that *government* spending be used to boost aggregate demand for goods and services. Monetary economics does not require that conclusion. Consider again Bernanke's thought experiment in the previous section regarding effects of adding liquidity.) And from our discussion of QE, Fed policy has sought only to lower interest rates, including long-term rates; the Fed has neither tried to flood the market with liquidity, and nor has it done so by accident. Bernanke's argument that lower mortgage rates were the key to moving beyond the financial collapse was conceptually quite narrow, neglected the monetary dynamics of recovery, and contributed to extending the Great Recession. In his defense, much of what his critics proposed would have been worse.

We might now challenge a frequent argument that recessions following financial crises are by their nature deeper and last longer than other recessions. Bernanke, Krugman, and Gorton⁵⁰ agree on this, at least implicitly. But much of Gorton's US evidence predates 1934, when retail deposit insurance was adopted. Prior to 1934, the US was either on a gold standard, under which rapid adjustment of money supplies is not possible, or under the direction of a central bank that repeatedly flirted with the real bills doctrine, which blocked satisfaction of demand for liquidity. In 1933, after President Roosevelt allowed the dollar to float against gold, the US saw its fastest ever-recorded four-month rate of growth in industrial production⁵¹ – despite a severe and on-going banking crisis. As we have seen, Bernanke's Fed targeted the wrong monetary variables for the entire recovery period since 2008, so we lack any recent test for what better policy might have achieved!

Reflections

Bernanke's views, as expressed, are strikingly conventional, and his lectures are disappointing for their lack of insight. Below are some take-aways from reading the lectures; notably, all of them run against Bernanke's lecture analyses. As observed, indeed, Bernanke seems at least some of the time to understand the limitations of his own arguments.

First, the key to making a monetary zone work is to allow money to move from regions of payment deficit to regions of payment surplus. This process shifts spending to surplus regions, thereby eliminating the surplus. If, however, goods and service end-prices are falling, but wages and other costs are rigid – including costs of rent and financing – then shifting purchasing power to surplus regions will do little to boost aggregate demand. It is instead likely to mean that labor and other resources in deficit regions will be idled. Such a deflationary mechanism undermines common currency zones – as has happened with the Eurozone since 2008 or 2009. Despite Bernanke's suggestion, this kind of deflationary pressure can be only briefly offset by cooperation, leadership, or sovereign lending.

Second, the world recession of 2008-2009 was instigated by a loss of confidence among “shadow banking” counterparties. Aggressive monetary policy in response to the financial crisis of 2007-2008 did not overcome the problem of real estate credit gone bad or of insolvent counterparties. To avoid a similar financial crisis in the future will require creative regulation of the shadow banking sector; such regulation should involve “carrots” – perhaps in the form of

⁵⁰ Gorton (2012), p. 9.

⁵¹ Federal Reserve data, <http://research.stlouisfed.org/fred2/data/INDPRO.txt>

valuable charters for some kinds of shadow banking activity – and not only “sticks,” represented by higher capital requirements.

Third, central banking in the US and elsewhere has contributed to slow recovery by targeting the wrong monetary variables. Central banks are supposed to “lean against the wind,” that is, to exert a counter-cyclical influence. But the impact of inflation targeting is pro-cyclical; it slows recoveries and over-heats booms. Bernanke’s Fed also targeted interest rates, without acknowledging the effect that zero-bound rates have in boosting demand for money. Quantitative easing should be used to satisfy demand for cash balances and to boost demand for goods – instead, it appears to be narrowly directed toward lowering long-term rates. Wiser targeting would instead emphasize NGDP growth and exchange rates.

Fourth, while the 2007-2008 financial crisis took root in the housing sector, it does not follow that general recovery must begin in the housing. This view, offered by Bernanke in his lectures, and echoed by others, including Krugman, mostly overlooks the underlying dynamics of the recession: soft demand for goods and services, and growing demand for liquidity. In pre-Fed writings, Bernanke acknowledged the ability of central banking to satisfy demand for liquidity, and thereby to boost demand for goods and services – even under extreme conditions. There is no evident reason why such methods would not work several years after a banking crisis, or for that matter, immediately after.

We can criticize Bernanke, or we can criticize the way government organizations work. It does seem that we should also focus on regenerating more understanding of monetary economics within the economics profession.