

Reasserting Monetary Policy: Sumner's Nominal GDP Targeting and Beyond

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Abstract

Sumner's (2016) article in *Foreign Affairs* reasserts the potential of monetary policy to influence economic conditions – following years of suboptimal growth in the US and elsewhere and an unraveling of consensus about central bank practice. This review provides theoretical and economic history context. From the 1960s onward, consideration of money quantity variables was prominent in monetary policy discussion. By the 1990s, central bankers had transferred focus to interest rate or inflation targeting, and sometimes to a combination of the two. Central bankers have proved effective at meeting, or approaching, inflation objectives – and doing so helps to stabilize market expectations for what the future price level will be. Sumner argues that if central bankers can stabilize inflation expectations, then they could also meet nominal GDP (NGDP) targets – and thereby stabilize expectations regarding future growth, unemployment, and interest rates. Also, NGDP targeting is counter-cyclical in its essence.

The depth and length of the Great Recession were largely a result of contractionary monetary conditions from the third quarter of 2008 onward. But financial crises, including in that of 2007-2008 in the US, can trigger or contribute to downturns. NGDP trends are not a good predictor of such crises, which often have origins in compromised capital structure. A further limitation is that NGDP targeting emphasizes internal balance (domestic prices and employment) almost to the exclusion of external stability as an aim of monetary policy. Even if the primary goal remains internal balance, data from foreign exchange markets and from non-domestic price changes provide important information about the stance of monetary policy.

Keywords. great recession, inflation targeting, ngdp targeting, scott sumner, financial crisis, monetarism, external stability

1. Introduction

Inclusion of Scott Sumner's "The Fed and the Great Recession: How Monetary Policy Can Avert the Next Crisis" in the May-June issue of *Foreign Affairs* marks a milestone in public education in monetary economics (Sumner, 2016). Targeting of nominal GDP as a technique for monetary management has moved from a few blogs¹ – to a leading US policy journal. Sumner's blog "The Money Illusion" was identified in *The Economist* (2011) as the lead voice for "market monetarism" (which calls upon monetary authorities to stabilize growth of nominal income – or NGDP -- rather than target inflation, unemployment, or other economic indicators) and the clearest example of the power of blogging to get "fringe ideas" noticed. *The Economist* (2016) has since embraced NGDP targeting as a superior approach to monetary management, while cautioning that a decision to revamp central bank objectives should not be taken lightly. Sumner and *The Economist* are accurate that NGDP targeting can bring an advance over much prior central banking practice, and it can help to carry out the old maxim of "leaning against the wind."

Some of early literature on the Great Recession emphasized roots in the financial crisis that started in 2007, or even

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¹Sumner's blog *The Money Illusion* has probably received the most attention. Other bloggers with comparable agenda include Lars Christensen, David Glasner, and David Beckworth.

more narrowly in the bursting of a real estate bubble.² An alternative perspective, advanced by, among others, Mundell (2012), Congdon (2011), Hanke (2015), and a number of bloggers, including Sumner, identifies monetary roots of the contraction. NGDP targeting adds value upon other monetary approaches. But the NGDP framework alone does not explain the financial crisis that initiated the Great Recession; nor does it provide a policy framework sufficient to contend with an international monetary storm.

NGDP targeting as a monetary framework follows an unraveling of received economic wisdom. The unraveling was reflected in the less than cogent response of the economics profession, and of the Bernanke Fed, to the financial crisis of 2007-2008 and the subsequent Great Recession. During the years of the post-1944 Bretton-Woods-mandated gold exchange standard, monetary (and sometimes fiscal) policy were conducted within the constraints of fixed exchange rates and the signals of reserve movements. With the devaluation of the dollar in 1971 and the decision to allow major currencies to float against each other in 1973, monetary economics opened a new chapter.

2. Conceptual Breach and Great Recession

Chicago School monetarists, led by Milton Friedman, had long advocated floating exchange rates; it was natural for them to take the lead in shaping a new set of operating rules. Friedman rose to the moment with his AEA presidential address on “The Role of Monetary Policy” in 1967. He said monetary policy should avoid being disruptive, which might best be accomplished by stabilizing the price level. He continued that central banks should target only variables they could control, and feared that attempts to influence prices directly would make monetary policy a source of volatility. He proposed instead that monetary authorities should seek to stabilize the rate of growth of monetary aggregates – which would impact prices and other variables with “long and variable lags.” His language was provisional: he said it was beyond the capacity of central banks directly to control the price level “at the present stage of our understanding” (Friedman, 1968). Until such a breakthrough in understanding might occur, Friedman proposed that a steady rate of growth in a money quantity be an exogenous variable that would drive prices, growth, and nominal income. For decades, the monetarist framework dominated discussion, even if the results of its occasional application by central banks during the 1970s and 1980s were disappointing.

Then it broke down. The core money quantity identity, $MV = PT$, has turned out not to imply a straightforward rule for monetary management.³ An increasingly complicated financial system has added new channels for holding liquidity, which has made predictions based on past patterns less reliable. Also, V – velocity – is frequently unstable, especially during periods of financial market stress, which alone makes targeting a money quantity variable insufficient.⁴ Friedman himself told the *Financial Times* in 2003, “The use of quantity of money as a target has not been a success... I’m not sure I would as of today push it as hard as I once did.” Friedman told the *American Prospect* in 2005 that it was easier for central banks to target inflation than he had anticipated, and that they could do so without using money growth rules. (Svensson, 2008) The Federal Reserve has stopped even reporting data for some of the money quantity series that informed policy in the past.

Monetarists are surely correct that the quantity of money plays an important role in nominal income determination. But the essential monetarist policy argument is flawed, as it simplifies a general equilibrium relationship to a one-variable determinism. Keynes (1936⁵), in contrast proposed that the quantity of money, such “financial” factors as the proclivity to save and invest, the level of interest rates, the demand for liquidity by individuals, corporations, and financial institutions, and nominal national income (NGDP) are *jointly determined*. Holding one variable constant – the rate of increase in the quantity of money – has not reliably stabilized either the rate of inflation or the rate of growth in national income (Svensson, 2008). If we use a broader measure of money as an indicator, say M3 or M4, we get a better empirical fit with nominal income, but its trend remains buffeted by the same financial factors. Friedman (1968) acknowledged this point with the comment: “The market rate will vary from the natural rate [which variation affects the rate of savings and of investment, interest rates, asset prices, and nominal income] for all sorts of reasons other than monetary policy.” Friedman’s comment somewhat undermined his case for money quantity determinism.

The Great Recession, followed by only a slow recovery in much of the world, has coincided with often-conflicting efforts to find an updated conceptual framework. Most have not succeeded. Among economic conservatives, momentum shifted back to the “hard money” analysis that Friedman sought for decades to undermine. Faced in the autumn of 2008 with the sharpest fall in economic activity in the US since the 1930s, a groundswell of opinion, often

²See Lo (2012) for an early review of literature.

³M is the supply of money, V is velocity of M (or the frequency with which money changes hands), P is the price level, and T is the volume of transactions – or real income.

⁴Congdon (2011) attempts to reboot monetarism using a broad definition of money.

⁵Pp. 84-85.

from credentialed economists, criticized the Federal Reserve for pursuing an excessively expansionist policy, one that would surely lead to accelerating inflation. Emblematic conservative viewpoints in the US appeared in the Congressional movement to “audit the Fed” – that is, to reduce its independence; and in a November 2010 letter to the *Wall Street Journal* signed by twenty-three mostly Republican economists calling for an end to quantitative easing (QE). Signatories included past Republican officials Michael Boskin, John Taylor, and Douglas Holtz-Eakin, as well as Stanford economist Ronald McKinnon and economic historian Niall Ferguson (WSJ, 2010). Hostility toward the Federal Reserve was not limited to conservatives. Self-described “socialist” Bernie Sanders co-sponsored audit-the-Fed legislation. “Market failures” exponent Joseph Stiglitz (2016) fears that expansionary monetary policy could lead to asset bubbles.

The hard money argument has by no means gone silent; but it has been undermined by the absence of significant price inflation in any of the world’s leading economies since monetary interventions began in 2008, indeed by the difficulty central banks in any of them have had in meeting even modest inflation targets. US treasury interest rates over the last several years have been historically low, suggesting that market expectations for future inflation are similarly low.

A more frequent policy response has been to confine monetary initiatives to influencing interest rates. Because the Federal Reserve emphasized interest rate decisions in its policy pronouncements, financial market participants have focused on them as a key indicator of the central bank’s intentions. The emphasis on interest rates cuts across conservative and liberal markers. Taylor Rules, which link short term interest rate targets to stabilizing unemployment and inflation levels, were sometimes taken as a replacement for targeting money quantities (Taylor, 2009), in effect reinforcing the impression that short-term rates are an essential, and “conventional”, policy indicator.

Former Fed Chairman Ben Bernanke did not embrace a Taylor Rule, but his account of policy during the financial crisis of 2007-2008 and afterward repeatedly emphasizes interest rates as the chief policy variable for the Federal Reserve (Bernanke, 2015). Short-term treasury rates were zero-bound – between zero and 20 basis points -- from November 2008 until the fall of 2015. These are levels associated with risk aversion and high preference for liquidity, indeed they approximated “liquidity trap” levels.⁶ In December 2008 and March 2009, the Fed undertook quantitative easing, which was dubbed “unconventional” policy, and was sometimes interpreted as an effort directly to inject new money. But Bernanke has indicated that the Fed, on the contrary, sought to work through the channel of lowering longer-maturity interest rates. He has explained that the Fed’s October 2008 decision to pay interest on commercial bank reserve holdings at the Fed served to constrain increases in money aggregates that might otherwise have resulted from aggressive open market operations (Bernanke, 2013). (In fact, lower long-term rates would encourage issue of longer dated credits for mortgages and otherwise – which would gradually boost money quantity. Also, there was some leakage – not *all* of the commercial banks’ new liquidity was put on deposit at the Fed as excess reserves.)

Like the monetarist approach to money quantities, interest rate targeting treats an intermediate variable as exogenous to determining national income – when interest rates are in fact endogenous to a variety of monetary and financial factors. The conceptual problem with using market interest rates as a policy target is that anticipated returns on investment (which are reflected in the “natural rate”⁷) are implicitly more volatile than the market rates that central banks seek to manage.⁸ Economic recovery requires that the market rate be no higher than the natural rate, and preferably lower. Natural rates, however, reflect *expectation* of future spending and liquidity demands, and hence of future profitability.⁹ Interest rate targeting alone does not easily allow for incorporating expectations – as we cannot anticipate the relationship between market rates and future levels of volatile natural rates. Hence interest rate level targeting has had disappointing results when the investment climate turns sharply for better or worse. Taylor Rules, for example, are usually based on current unemployment and inflation data. (On occasion, Taylor Rules have applied anticipated future levels.) Further complicating the task of interest rate targeting, in recent years the (unobservable) natural rate has

⁶Keynes (1936) reasoned that in conditions where interest rates could not be lowered further, “absolute liquidity preference” might hold. He observed, “In this event, the monetary authority would have lost effective control over the rate of interest.” P. 207. This condition has been described as a “liquidity trap.”

⁷The natural rate is sometimes called the “equilibrium real rate” – the rate at which the economy’s output is equal to potential output, without underperforming or overheating. Sumner (2016) defines the natural interest rate as “the rate at which inflation and NGDP remain on target.”

⁸E.g., Keynes (1930) frequently noted the volatility of the natural rate, just as Keynes (1936) often remarked on the volatility of the (conceptually similar) schedule of marginal efficiencies of capital.

⁹Johnson (1997) notes obstacles to anticipating “rationally” what natural rates will be in the future.

sometimes been negative – which has led some central banks to experiment with negative interest rates.¹⁰

Under such all-too-frequent recent circumstances, pledges by central bankers to keep interest rates at close to zero for years into the future are at best confusing to financial markets as a signal about direction or trajectory of recovery in investment or employment. Less favorably, pledges into future years of zero-bound interest rates may telegraph that central bankers lack either the will or the means to boost very low equilibrium real rates – that is, the market cannot expect them to spring a liquidity trap. Such pledges suggest to potential investors that any economic recovery will be drawn out and bumpy. Pledges aside, near-historically low treasury rates across the spectrum during the last several years offer further evidence of expected weak demand well into the future.

Friedman (1998) sharply criticized the Bank of Japan (BoJ) for confusing very low interest rates with an “easy stance of monetary policy” during the 1990s. He argued instead that zero-bound interest rates sometimes reflect prior collapse of aggregate demand. In a similar vein, an earlier Friedman (1968) suggested that the way to increase nominal market rates was aggressively to increase the money supply, and hence aggregate demand and prices, through debt market operations. Professor Bernanke (2000), before he joined the Federal Reserve, similarly criticized BoJ for expecting very low interest rates to lead to recovery. He indicated that BoJ would have done better to engage in aggressive debt market operations. His subsequent tendency as Federal Reserve Chairman to concentrate more narrowly on short and long-term interest rates has drawn criticism from critics, including Sumner (2010), who view some Fed decisions as a backtrack from his earlier understanding, and even as timid.

Another consequence of the loss of confidence in monetary action has been the revival of “Keynesian” fiscal arguments – that the best way to revive a sagging economy is through public sector borrowing either to finance infrastructure spending or to boost consumption through transfer payments. Where many hard money advocates see monetary activism as portending out-of-control inflation, some to the left doubt that private sector participants will increase their spending no matter how liquid they become. This fiscalist argument has taken added life since 2008 in the face of persisting zero-bound interest rates in the US, the eurozone, and elsewhere. Prominent advocates have included Stiglitz, Paul Krugman, and Larry Summers. Bernanke’s (2015) memoir, in the same spirit, frequently indicates frustration that the US Congress would not boost demand through aggressive fiscal expansion.

In further evidence of breakdown in consensus,¹¹ Stiglitz (2016) argues not only that monetary expansion beginning in 2008 did not induce recovery from the Great Recession but also that Friedman’s monetary approach does not explain the coming of the 1929-1933 Depression. Stiglitz thus casts his net wide to suggest that the largest economic fluctuations of the past century did not have monetary causes, Friedmanite or otherwise. But Stiglitz’ fiscalist argument limits monetary mechanisms by definition to realized quantity and interest variables, without taking into account the channel of market expectations. To illustrate, the Fed’s often-cited open market purchases in mid-1932 had limited impact because financial markets anticipated that gold standard constraints – including fear of reserve outflow – made it unlikely that the Fed purchases would continue (Sumner, 2015).

Almost on his assumption of power in March 1933, Franklin Roosevelt acted to allow the dollar to depreciate against gold. Following three-and-a-half years of depression, the US then saw a sharp increase in economic performance -- to register a one-off 57 percent jump in industrial production in the next four months. Sumner points to gold standard constraints on monetary activism prior to 1933, followed by the explosive nature of recovery *almost immediately* after those constraints were lifted. The before-and-after impact on expectations better explains those events than does the Friedman and Schwartz (1963) story of changes in money quantities acting with a lag. (Sumner, 2016) Following devaluation of the dollar in 1933, investors expected the constraint on the supply of US currency to lift relative to demand –and did not await confirmation in a rising US money supply.

Sumner observes that, were the fiscalist argument correct, a combination of higher US taxes and reduced spending in 2013 would have caused a slowdown or reversal of growth that year. In the event, however, an aggressive monetary stance (which included QE) resulted in a speed-up in real GDP growth from 1.3 percent in the 12 months ending in December 2011 to 2.7 percent during the following year (BEA¹²), and in NGDP growth from 3.2 to 4.3 percent (BEA¹³). The S&P 500 stock index also rose markedly in 2013 – combined evidence that monetary factors may in fact dominate

¹⁰Bernanke’s (2016) memoir does not mention negative interest rates. His successor Janet Yellen has indicated that the Fed might consider using negative rates were economic signals to worsen. (CNN, 2016)

¹¹Following publication of Friedman and Schwartz (1963), “consensus develop[ed] among economists that the Great Depression was in large part due to monetary phenomena and in particular to the Federal Reserve letting money growth decline” (Taylor, 2009).

¹²<http://www.multpl.com/us-real-gdp-growth-rate/table/by-year>

¹³<http://www.multpl.com/us-gdp-growth-rate/table/by-year>

fiscal decisions in their effects on recovery (Sumner, 2016). I have argued elsewhere that Keynes' own case against monetary policy effectiveness was surprisingly weak -- whether we look at his empirical evidence or his theoretical argument (Johnson, 2016¹⁴).

Similarly, a conventional view that low interest rates demonstrated easy monetary conditions in the US during August, September, and October of 2008 is contradicted by the sharp rise in the dollar-euro exchange from 1.60 to 1.25 over nearly the same period. The strengthening of the dollar was a systemic deflationary signal, indicating market expectations that dollars were, and would remain, scarce relative to their demand (Mundell, 2012¹⁵). The rising dollar was matched by steep falls in the dollar price of oil, gold, and other commodities -- and, because of the dollar's role in world liquidity -- also in commodity price declines measured in other currencies. Economic indicators in the US, including NGDP growth, flattened in the third quarter and turned negative in the fourth. Sumner (2016) is unusual among US economists in drawing attention to this evidence from the foreign exchange market. Tim Geithner (2014), who in 2008 was president of the New York Federal Reserve Bank, and Bernanke (2015) do not mention the dollar exchange, either on its way down prior to July 2008, or as it recovered sharply after that. One infers that it was not a topic at FOMC meetings -- indeed, even as the dollar ascended, some regional Fed presidents continued to see over-heating as the primary threat.

We can generalize that both monetary and fiscal policy work in the first instance by influencing expectations, rather than by the direct impact of increased money, lower interest rates, or more spending. Absent a near-term matching increase in money, expectations of future growth can be accommodated by increased velocity of circulation. Krugman, a fiscalist Keynesian, has doubted the impact of money injections by the Bank of Japan at intervals during the late 1990s and early 2000s. Sumner responded that the injections failed because markets did not expect them to continue. Indeed, at one point the Bank of Japan sought to reassure its public that Japan would not experience price inflation as a result of the new money -- which gainsaid the purpose of the injections in the first place! (Sumner, 2012) In parallel fashion, Cogan and Taylor (2010) argued that Obama Administration attempts at fiscal stimulus during 2009 did not succeed because the public would save, rather than spend, any new cash. A Keynesian's response (e.g., Krugman, 2009) would have been that stimulus spending works only if it reaches critical mass and the public expects it to continue.

2) *Second-order Targeting*

Friedman's (1968) argument that monetary policy acted with a lag precluded targeting the price level directly; he could only advise that stable money growth would likely result in stable prices, or perhaps in a stable, and low, rate of price increases. But if, drawing on reasoning above, monetary policy works through the channel of expectations, then the time "lag" for impact on the second-order objective is compressed, or vanishes altogether. When the impact lag disappears, central banks are able to adapt open market operations or other interventions to build or manage expectations for second-order variable targets -- eg, for price level or nominal income.

When central banks in the past sometimes targeted M (or non-borrowed reserves, in the case of the Fed during part of Paul Volcker's first term,) they were not using their capacity to influence expectations. Similarly, when the Bernanke Fed indicated that interest rates would stay low over a period of several years, it undermined its own channel for potentially influencing expectations for future levels of second-order variables. A more effective policy would have set a target for a higher rate of inflation, or for an aggressive rate of nominal income growth. Targeting second-order variables enables a central bank to stabilize expectations, even over the short period.

A premise in Sumner's embrace of monetary action is that even in conditions of near-zero rates, central banks are not "out of ammunition;" expanding the supply of liquidity can directly boost economic activity. Sumner embraces the Bernanke Fed's quantitative easing, noting that while the Fed should have moved sooner, rounds of QE "did help end the recession in the United States" (Sumner, 2016). Over a period of several years post-2008, the US stock market went into a tailspin whenever someone at the Fed suggested reducing ("tapering") the volume of QE. Monetarist Tim Congdon offers perspective:

One way of denigrating debt-market operations is to classify them as "unconventional" techniques of monetary policy. On the contrary, the epithet "unconventional" should be attached to the unfortunate modern habit of regarding the setting of short-term interest rates as the alpha and omega of monetary policy. The tendency to see the setting of short-term interest rates as, by itself, a complete description of monetary policy results in a grotesque underestimation

¹⁴Keynes cites four cases from the 1890s to the 1930s (two of them in Keynes, 1930) to tout the importance of fiscal intervention. In none of the four does Keynes include adequate discussion, or sometimes even acknowledgement, of systemically important monetary contexts (Johnson, 2016).

¹⁵Mundell has also mentioned the July-November 2008 dollar-euro run-up in oral discussion, e.g. at his Santa Colomba conference in 2009.

of the monetary authorities' ability to influence macroeconomic outcomes. (Congdon, 2011)

Congdon's argument (matching Friedman's) is that money quantity factors – not such financial factors as interest rates – primarily determine income. Although Congdon does not embrace NGDP targeting as a policy framework, he does share Sumner's conclusion that more extensive use of "unconventional" techniques might have changed economic history over the past quarter century:

Monetary policy [in a failed, conventional view] is 100 percent about money-market operations and the setting of the very short term interest rate.¹⁶ In the author's judgment this mistaken set of ideas goes a long way to explain the policy inertia in Japan in the last fifteen years and the more general failure of macroeconomic policy to avert the Great Recession. (Congdon, 2011)

But Sumner's argument goes a step further, to say that open market operations can quickly influence expectations, and hence boost the natural interest rate, thereby facilitating recovery. (Sumner (2016) Keynes in the *General Theory* similarly pointed to expectations as a channel through money injections might work:

...the schedule of marginal efficiencies of capital [an iteration on the discussion of the "natural" rate in Keynes (1930)] will partly depend on the effect to which the circumstances attendant on the increase of money have on expectations of future monetary prospects. (Keynes, 1936¹⁷)

This Keynes-Sumner concept moves us beyond Friedman's (1968) view that monetary policy moves with "long and variable lags."

These lapses aside, central banks have learned that inflation objectives are easier to realize than they once imagined. Many central banks now target inflation indexes; indeed, Canada, New Zealand, the UK, Sweden, Finland, and Australia adopted inflation targets during the 1990s. The German central bank at that time publicly used a money quantity target, but, "whenever there was a conflict between achieving the money-growth target and the inflation target ... [the Bundesbank] consistently gave priority to the inflation target" (Svensson, 2008)¹⁸. The European Central Bank is committed by its charter to price stability, which amounts to a rigid form of inflation targeting. Bernanke's Fed announced in November 2007 that it was adopting "flexible" inflation target (Bernanke, 2015) Friedman's (1968) condition has been met – the "state of our understanding" has changed as the role of expectations is recognized.

But inflation targeting has shortcomings. In the context of the Federal Reserve's "dual mandate," which requires attention to both inflation and unemployment targets, inflation targeting can work only if it is repeatedly adjusted, depending on the level of unemployment and, hence, of real growth.¹⁹ Central banks have traditionally wanted to "lean against the wind," that is, to implement counter-cyclical monetary policy. Bernanke (2015) acknowledges the dilemma with his clarification that price targets would be flexible, and only "needed to be met over a period of several years." But what we have seen during the recent period is that major central banks have been reluctant to allow their inflation targets to be exceeded – even during or in the aftermath of recessions. Keynes argued in his *Treatise on Money*, to the contrary, for aggressive monetary expansion in the face of a prior collapse of activity, particularly where wages and other cost factors were somewhat rigid. The hypothetical conditions he described were comparable to what would appear with 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. (Italics added.) (Keynes, 1930²⁰)

¹⁶Money market operations refer here to short-term loans by the monetary authority to banks with the intention of influencing the short-term policy rate. Debt market operations with non-bank counterparties seek to influence money stocks directly.

¹⁷ P. 298.

¹⁸Warren Coats, an advisor to at least 20 central banks in recent decades, agrees in discussion that most central banks now target inflation, and have in most cases been able to come close to meeting intended targets.

¹⁹The dual mandate was outlined in the Full Employment and Balanced Growth Act of 1978, commonly known as the Humphrey-Hawkins Act.

²⁰Vol. I, pp. 297-298. For a more recent statement, see Calvo, Coricelli, Ottonello (2013).

McKinnon (2015)²¹ noted the tendency of zero-bound US interest rates to trigger destabilizing hot money flows to emerging markets in pursuit of higher returns. Calomiris (2016) calls attention to various obstacles to lending, having to do with the microeconomics of banking, that arise from persistence of zero-bound interest rates. The economics of using bank branches is undermined when wholesale deposit rates come down to almost as low as branch-based no-interest deposit rates. The low interest environment over the last few years has seen reduced deposit-to-lending spreads and flattened yield curves. (The narrow spreads and flat yield curve likely reflect soft aggregate demand -- rather than some inevitable consequence of very low interest rates.) Another consequence of narrowing spreads is that banks then look for higher returns through riskier projects.²² Both McKinnon and Calomiris propose boosting market interest rates as a corrective. The problem, of course, is that even low market rates may be high relative to natural rates in the post-2008 low-demand environment; absent a parallel effort to raise overall liquidity, higher market rates are likely to bring more contraction, not less. As Friedman (1968) observed, the best way to raise interest rates is by “engaging in an inflationary policy.” Such a policy cannot be implemented as long as inflation targets are maintained at long-term low levels.

We need a second-order target that facilitates counter-cyclical monetary policy. It should also make it easier to meet *both* inflation *and* unemployment mandates. Summarizing other research, Sumner (2016) notes that changes in unemployment correlate more with moves in NGDP than with changes in the rate of price inflation. And, following Keynes’ reasoning, policy should seek to make changes in the rate of inflation counter-cyclical. A steady NGDP target will make for more inflation, and hence less unemployment, during and coming out of a downturn. And, when the economy starts to heat up, by which time the level of employment and real growth have recovered, an NGDP target will explicitly put a brake on price level increases.

Where monetary policy is pro-cyclical, unemployment typically declines slowly in the wake of a downturn, and inflation gathers steam during the subsequent upturn. Recent history is indicative. During and coming out of the mild 2000-2002 recession, the US saw NGDP growth rates of 2.2 percent during the 12 months to December 2001 and 3.8 percent to December 2002. During the following five years, 2003-2007, NGDP growth picked up to annual rates of 6.4, 6.3, 6.5, 5.1 and 4.4 percent by December of each year (BEA). Inflation rose as the expansion gathered steam; measured by the GDP deflator index, prices increased from an annual average of 1.2 percent in 2002 to 3.4 and 2.7 percent during 2005 and 2006 (BEA). Concurrent data for the consumer price index moved roughly in step at 1.6, 3.4 and 3.2 percent (BLS). NGDP growth during these years was thus pro-cyclical; it was relatively slow during the recession and immediate recovery, but heated up during years that included the housing boom and much increase in off-balance sheet lending among financial and other firms. The annual average NGDP growth rate (compounded) over the seven years was about 4.95 percent. A more even NGDP growth rate over the cycle might have shortened the earlier recession and lessened some of the imbalances in the subsequent boom.

The pattern during subsequent years is revealing. NGDP *fell* by 0.9 percent from the end of 2007 to the end of 2008, and at an annualized rate of -1.3 percent in the third quarter of 2008 and -7.2 percent in the fourth quarter. During the following year, through December 2009, NGDP was nearly flat at +0.1 percent (recovering from a large decline during the first few months of the year.) The following six years saw NGDP increases of 4.6, 3.6, 3.2, 4.3, 4.1, and 3.0 for an annual compounded average of 3.8 percent (BEA). Not one of these years had NGDP growth as high as the compounded *average* for 2000-2007. If we add to the calculation the two years in 2007-2009, we get an eight-year annual compounded average NGDP growth for 2007-2015 of just over 2.8 percent. If we draw a trend line from 2000 to 2007, it will be followed by a sharp fall below the earlier trend during 2008 and 2009, and a *further* fall-off each subsequent year through 2015. The pattern of slow NGDP growth beginning in 2008 was matched by slow growth in broad money indicators during the same period (Hanke, 2015). US monetary authorities have sought low rates of inflation since 2007, and have indicated for most of that period that they intended to keep short-term interest rates close to zero – levels that, in fact, usually reflect ongoing weakness of aggregate demand.²³

A more aggressive policy would have generated a burst of inflation that might have lifted both market and natural interest rates to more normal, pre-2008 levels. This could have been achieved with aggressive debt operations directed toward increasing liquidity (not just toward lowering interest rates), ending interest payments on reserves held at the Fed, -- and using an NGDP growth target at least a percentage point higher than the annual 3.8 percent average of 2009-2015. Also, the central bank should make its intention more credible by “targeting the level,” meaning that falling short of (exceeding) the NGDP target over one time period will be compensated by an effort to exceed (undershoot) by an equivalent amount in the following period (Sumner, 2016). An effort should have been made in 2009, 2010, and

²¹Also Hanke (2015).

²²A New Jersey banker has called my attention to recent bank placements in cow futures and Venezuelan bonds.

²³As discussed in previous section.

2011 to reach NGDP growth targets high enough to return, or at least approach, to the 2001-2007 trend.

Unhelpfully, professional economists have encouraged doubt about whether monetary policy can be effective under conditions of zero-bound rates. We have seen, to the contrary, that monetary policy need not be restricted to managing interest rates, but can work also through quantitative easing (direct injections of liquidity.) And targeting expectations of future NGDP levels, can restore monetary policy to the centrality that it should have in generating growth and maintaining stability. The monetary contraction that began during the third quarter of 2008 and the slow recovery over subsequent years are evidence of serious policy error by the Federal Reserve.

3. Financial Crisis

After a period of more than two decades known as the Great Moderation, business cycles returned with a vengeance during 2007-2009 – a consequence aggravated by very tight money conditions from the third quarter of 2008.²⁴ Slightly preceding such monetary distress, what has been called a “Quiet Period” in US banking came to an end – that is, a period going back to the 1930s without system-wide runs on banks or bank-like entities (Gorton, 2009). Economists considering the Great Recession frequently focus attention on either monetary matters or on financial sector and regulatory issues. But to make sense of the downturn, we need to consider both.

Sumner emphasizes the monetary dynamics. He draws attention to financial crises that occur “when NGDP growth falls sharply relative to expectations” (Sumner, 2016). Sumner (2015) is surely correct that the US and central European banking crises that began in 1931 were triggered by the systemic monetary contraction and fall in NGDP in the months and years before. But much evidence points to different causality.²⁵ During the Quiet Period, from passage of the Banking Act of 1933 – which introduced deposit insurance -- the US endured a large number of downturns – including the depression of 1937-1938 and the sharp recessions of 1973-1975 and 1981-1983 – but none of them put the banking system under pressure.²⁶

Severity of credit crunches and of counter-party concerns – and hence of susceptibility to financial crisis -- can usually be quantified by interest rate spreads between secured or risk-free (usually sovereign-guaranteed) rates and rates on unsecured private sector assets. Serious financial pressure began in August 2007, as the spread between the LIBOR (unsecured) to repo (secured) cost of borrowing rose from approximately 20 to approximately 160 basis points (bp). A few days later the LIBOR-OIS spread increased from its usual level of below 10 bp, to about 90 bp (Taylor, 2009; figure 8).²⁷ These spreads fluctuated over the next year, sometimes moving to even higher levels, but never fell enough to approach pre-August 2007 levels. The financial system was susceptible to crisis through the entire period. The LIBOR-OIS spread exploded to 364 bp in October 2008, but came back to 128 bp by the end of 2008 (Gorton and Merrick, 2010; p. 18), and to the 10-15 bp range by September 2009 (Wikipedia, OIS), as the storm passed.

There was no significant fall-off in NGDP growth prior to the increase in spreads in August 2007. Using quarterly data, NGDP increased by 4.5 percent in the twelve month period from June 2006 to June 2007, and at an annual rate of 4.1 percent during the quarter through September 2007 (BEA²⁸). Hence the immediate pre-crisis period saw faster NGDP growth than did 2001, 2002, or any of the years since 2008 – years that saw no bank crises or money market pressures.

We will do better to look for roots of financial crisis in financial fragility – that is, where *stocks* of longer-term assets are mismatched on a balance sheet against *stocks* of short-term liabilities, or where the assets are themselves of questionable value. The 1933 Act and introduction of deposit insurance the following year ended retail bank panics in the US. But changes in financial behavior, in part induced by deregulation since the 1980s, led to a large increase in banking-like activity among scarcely regulated financial firms – dubbed “shadow banks.” Shadow banks have borrowed extensively, often for short maturities, usually backed by repurchase (repo) agreements with securitized collateral. The collateral, especially in the middle years of the last decade, was often based on a growing stock of housing loans, including for subprime mortgages, which were then packaged into often non-transparent Mortgage Backed Securities (MBS). The event of a drop in housing prices beginning in 2006 called the value of MBS collateral into question. The

²⁴Taylor (2009) uses the term “Great Moderation”.

²⁵Sumner’s FA article is about monetary policy, not financial crises. He agrees via email exchange that the 2007-2008 financial crises occurred despite reasonably steady NGDP growth.

²⁶The Savings and Loan crisis of the late 1980s was a partial exception; but Gorton (2009) treats it as non-systemic, confined to a portion of the financial system.

²⁷LIBOR is the London Interbank Offered Rate, a private sector rate. OIS is the three-month overnight index swap. A swap involves credit exposure on net interest payments, rather than on underlying principal. A swap therefore involves much less counterparty exposure than exists for an unsecured bank credit.

²⁸Quarterly data for NGDP are compiled from Real GDP and GDP Deflator indexes.

2007-2008 financial crisis was driven by a wholesale bank run in the shadow-banking sector. Most subprime loans were not originated by regulated commercial banks, and most were packaged into securities and held by nonbanks (Blinder, 2013) (Gorton and Merrick, 2010). Once the value of securitized assets was called into question, counterparty risk in repo markets became palpable. Fears then spread for the value of other classes of securitized assets.

After money market spreads opened, Fed officials apparently concluded that they faced a monetary problem of insufficient liquidity. In what was intended as aggressive easing, the Fed brought overnight interest rates down from 5.25 percent in August 2007 to 2 percent in April 2008, levels below where Taylor Rule guidelines would have put them (Taylor, 2009). The Fed's Term Auction Facility (TAF) was introduced in December 2007 to facilitate easier bank borrowing. During August 2007-April 2008, the dollar weakened from 1.36 to 1.56 against the euro, and it fell further to over 1.60 in July 2008 – a pattern of dollar weakness roughly matched against currencies other than the euro. The LIBOR-OIS spread came down to 30 bp or so during January and February 2008, but then rose again to the 60-80 bp range for the next several months. Taylor (2009) sees this pattern as evidence that the source of unease in the market arose from counterparty risk rather than illiquidity.

Offering some counter-evidence, annualized NGDP growth during the first half of 2008 was only about 2.0 percent. Taken in isolation, this rate of NGDP growth suggests too little monetary expansion, not too much.²⁹ But other price data suggest that stance of monetary policy was easier. The GDP deflator and consumer price indexes (CPI) moved roughly in step during 2001-2007, showing increases of 17.9 and 20.6 percent. But this changed noticeably from December 2007 to June 2008 as the deflator index (reflecting the cost of goods and services produced in the US) grew at just over 1.0 percent, for an annualized increase of 2.1 percent. The CPI in contrast rose by 5.5 percent over the six month period – or by 11.4 percent annualized. The producer finished goods index rose by 5.9 percent over the same period, or 12.2 percent annualized. (BLS) The Mundi commodity price index meanwhile saw an historic spike of 65 percent in 11 months (72 percent annualized) from August 2007 to July 2008 (Indexmundi). It seems a safe inference that the world economy was not constrained by a shortage of dollars during the first half of 2008.

It is thus unlikely that interbank confidence could have been restored by more determined monetary expansion during the first half of 2008. The best corrective would have involved increases in capital and introducing some regulatory oversight regarding the quality of assets in shadow banks, perhaps combined with aggressive “stress testing” beginning in late 2007. Instead, because the problem was treated as one of insufficient liquidity, the capital issue was addressed only with Treasury injections of long-term debt in October 2008 (Taylor, 2009; Figure 13), and with more-than-usually credible bank stress tests the following Spring.

Balance sheets of financial institutions should be managed to absorb losses that may arise from even severe economic downturns. A slowdown of income or revenue *flows* should trigger counterparty risks only under unusual circumstances. Some countries have gone for very long periods without financial crises; Britain, for example, had no systemic crisis from 1866 until 2007 (Gorton, 2012). The frequency of crises in the US prior to 1934 made it something of an international outlier (Gorton, 2010). Financial firms that maintain capital balance should be able to turn to central banks for liquidity assistance – as the latter were established in part to formalize pooling of reserves. Alas, none of the institutions that faced crises in 2008 – Bear Stearns, Lehman Brothers, Merrill Lynch, Washington Mutual, AIG – were regulated as commercial banks, so they did not have automatic access to the Fed discount window.

Sumner (2016) argues that the Dodd-Frank Act was “well-intentioned” but misdirected, as the roots of the problem were monetary, not regulatory. Dodd-Frank is a lengthy bill, much of which has been criticized. But an important motive in drafting it was to bring at least a portion of the sector where the financial crisis occurred -- shadow banks (securities and insurance firms) -- under Federal Reserve supervision.³⁰ The view that financial crises are caused by shifts in interest rates or other monetary factors, or by changes in the fiscal environment – neglecting the role of capital structure -- is widely held, and has done damage.

Financial crises in developing countries illustrate similar patterns, and allow some generalization regarding their origins. Prime examples include Latin American crises in Argentina and Chile around 1980, in Mexico in 1995, and the 1997

²⁹A counter-argument regarding the falling dollar in 2008 might be that international capital flowed out of the US with the weakening of the domestic real estate market; consequently, the dollar would have weakened, and domestic investment would have shifted to export-oriented industries. This argument is not convincing because at the time the dollar fell almost everywhere, including against currencies of other economies that had seen real estate meltdowns.

³⁰Some Chicago School economists, e.g. Eugene Fama, argue that a financial crisis in the US would do limited damage were it allowed simply to burn out, absent government intervention (*Chicago Booth News*, 2011). Gorton offers evidence, to the contrary, that financial crises have large costs; he also cites evidence that firms reliant on external finance tend to grow more slowly in years after a crisis (Gorton, 2012).

“Asian crisis” – followed by crisis in Brazil and Russia. All of these were preceded by voluminous capital inflows, rising domestic prices and growing interest parity violations (where two countries with fixed exchange rates have different interest rates.) In some cases, just as capital inflows slow, and income expansion hiccups, governments were forced to raise interest rates on their short-term debt – which could lead to credit squeezes elsewhere in the economy, a run on foreign exchange reserves, and pressure to devalue. Absent the capital imbalance caused by the initial inflows, banking and currency crises would not have occurred (Eatwell and Taylor, 2001).³¹

The IMF, facing these crises, usually neglected balance sheet mismatches (Johnson, 2005). In most cases, it instead demanded that small countries reduce their government budgets, and perhaps increase taxes, raise interest rates, and devalue. In contrast, the late Rudiger Dornbusch (1999) argued that the national balance sheet deserves “near exclusive focus” in understanding the causes of then-recent crises, not only in East Asia, but in Mexico, Russia, and Brazil.

Financial crises in large rich countries have some structural commonality with banking panics and currency runs in smaller, poorer countries. NGDP targeting (or other monetary policy rules) alone would not address financial sector balance sheet issues, or the kind of asset-liability mismatches that generate counterparty concerns and can cause financial panics. As a first approximation, banks were undercapitalized during 2007-2008 – especially US shadow banks. Similarly, emerging market countries subject to currency crises in the 1980s and 1990s required restructuring (lengthened maturity) of sovereign debt and increased foreign exchange reserves. These requirements were eventually addressed: in the case of US shadow banks, as noted, through TARP injections of long-term debt; in the case of FX reserves, through massive accumulation of US dollars – a flip side of growing US balance of payments deficits.

4. Internal Balance and External Stability

Another area for caution in Sumner’s embrace of NGDP targeting lies in its Friedmanite, closed-economy logic. Keynes’ *Tract on Monetary Reform* (1923) – which is often viewed favorably by monetarists and their successors – drew an opposition between conflicting “aims of monetary policy”: that is, between internal balance (domestic prices, employment and growth) and external stability (exchange rates, perhaps a fixed currency-to-gold link.) Keynes (1923) acknowledged that a relatively small country with a large dependence on foreign trade might choose external stability, even at a cost of some domestic price inflation or deflation. But the thrust of Keynes’ argument was that larger economies, those of Britain, France, or Germany, should be prepared to let their exchanges float against each other’s, and certainly to end their gold link. Friedman (1968) took the case further, arguing that foreign trade and investment, because they comprised only about 5 percent of the US economy in the 1960s, should not be allowed to drive monetary policy. Any impact from trade or investment, he said, should be absorbed through adjustments in the price of foreign exchange – leaving domestic authorities unencumbered in pursuit of domestic inflation and employment goals.

Keynes (1923) argued that trade imbalances are rectified through price adjustment – that is, the surplus country would see higher prices, while prices would decline in the deficit country. Within this partial equilibrium framework, currency appreciation or depreciation would facilitate necessary price and wage adjustments. In fact, Keynes’ argument mis-represented the adjustment mechanism – a mistake repeated in his debate on the transfer mechanism with Bertil Ohlin in the *Economic Journal* a few years later, and leaving “a legacy of error” (Mundell, 1992). In an applicable general equilibrium framework, transfers of income, expenditure, securities and real estate holdings, and government reserve stocks can take place without a change in prices of traded goods, or in prices of their inputs. The use of floating exchange rates – far from necessary to correct payment imbalances – may instead introduce self-reinforcing price volatility.

Another flaw in the monetarist case for floating exchanges appears in the premise that having a floating exchange rate would be an alternative to holding foreign exchange reserves – as there would be no fixed exchange to defend (Friedman, 1953). This argument failed on economic grounds, as few governments have been willing to allow “clean” floats – exchange rate volatility is damaging to investment and employment in the traded goods sector. So governments want enough reserves to be able to intervene in FX markets. In fact, world reserve holdings have grown from about 2 percent of world GDP in 1970, when the fixed rate system was intact, to over 15 percent of world GDP in 2007, when most currencies floated (Coats, Di, and Yuxuan, 2015; Figure 10³²).

At about the same time as the Bretton Woods fixed-rate framework was breaking down, Robert Mundell, in two papers presented in 1970, launched a counter-attack emphasizing the importance of external stability and in support of fixing exchange rates. Mundell’s argument drew attention to the role of a common currency in removing exchange risks, and hence in encouraging cross-border diversification of assets and related improvements in capital efficiency. Citizens of a

³¹Also, Pettis (2001).

³²Source: IFS, IMF; Board of Governors of the Federal Reserve System (US), retrieved from FRED, Federal Reserve Bank of St. Louis

country sharing a common currency that suffers an economic shock (e.g., where a major exporting industry suffers a competitive setback and loss of foreign markets) would maintain much of their stock of hard currency liquidity. They would be more likely than without a common currency to hold cross-border assets (McKinnon, 2004).

Sumner's argument for NGDP targeting is domestically-focused, and does not broach discussion of external stability or currency integration. Given relatively weak economic performance in the Eurozone since 2008, and rising nationalisms – consider the Brexit and Trump votes – we are unlikely to see further movement toward currency integration among major economies in the near future.³³ Indeed, floating rates may better align with political realism than does a fixed rate model, whatever our judgment of the underlying economic reasoning. But understanding can expand even where policy is passive. It is instructive to view the events of 2007-2009 in an open-economy, international context.

Changes in NGDP are calculated using the GDP deflator price index – which measures only domestically produced goods and services in the economy. A subdued pace of increase in the US GDP deflator (while real GDP dropped by about 0.5 percent) indicated sluggish US performance from the third quarter 2007 into July 2008. Strictly following NGDP targets, we might conclude that US monetary policy should then have been more expansionary, no matter how far the dollar fell against the euro – to 1.70, 1.80, or 1.90. But use of a price indicator that measures only domestically-produced items separates US economic conditions from those elsewhere, treating an open American economy as though it is closed. The falling dollar signaled that US monetary policy was exporting significant price inflation. This was especially the case as the weak dollar trend was co-incident with upwardly spiking international commodity prices. This evidence should have been a signal to look at headwinds from non-monetary sources, hence to respond to evidence of persistent risk in financial markets and fragility in capital structures.

The subsequent sharp recovery of the dollar after July 2008 was evidence that what had been very easy monetary conditions rapidly turned contractionary. (Perhaps higher commodity and traded-goods prices led to fear that liquidity was insufficient to sustain them, bringing an initial shift upward in liquidity preference.) Once again, the GDP deflator data understated what was happening. During the last two quarters of 2008, when the rising dollar indicated systemic deflationary pressure, US prices measured by the US deflator index actually *rose* by about 0.4 percent, or 0.8 percent annualized. But the CPI, which includes the impact of price changes with origins outside the domestic US, fell significantly by 3.9 percent over the same two quarters, or 7.6 percent annualized.

Consequently, market expectations were reflected more quickly in foreign exchange rates – which anticipated systemic feedback -- than in the measured changes in US NGDP. The exchange value of the dollar began to rise in July and August 2008, but the drop in NGDP gathered steam only in the fourth quarter. From a policy perspective, even if the first objective of monetary policy is internal balance, external stability conditions merit attention. It should be possible to calculate changes in nominal income in a way that would take into account broader measures of price data.

4. Concluding Note

Monetary policy-makers usually have more policy objectives than levers to attain them. Regarding internal (domestic) balance, they want to suppress inflation while maximizing employment. As an external objective, they would like to stabilize exchange rates with their countries' trading and investing partners. An ideal, if improbable, monetary policy would facilitate maintaining both internal balance and external stability.

The use of inflation or NGDP targeting to achieve internal balance would be an improvement over policy rules focused on the quantity of money or interest rates, both of which are only intermediate objectives. Second-order targeting (of inflation or NGDP growth) can be used instead to shape expectations of future market conditions – allowing ongoing adjustments in management of money quantity and short-term interest rates. An NGDP framework allows monetary policy to address *both* inflation and unemployment objectives. When the economy is slow, NGDP targeting strives to raise aggregate demand and employment. When the economy heats up and employment prospects become more abundant, an NGDP target seeks to slow demand growth, and thereby to moderate price increases. Use of NGDP guidelines would allow central banks to “lean against the wind.” As NGDP fell sharply below trend during the third and fourth quarters of 2008, aggressive open market operations to prevent or reverse deflationary pressure would have been in order.

But we saw in 2007 and 2008 what an NGDP framework would not inform. The Federal Reserve treated the slowdown following August 2007 as a consequence of illiquidity (monetary constraint) rather than of growing counterparty risk. As a metric, NGDP tracks domestic production and prices. The pressure building toward crisis in the financial sector did not appear in NGDP data.

³³Coats (2014) models a prospective IMF-directed currency board that would stabilize currencies against the price for a basket of internationally traded goods, thereby avoiding both price inflation and the sort of deflationary pressure that weakened the interwar gold standard or the Eurozone post-2008.

A summary of the sequence of events in 2007-2008 calls attention to three fact patterns. First, movements in the dollar-euro exchange indicated that the monetary stance was too easy during most of the 12 months leading into July 2008 (hence that we should have looked to non-monetary causes to understand the distress), and too constrained afterward. Second, the financial crisis did not have its *origins* in monetary policy, either too easy or too tight – but rather in unstable balance sheets and questionable assets. Third, restrictive monetary policy after the summer of 2008 took the recession to a new depth, even as evidence of distress in money markets (financial distress) eased. As a guide to monetary stance, exchange rate signals came sooner and with more definition than did the NGDP signals, and should have received more attention from decision-makers during those critical months. But the dollar exchange, NGDP data, and the collapse in growth in broad money indicators all pointed to dramatic tightening of monetary stance that turned the financial crisis into the Great Recession. To avoid such errors going forward, monetary policy should be reasserted.

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