



# The Urgent Need for NGDP Targeting

## Learning from the last crisis

By Scott Sumner

BRIEFING PAPER

### EXECUTIVE SUMMARY

- The current economic crisis, caused by the response to Covid-19, has led to a historic drop in economic activity and increase in unemployment.
- In order to avoid a long-lasting recession, it is necessary to reconsider the current monetary policy of targeting inflation.
- Inflation targeting is dependent on flawed metrics, which are easily biased by non-monetary factors such as supply shocks and sales taxes, which do not require a monetary response. During this crisis, it risks excessively tight monetary policy.
- A nominal GDP target can address the dual concerns of macroeconomic policy, inflation and jobs, with a single policy target. It would allow for a looser, expansionary monetary policy during the current recession and help reduce the impact on jobs and growth in the longer run.
- Had central banks pursued nominal GDP targeting during 2008, it is quite likely that both the financial crisis and the recession would have been much milder.
- In order to minimise the damage of the current recession, the Government should provide the Bank of England's monetary policy committee a remit to:
  - target a nominal GDP growth of around 4% per annum over the coming years;
  - use “level targeting,” which means making up for past undershoots or overshoots — in practice, this would mean compensating for lower nominal GDP growth in 2020 by targeting a higher nominal GDP growth rate in 2021; and
  - have the central bank target market expectations of nominal GDP growth

## **ABOUT THE AUTHOR**

**2**

**Scott Sumner** taught economics at Bentley University between 1982-2015, and since then has been a research associate at the Mercatus Center of George Mason University. He earned a BA in economics at the University of Wisconsin and a PhD at the University of Chicago. His research has been in the field of monetary economics, particularly the role of the gold standard in the Great Depression.

Nominal GDP targeting is now more important than ever. We are experiencing the biggest economic shock of our lifetimes. The public has engaged in unprecedented restrictions on commerce, movement, and personal freedoms to stop the spread of a deadly virus, but at the cost of a historic slowdown in economic activity. In order to climb our way out of this crisis, and avoid the risk of a long-lasting recession, we need to radically rethink monetary policy.

Over the past few decades many central banks adopted a policy of inflation targeting. As of 2007, this policy was widely viewed as a great success, particularly in comparison with the unanchored monetary regimes of the 1970s. However, since the financial crisis and severe recession of 2008, questions have been asked about whether we can do better.

Nominal GDP targeting offers several advantages over inflation targeting. The ability of firms to pay wages and/or repay debts depends on the aggregate level of nominal income/expenditure (NGDP), not inflation. Because most contracts are denominated in money terms, a fall in nominal GDP results in fewer jobs and more financial stress on debtors. A stable path of nominal GDP would help to stabilize both the labour market and the credit market, while ensuring that inflation stays relatively low over the longer run.

In recent years, prominent economists including Larry Summers, Christina Romer, Michael Woodford, Jeffery Frankel, James Bullard and many others, have endorsed NGDP targeting. Canadian economist Nick Rowe cited the fact that NGDP was a better indicator of the appropriate stance of monetary policy than inflation during the crucial year of 2008, when the world plunged into a deep recession. At the time, the Federal Reserve and the European Central Bank paid too much attention to high inflation, while NGDP growth was slowing sharply. We must avoid making the same mistake again, which would prolong the economic hardship.

Some have pointed to the communications advantages of NGDP targeting. The public was confused in 2010 when Ben Bernanke indicated that the Fed was trying to raise the rate of inflation. Bernanke's policy guidance would have made more sense if he had indicated a need for a faster increase in national income (NGDP), which was the actual problem facing the economy. When central banks say they want higher inflation, they actually mean they prefer more aggregate demand, and expect higher inflation to be a side effect of more spending.

The following paper was originally written in 2011. The case for NGDP targeting has grown even stronger over the past nine years. For instance, during the spring of 2011 ECB monetary policy sharply diverged from US policy. The Fed continued trying to promote recovery with various QE programs, while the ECB increased interest rates several times in order to restrain inflation. Not surprisingly, Eurozone

---

<sup>1</sup> This paper is an updated version of Scott Summer, "The Case for NGDP Targeting: Lessons from the Great Recession," (April 2011), <https://www.adamsmith.org/blog/thinkpieces/the-case-for-ngdp-targeting-lessons-from-the-great-recession-2>.

NGDP stopped growing for several years, while US NGDP continued increasing at roughly 4% per year. The slowdown in Eurozone NGDP contributed to higher unemployment and a severe debt crisis, exactly the sorts of problems one would expect when NGDP growth rates fall sharply.

Countries outside the Eurozone, such as Iceland, were able to boost NGDP by allowing higher than normal inflation. Eurozone member Ireland was not able to do so, and thus saw less NGDP growth and suffered a much higher unemployment rate than Iceland. In the 2011 paper, I suggested that “tightening one’s belt” in a crisis should not be done by taking a big “vacation” (i.e. unemployment), rather it should be done with higher inflation that would reduce real wages. Living standards fall somewhat in either case, but with growing NGDP there is less unemployment.

I also suggested that fiscal austerity was not likely to slow growth if monetary policy targeted inflation or NGDP. A near perfect example occurred when fiscal austerity (spending cuts and tax increases) reduced the US budget deficit from roughly \$1050 billion in 2012 to \$550 billion in 2013.<sup>2</sup> In late 2012, a letter signed by 350 Keynesian economists suggested that this might push the economy into recession, and Paul Krugman claimed that this fiscal contraction was a test of the market monetarist claim that monetary policy could offset fiscal policy. If it was a test, then market monetarism passed with flying colours, as growth sped up during 2013. (Recall the equally misguided letter signed by 364 economists in 1981, with dire warnings of the effects of Thatcher’s policies.)

Over the years, I’ve refined a few of my policy recommendations, especially after criticism of my proposal to create an NGDP futures market and use futures prices to guide monetary policy. While I still believe my original proposal would work, I’ve also come to realize that a slightly less radical version would yield almost all of the benefits, while addressing the concerns raised by others. In this “guardrails” approach, a 4% NGDP growth target would be accompanied by a central bank promise to take long or short positions at 3% and 5% growth rates. Thus investors that expected higher than 5% NGDP growth would take a long position in NGDP futures contracts, and profit if actual NGDP growth exceeded 5%. The central bank would take a short position, betting on less than 5% growth. Similarly, the central bank would take a long position on 3% NGDP growth contracts, while bearish market traders would take a short position.

In this version, a lack of trading is not a problem as it indicates market confidence that the central bank is roughly on target, within the 3% to 5% guardrails. Even in that case, this regime is no worse than current (discretionary) policy. If however, the market sees policy clearly moving off course, then trades will pile up at one of the two guardrails, providing a warning signal analogous to the beeping noise a lorry makes backing up near an obstacle. Central banks would be free to ignore that warning, but should expect some sharp questions from the government if NGDP goes off course in the way predicted by investors.

---

<sup>2</sup> Scott Sumner, “The Keynesian shell game”, (January 2015), [https://www.econlib.org/archives/2015/01/the\\_keynesian\\_s.html](https://www.econlib.org/archives/2015/01/the_keynesian_s.html).

We don't have a NGDP futures market, but financial indicators and economic forecasts currently suggest that inflation and NGDP are both likely to be below target for the next few years.<sup>3</sup> The inflation forecasts are especially troublesome, as most macroeconomic models suggest that it is appropriate for inflation to temporarily overshoot the target during an adverse supply shock. Indeed this is one of the strongest arguments for NGDP targeting. Thus we should be especially concerned by forecasts that not just NGDP growth, but even inflation is likely to fall sharply in many countries.

The current recession is highly unusual, and even NGDP targeting would not be able to prevent high unemployment during a mandatory lockdown. In my view, central banks should target expected NGDP a year or two forward. Thus today, central banks should accept that NGDP will be low in the second and third quarters of 2020, and instead aim for NGDP in 2021 to be roughly 8% higher than in 2019, that is, a 4% annual growth rate. This idea is called "level targeting", which means promising to return to the original trend line targeted by the central bank, which might be 2% inflation or 4% annual NGDP growth. A monetary policy that produces adequate NGDP growth expectations for 2021 won't prevent a recession in 2020, but it will reduce pressure on borrowers and help to speed the recovery of the labour market in late 2020 and 2021.

I have increasingly come to believe that level targeting is the most important part of an NGDP regime. So much so that I'd prefer level targeting of the (core) price level to growth rate targeting of NGDP. Under growth rate targeting, central banks let bygones be bygones, and do not make up for previous policy under- or overshoots. It is increasingly obvious that the failure to level target during the 2010s has led to a certain loss of confidence in central bank policy throughout much of the world, especially when central banks are at the zero bound for interest rates.

This paper makes the case for nominal income level targeting, aka NGDP targeting, which offers several important advantages over inflation targeting, and no significant drawbacks. I will begin by discussing some theoretical advantages, and then explain how NGDP targeting could have benefited the UK during the financial crisis of 2007-8.

## **PART 1: THE ADVANTAGES OF NGDP TARGETING OVER INFLATION TARGETING**

A successful monetary policy should provide a relatively stable macroeconomic environment. Because monetary policy only affects prices in the long run, it's natural to visualize macro stability in terms of a low and stable rate of inflation. However monetary policy can also affect real output in the short run. Thus many central banks have a dual mandate, stable prices and relatively stable growth in output.

---

<sup>3</sup> Economic Research Federal Reserve Bank of St. Louis, "5-Year Breakeven Inflation Rate " <https://fred.stlouisfed.org/series/T5YIE>; Phillip L. Swagel, "Re: Comparison of CBO's May 2020 Interim Projections of Gross Domestic Product and Its January 2020 Baseline Projections" CONGRESSIONAL BUDGET OFFICE U.S. Congress, June 1, 2020, <https://www.cbo.gov/system/files/2020-06/56376-GDP.pdf>.

The criticism of dual mandates is that they lead to policy incoherence; what should the central bank do if both inflation and unemployment are above target?

Nominal GDP targeting provides a way to address both inflation and output stability, without placing the central bank in the confusing situation of having to aim at two separate targets. Consider a country where the trend rate of output growth is roughly 2.5%. A 4% NGDP target would ensure a long run rate of inflation of roughly 1.5%, with modest short term variation in response to real economic shocks, such as a sharp increase in energy prices. For instance, suppose oil prices rose sharply. Under strict inflation targeting, non-oil prices would have to fall to offset the increase in oil prices. If nominal wages are sticky, the fall in non-energy prices might lead to much higher unemployment. In contrast, NGDP targeting would allow a temporary period of above 1.5% inflation, along with somewhat lower output, in order to cushion the blow on the non-oil sectors of the economy.

The preceding example might make NGDP targeting seem less “hawkish” than inflation targeting, a backdoor method of allowing excessive inflation.

Yet the argument is completely symmetrical. George Selgin pointed out that NGDP targeting would produce lower than normal inflation during a productivity boom.<sup>4</sup> One of the criticisms of inflation targeting is that because central banks focus on consumer prices, they allow asset bubbles to form, which eventually destabilize the economy. Nominal GDP targeting cannot completely eliminate this problem, but it would impose more monetary restraint (as compared to inflation targeting) during periods where output growth was above normal. Indeed Friedrich Hayek advocated nominal income targeting for exactly that reason, to prevent “malinvestment” during productivity booms.<sup>5</sup>

Nominal GDP targeting can also help stabilize labour markets. Because nominal wages are adjusted at infrequent intervals, an increase in NGDP growth tends to lead to higher profits in the short run, and higher wages in the long run. During the period when wages are rising, some workers are underpaid, creating a tight labor market. Exactly the opposite occurs when NGDP growth slows. Stable NGDP growth tends to lead to stable wage growth. This means that workers with newly negotiated contracts receive similar wages to those on older contracts, and the aggregate wage rate is close to its equilibrium value (the wage rate that would occur if all wages were flexible.)

Some acknowledge that NGDP targeting can help stabilize output, but point to a serious cost: greater inflation variability. In fact, many of the problems generally associated with inflation are actually linked to NGDP volatility. For instance, inflation is said to raise the effective tax rate on capital, as most tax systems don't index taxes on interest and dividends. But the nominal interest rate may be more

<sup>4</sup> George Selgin, “Less Than Zero: The Case for a Falling Price Level in a Growing Economy” (March 1997), <http://www.iea.org.uk/sites/default/files/publications/files/upldbook98pdf.pdf>.

<sup>5</sup> Lawrence H. White, “Did Hayek and Robbins Deepen the Great Depression?” (Journal of Money, Credit and Banking, June 2008), <http://www.iea.org.uk/sites/default/files/publications/files/upldbook98pdf.pdf>.

closely correlated with NGDP growth than inflation, meaning that the tax distortion is better explained by high NGDP growth, rather than high inflation. Second, deflation (or disinflation) is often blamed for high unemployment. But once again the problem is actually caused by falling NGDP growth, as lower inflation due to productivity gains does not create unemployment. Third, low inflation is often thought to make a liquidity trap more likely. In fact, it is low NGDP growth that best measures the risk of hitting the zero rate bound. Interest rates fell to zero when Japan experienced mild deflation, but not when China experienced mild deflation.

Contrary to conventional wisdom, unexpected inflation is not unfair to lenders as long as NGDP growth is on target. If inflation were to rise sharply during a period where NGDP growth was stable, it would mean that a real shock had depressed the economy. Monetary policy cannot prevent some loss of output from a housing market slump; all it can do is to prevent the shock from unnecessarily spreading to otherwise stable sectors of the economy.

When real shocks occur it is only fair that both debtors and creditors share part of the loss. Suppose lenders made lots of foolish loans to the housing sector. This leads to a subsequent fall in real GDP, as housing construction plummets and workers must be retrained for other sectors. In that case NGDP targeting would lead to a period of above normal inflation, and lenders would bear some of the burden for this misallocation of capital, even in the absence of outright defaults. This is appropriate.

To summarize, it's not at all clear that the alleged weakness of NGDP targeting (higher inflation volatility) is much of a weakness at all. In contrast, there are many important weaknesses to inflation targeting. Let's first review the alleged benefits of inflation targeting. If prices rise sharply and wages are sticky, the economy may overheat and misallocate capital. If prices fall, firms lose money and unemployment rises sharply. From these examples it should be clear that the relevant inflation index would be one that measures the actual prices received by domestic producers. But that's not what we see in the real world:

1. A rise in the VAT rate can lead to higher measured inflation, without there being any increase in the net price received by producers. This can lead a central bank to tighten policy inappropriately (and vice versa.)
2. If a currency depreciates sharply in the foreign exchange market, import prices can rise significantly, even if there is little change in the net price received by domestic producers.
3. In some countries housing prices are measured using a rental equivalent. But measured rents often reflect out-of-date historical prices, not the rent received on newly leased housing units (which often allow several months of free rent during a severe recession.)

These problems are not merely hypothetical. Both the first and second issues have distorted the measured CPI inflation rate in the UK. In the US, measured hous-

ing prices in the CPI rose between mid-2008 and mid-2009, even relative to other prices. This was because the CPI relies on rental equivalents. Meanwhile, the price that producers actually received for newly built homes was falling at one of the fastest rates in history. Thus measured housing prices were not providing the sort of “prices” relevant for macroeconomic stabilization. Even if inflation was the theoretically appropriate target of monetary policy (and for all the reasons discussed earlier I don’t think it is) we don’t currently have inflation measures that embody the concept implied by our macroeconomic models—the net price received by producers.

## **PART 2: NGDP TARGETING AND THE CRASH OF 2008**

A striking feature of the last recession was the dramatic drop in NGDP between mid-2008 and mid-2009. In the US, 2009 NGDP fell at the sharpest rate since 1938. Even though the sub-prime crisis was centered in the US, nominal GDP in Japan, the eurozone and Britain fell even more sharply. During most post-war recessions British NGDP continued rising. Figure 1 shows the dramatic break in British NGDP growth.

One obvious question is whether there was anything the Bank of England could and/or should have done about this sharp decline in NGDP. But the question also needs to be examined in a broader context. Could NGDP targeting in all the major developed economies have prevented the Great Recession? If not, how much could an open economy like Britain have done on its own?

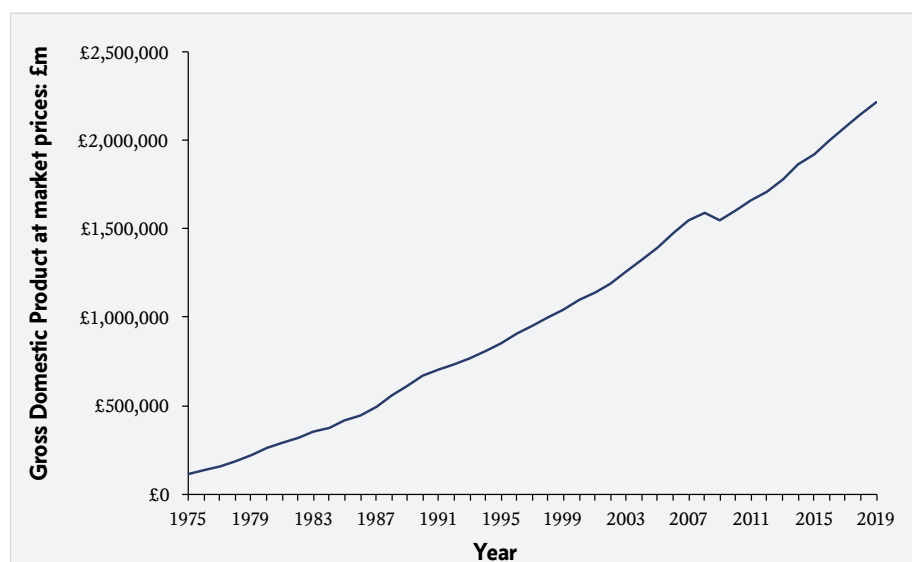
The Great Recession has been widely misunderstood by the public, the press, and even many economists. The standard view is that housing was overbuilt in the 2000s, and that housing prices rose to unsustainable levels. When the bubble burst there was a large drop in housing construction, and then a severe financial panic. This led to a sharp fall in aggregate demand and the deep slump which afflicted most of the developed world.

A closer look at the timeline does not support the standard view. Roughly 70% of the decline in housing starts in the US occurred between January 2006 and April 2008, and yet unemployment hardly budged, rising from 4.7% to 4.9%. By October 2009, unemployment had risen to 10.1%. Thus housing by itself cannot explain the Great Recession; there was clearly a generalized drop in aggregate demand that affected almost all industries. The severe drop in US real GDP occurred when NGDP fell sharply after mid-2008, and a broadly similar pattern occurred in most other countries, including the UK. Interestingly, estimates from Macroeconomic Advisers suggest that in the US almost the entire decline in NGDP occurred between June and December 2008.<sup>6</sup> But the severe phase of the financial crisis did not occur until after Lehman Brothers failed in mid-September, when the fall in NGDP was already half over.

---

<sup>6</sup> Macroeconomic Advisers, Monthly GDP Index (January 2011)



**FIGURE 1. THE UNITED KINGDOM'S NOMINAL GDP (1975-2019)**

In my view, the Great Recession was a smaller version of the Great Contraction of 1929-33. In both cases, NGDP fell sharply relative to trend. Because nominal income is the total funds people and businesses have available to repay nominal debts, a sharp decline in NGDP growth often leads to financial distress. During the Great Recession a sharp fall in NGDP caused a mild financial crisis centered on subprime mortgages (in 2007) to turn into a severe crisis that also affected non-subprime mortgages, commercial real estate loans, and industrial loans in late 2008. Most observers have reversed cause and effect, assuming a simple financial crisis recession transmission mechanism, whereas the actual pattern was much more complex, with lots of reverse causality.

Many observers also overlooked the importance of expectations. In late 2008, western governments were vigorously trying to bail out their banking systems, yet the problem seemed to get worse after each fix was adopted. The problem was that NGDP growth expectations plummeted in the last four months of 2008. As growth expectations declined, asset prices fell sharply, and this adversely impacted the balance sheets of the major banks. It was as if governments were trying to bail water out of a boat, without first patching the leak through which water was pouring in. NGDP targeting would not have completely prevented the financial crisis (which began in 2007 when NGDP growth was still adequate), but it would have prevented the crisis from worsening so dramatically in late 2008.

Some argue that “the real problem” was financial turmoil and overbuilt housing, and that these problems could not be papered over by printing money and propping up NGDP. In fact, modern macro theory tells us that to a very great extent, the “real problem” was nominal, a lack of nominal spending. Before rejecting this counter-intuitive argument, consider the following thought experiment. Suppose we could go back to 2006 and ask 100 prominent macroeconomists what would happen if central banks allowed NGDP to fall sharply between 2008 and 2009. Almost all would predict a severe recession. If you then added “and this decline occurred when the economy was already weakened by a financial crisis,” I doubt anyone would say, “well then it’s OK, the NGDP decline won’t cause any harm.” If someone suffering from pneumonia is suddenly stabbed by a mugger, it would

not be appropriate for the doctor to exclaim “no need to patch up this knife wound, the patient’s real problem is pneumonia.”

Some argue that there was nothing that could have been done in late 2008 to prevent a fall in NGDP, because the major economies were stuck in a liquidity trap. There are all sorts of flaws in this argument. First, during the period when NGDP fell sharply the major central banks had not yet reduced nominal rates to zero. Second, some central banks also implemented contractionary policies, such as the Fed’s decision to pay interest on reserves. Third, central banks can still provide stimulus by depreciating their currency once rates hit zero. For a large economy like the US there are political difficulties with doing this explicitly, but it is an option available to smaller open economies.

Of course all countries cannot simultaneously depreciate their currencies against one another, but they can do so against goods and services. Central banks have many options when nominal rates hit zero. In Sweden, the Riksbank began charging an interest penalty on excess reserves, which encourages banks to move newly created money out into the economy. The Fed engaged in “quantitative easing,” which boosted stock prices and raised inflation expectations in the fall of 2010. Data suggests that real economic activity picked up in the US in response. Central banks can also commit to a higher inflation or NGDP growth target over time. Because investors don’t expect the liquidity trap to last forever, this has the effect of lowering real interest rates.

Unfortunately, no central bank explicitly targets NGDP, thus we can’t know for certain that NGDP targeting would have helped during the 2008 recession. But we do know that NGDP targeting would have required a much more expansionary monetary policy stance than what we actually saw in most countries during late 2008 and 2009. Thus we can look at those countries that did provide somewhat easier money, to see if their experience was better than others. One country that completely avoided the recession was Australia. Interestingly, Australia had a somewhat higher trend rate of NGDP growth than other developed countries, and this allowed it to avoid the zero interest rate bound during the recession. Of course Australia also benefited from a resource boom once Asia began recovering in mid-2009, so monetary policy is not the only factor explaining its relative success.

A more apt comparison might be made with Sweden, which like Britain has a relatively open economy that is not part of the eurozone. One of the Riksbank’s most prominent governors is Lars Svensson, a Princeton University economist who has advocated “targeting the forecast,” i.e. adopting the policy stance expected to lead to on-target inflation.<sup>7</sup> Because inflation fell below target during the recession, this approach required a very aggressive policy of monetary stimulus. *The Economist* magazine’s survey of forecasters estimates that Sweden’s RGDP grew 4.6% in 2010, significantly more than the eurozone economies, and also much more than

---

<sup>7</sup> Lars E. O. Svensson, “Inflation forecast targeting: Implementing and monitoring inflation targets”, (June 1997), <https://www.sciencedirect.com/science/article/pii/S0014292196000554>.

Britain, Denmark and Switzerland.<sup>8</sup> The superior performance relative to Britain partly reflects Sweden's concentration on capital goods exports, whereas Britain had been held back by problems in its important financial sector. But Sweden also did quite well relative to other important northern European capital goods exporters, which suggests that greater monetary stimulus might have reduced the severity of the recession. Sweden's RGDP growth was 3.1% in 2011, higher than many other Western European countries.

To summarize, we don't have data from actual NGDP targeters during the Great Recession. But we know that NGDP targeting would have called for much more aggressive monetary stimulus in late 2008 and 2009. We also know that countries that tried monetary stimulus do seem to have experienced somewhat faster real growth. The UK faced two special problems that might have limited the success of NGDP targeting: a sharply depressed world economy, and a weakened financial system. Because the City is such an important part of the UK economy, it was inevitable that a worldwide financial crisis would slow growth in Britain. And because Britain is an open economy, the sharp drop in world trade would have inevitably slowed growth somewhat during late 2008 and early 2009. NGDP targeting cannot prevent real problems from having some effect on RGDP growth rates, what it can do is prevent real problems from triggering unnecessary general declines in spending, affecting all industries.

Some argue that if a spending binge leads to a debt crisis, countries must "tighten their belts" and accept a certain amount of economic pain. That is true, but it is important to distinguish between two types of pain, lower consumption and joblessness. As an analogy, if a family faced severe debt problems the head of the household would not announce "it's time for us to tighten our belts and go on vacation." Rather he or she would call for less consumption, and more work. High unemployment is not an effective solution to debt problems. An NGDP targeting regime in Britain would have depreciated the pound, and that would have reduced the current account deficit. That sort of belt tightening is appropriate. Real wages might also have fallen, slightly reducing living standards. Again, this is a painful but necessary adjustment. But these changes (a weaker pound and lower real wages) would also have led to higher employment levels. Hard work is exactly what a highly indebted entity needs, whether a household or an entire country.

One especially discouraging aspect of policy debates in the US and UK has been the inappropriate way people distinguish between fiscal and monetary stimulus. In both countries there is a tendency to debate monetary stimulus in terms of its effects on inflation, whereas fiscal stimulus is evaluated in terms of its effects on real growth. But both types of stimulus directly affect demand, or nominal spending, and only indirectly affect inflation and growth. How NGDP growth is decomposed into inflation and growth depends on the slope of the aggregate supply curve, not on whether fiscal or monetary stimulus is being employed.

---

<sup>8</sup> "The Economist poll of forecasters, February averages", *The Economist*, 3 February 2011.

For instance, there is widespread concern in Britain that the coalition government's planned fiscal austerity will slow growth. And there is also widespread concern that current policies of the Bank of England will lead to excessive inflation. But both cannot be true. If fiscal stimulus is likely to lead to inadequate demand in Britain, then ipso facto Britain needs higher inflation, not lower inflation. Either demand is adequate or it isn't. If it's adequate then fiscal austerity is not a problem. If it is not adequate, then it makes no sense to worry that monetary policy could lead to excessive inflation. Of course all this confusion would end if we talked about demand in terms of NGDP, not prices and output. Once one thinks of policy this way, it is natural to assign the responsibility for adequate NGDP growth to the central bank, and let fiscal policymakers worry about long run savings/ investment imbalances. Indeed if the monetary authority is targeting NGDP expectations, fiscal stimulus is a sort of "fifth wheel," which adds nothing to stabilization policy.

Nominal GDP targeting would also improve communication with the public. In the US the Fed announced that inflation was a bit too low, and hence they would engage in monetary stimulus in 2011. This made no sense to the average citizen; why should the Fed be trying to raise the cost of living? Indeed the Fed is not really trying to raise the price level; they are trying to boost NGDP growth. For any given rate of NGDP growth, they'd actually prefer more RGDP growth and less inflation. Talking about monetary stimulus in terms of nominal income has two advantages; it is more accurate, and it also is something that the public can understand. It makes sense that the central bank would be trying to raise people's incomes when we are in a severe recession and incomes have fallen.

### **PART 3: LEVEL TARGETING AND FORECAST TARGETING**

There are two ways of boosting the effectiveness of NGDP targeting, level targeting and targeting the forecast. Level targeting does not mean keeping NGDP constant, it means targeting a fixed growth rate trajectory, and making up for any near-term shortfalls or overshoots. Suppose the Bank of England has a 4% NGDP growth rate target, and that in 2015 NGDP growth was only 2%. With growth rate targeting they would still aim for 4% NGDP growth in 2016. With level targeting they would try to catch up for the shortfall in 2015, perhaps by aiming for 6% growth in 2016, or more likely 5% growth in both 2016 and 2017.

Theory suggests that level targeting is especially useful in a liquidity trap. If the central bank cannot cut nominal rates, level targeting automatically cuts long term real rates during a slump, by increasing NGDP and inflation expectations when near-term growth and inflation fall short of target. The advantages are so strong that in 2003 Ben Bernanke recommended the Bank of Japan adopt this approach (for the price level, not NGDP.) Interestingly the Fed has not done this, perhaps because inflation targeting of any sort is opposed by influential members of Congress.

The greatest advantage of level targeting is that it tends to prevent sharp NGDP fluctuations from occurring in the first place. As an analogy, consider a currency

band in a fixed exchange rate regime. When the exchange rate falls toward the bottom of the band, speculators buy the currency and this tends to boost the price. By analogy, if NGDP fell below the target trajectory, investors and businesses would expect more rapid future NGDP growth, and those expectations would boost current aggregate demand.

Targeting the forecast means setting policy so as to equate the policymaker's forecast and goal. If the goal is 4% NGDP growth, it makes no sense to set policy at a level expected to produce 6% NGDP growth. It would be like a ship captain announcing that under current settings of the steering wheel, the ship is expected to reach Liverpool, even though the goal is to reach Southampton. Obviously the steering should be set in a position that equates the goal and forecast, and the same is true for monetary policy.

Fed policy in September 2008 shows the disadvantage of using a “backward-looking” monetary policy, which fails to target the forecast. In a Fed meeting two days after Lehman failed, the Federal Open Market Committee decided to leave rates unchanged at 2.0%, citing a roughly equal risk of recession and (high) inflation. In fact, by that date 5 year inflation forecasts in the indexed bond markets showed only 1.23% expected annual inflation, well below the Fed's implicit 2% target. The Fed was looking backward, reacting to worrisome headline inflation rates during the summer of 2008, when oil prices were high. Had it been targeting the forecast, it would have cut rates sharply, which in retrospect would have been appropriate.

The *Financial Times* reported:

Others are open that the Bank [of England] is really targeting nominal gross domestic product growth of about 5 per cent a year regardless that this is not consistent with the Bank's strict 2 per cent inflation target objective.<sup>9</sup>

This was good news. But if the Bank of England is serious they need to set up a NGDP futures market and subsidize trading of NGDP futures contracts. This would give monetary policy a compass, allowing them to avoid a sharp rise or fall in NGDP expectations. If NGDP future prices started rising, the Bank of England could tighten policy, and vice versa.

In the long run an NGDP futures market could entirely eliminate the need for policy discretion. The Bank of England might promise to buy and sell unlimited amounts of NGDP futures at the target price (say 5% higher than current NGDP), thus making the policy goal equal to the equilibrium market price. Each purchase of an NGDP futures contract by speculators would trigger a parallel open market sale by the Bank of England. Alternatively, if investors expected sub-par nominal growth they would sell NGDP futures short, and this would trigger offsetting open market purchases by the Bank of England. In essence, the NGDP futures market

<sup>9</sup> Chris Giles, “Heat on Bank rises with inflation rate” *The Financial Times*, January 12, 2011, <https://www.ft.com/content/0d46d3a4-1e7f-11e0-87d2-00144feab49a>.

would be forecasting the setting of the monetary base that was most consistent with on-target nominal growth. The monetary base would respond endogenously to changes in money demand, keeping NGDP growth expectations on target. This is roughly analogous to a gold standard regime, but with NGDP futures contracts replacing a fixed weight of gold as the medium of account.

Arguably, the greatest advantage of targeting NGDP futures prices is not that markets can forecast better than the Bank of England, but rather as a mechanism for holding central banks accountable. During the 1970s most central banks knew inflation was likely to be well above 2% or 3%, and yet failed to take corrective action. In late 2008 the Bank of England understood that NGDP growth expectations were plummeting sharply, worsening the financial crisis, but again failed to do what was necessary to arrest that decline. Right now all the public can do is look on with dismay when nominal aggregates fluctuate wildly. Under an NGDP futures targeting regime the public would have a strong economic incentive to push monetary policy back on track during periods of instability.

Stable NGDP expectations would help stabilize asset markets and wage rates, which would improve the overall performance of the UK economy. It would not eliminate all price level fluctuations, nor will it prevent all business cycles. But it would help maintain policy credibility when the headline inflation rate moves outside the target zone. Most importantly, it can produce reasonably low average inflation rates, and also prevent real shocks in one sector from causing unnecessary harm to the broader economy.