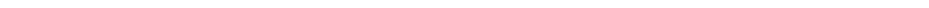


The real problem was nominal

The crash of 2008

Prof. Scott Sumner



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Foreword

The analysis in this paper also has important implications for the current eurozone crisis. There are of course many problems with the eurozone, for instance it is not an optimal currency area. But these problems have been made much worse by a series of mistakes, starting with the decision to have the ECB target inflation rather than nominal GDP. Once they had decided to target inflation, they should have opted for level targeting so that if interest rates fell to zero, monetary policy would still have traction. Under level targeting, when inflation undershoots the target, as it has in recent years, the inflation target would automatically rise in order to return the price level to the designated trend line, presumably about 2% per year. Higher inflation expectations automatically reduce real interest rates, making policy more expansionary.

The third mistake made by the ECB was to tighten monetary policy in 2011. During 2011, inflation briefly rose above the ECB's target, due to supply-side factors such as higher VAT rates and rapidly rising oil prices. However demand conditions remained quite weak, and inflation expectations were much lower than 2%. The decision to tighten monetary policy drove the eurozone into a double-dip recession, and as nominal GDP growth slowed sharply, the sovereign debt crisis became much worse. Recall that one reason to target nominal GDP is that this variable represents the resources that individuals, companies and governments have available to repay nominal debt. Financial crises tend to occur when there is

a sharp slowdown in nominal GDP growth created by excessively contractionary monetary policy.

A forward-looking monetary policy would have looked past the temporary one-time price level increases associated with higher VAT rates and rising oil prices, and instead responded to the looming threat of below target inflation produced by sharply slowing nominal GDP growth. Of course we are now seeing the effects of the previous slowdown in nominal GDP growth, as the eurozone inflation rates have fallen to extremely low levels and are likely to become negative in the near future. Indeed inflation expectations (as measured in the German index bond market) have fallen below zero over the next five years. This is especially shocking given that Germany is one of the few prosperous members of the euro zone. Conditions in most other countries are far worse.

Because the ECB foolishly raised interest rates in 2011, economic conditions deteriorated so sharply that policies that would have been effective in 2011, such as interest-rate cuts, were no longer effective in 2013. And because the ECB refused to engage in unconventional policies such as quantitative easing in 2013, when it would have been effective, conditions have further deteriorated to the point where any quantitative easing done in 2015 is likely to be ineffective, at least in the quantities contemplated by the ECB. To most observers ECB policy over the next few years will look increasingly “expansionary,” whereas in reality monetary policy is far too contractionary for the ECB to achieve its mandate of roughly 1.9% inflation. Each the year that it fails to do so makes it more difficult to achieve policy credibility with an understandably skeptical public.

As for the recent bout of quantitative easing: the policy would have been far more effective if done a year or two ago. Greece might still blow up, and think “less bad times” in the eurozone, rather than “good times”. It will still be somewhat effective, but not a game changer.

Introduction

In this essay I present a very counterintuitive view of the last five or six years. I ask the reader to consider the events since the global economic crash of 2008 that they may have understood in one way and ask whether perhaps there is a better, more coherent explanation of what's been going on. I will make five major points, all of which are controversial in most circles:

1. Monetary policy hasn't been ultra-easy since 2008, it has been ultra-tight.
2. Tight money caused the Great Recession, which greatly worsened the financial crisis.
3. The fiscal multiplier is roughly zero, due to monetary offset.
4. Monetary policy isn't about inflation, and fiscal stimulus isn't about real GDP.
5. There is no "wait and see" in macroeconomic policymaking. Within 5 minutes of a new demand stimulus initiative, we know all we'll ever know about its effects.

The first two of these have to do with the nature of the crisis, which is widely misunderstood. The standard view is that there was a financial crisis that caused the global Great Recession, during which monetary policy was reasonably expansionary but ultimately ineffective.

I argue that this is almost completely wrong. I believe that it wasn't the financial crisis that caused the Great Recession; it was contractionary monetary policy. Though this sounds like a counterintuitive idea, it is in fact well supported by the

evidence we have.

I will look at the role of fiscal policy and how it interacts with monetary policy, which I think has been widely misunderstood, especially in Britain. Finally, I will dispute the idea that there are ‘long and variable lags’ in macroeconomic policymaking – that we should just try policies and wait and see if they work, which I think is a flawed view.

And I will outline a policy of Nominal Gross Domestic Product (NGDP) targeting that I believe banks should implement, instead of trying to target inflation and employment using interest rates. I believe that the ‘market monetarist’ view that I will present gives us a more plausible and more useful way of understanding the past six years.

“Tell me,” the great twentieth-century philosopher Ludwig Wittgenstein once asked a friend, “why do people always say it was natural for man to assume that the sun went around the Earth rather than that the Earth was rotating?” His friend replied, “Well, obviously because it just looks as though the Sun is going around the Earth.” Wittgenstein responded, “Well, what would it have looked like if it had looked as though the Earth was rotating?”

This is what I’m going to ask you to do in this paper. I want you to ask yourself this: what would the last 6 years have looked like if tight money, not the financial crisis, caused the Great Recession?

1. The consensus view of the Great Recession

“The worst financial crisis in the history of the United States and many other countries started in 1929. The Great Depression followed. The second-worst struck in the fall of 2008 and the Great Recession followed. Commentators have dwelt endlessly on the causes of these and other deep financial collapses. Less conspicuous has been the macroeconomists’ concern about why output and employment collapse after a financial crisis and remain at low levels for several or many years after the crisis.” (Robert Hall, JEP, 2010.)

This is from Robert Hall, a very respected American economist at Stanford University’s Hoover Institution, and can be said to represent the consensus view of what happened in 2008 and in the years since.

This is the very first paragraph of the paper he wrote on this crisis. Most people would read over it without even thinking about it, but I think it is actually completely wrong.

“The worst financial crisis in the history of the US and many other countries started in 1929.” Actually that is not true. There was no financial crisis in the United States in 1929 – there was a stock market crash. The financial crisis – when thousands of bank failures took place across the United States – was in

1931-33. A stock market crash is different to a financial crisis, and the two should not be conflated.

This is important because the implication is that a financial crisis caused the Great Depression, which would seem to suggest the same direction of causation for the 2008 crisis and Recession. But if, in fact, the Great Depression began in 1929, which it did, and the financial crisis was in 1931-33, which it was, it makes more sense to think about the Great Depression as leading to bank failures, an international foreign exchange crisis, and so on.

Hall continues, ‘the second worst [crisis] struck in the fall of 2008’. That is true, referring to Lehman Brothers, which failed in September 2008, and during the next few months we experienced a severe banking crisis. Then the Great Recession followed.

Figure 1: US Nominal GDP 2007-2010 (monthly estimates from Macroeconomics Advisors)

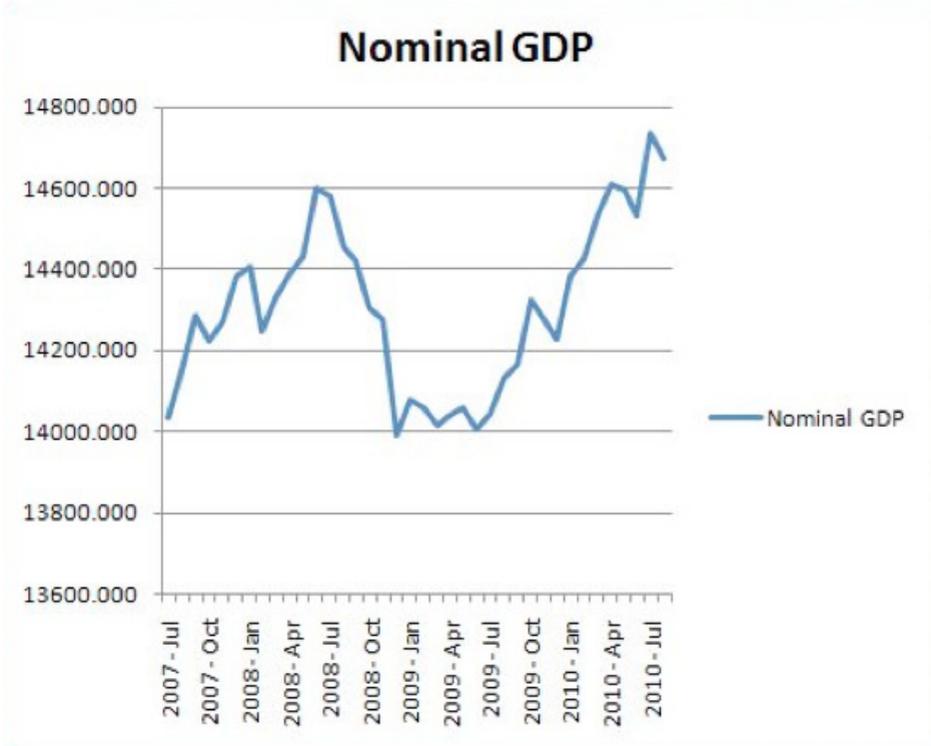
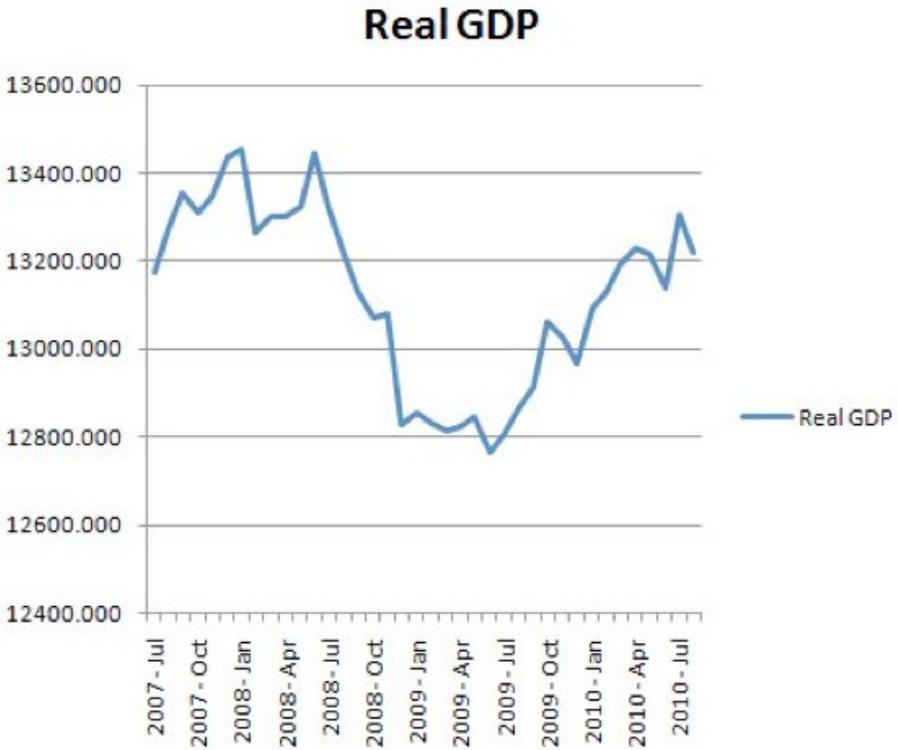


Figure 2: US Real GDP: 2007-2010, (monthly estimates from Macroeconomics Advisors)



But it's worth noting that the first stages of the Great Recession actually began in 2007. The US and global economies fell off the cliff right around June 2008, and the trough was in December 2008 (see figure 1). These are monthly estimates of GDP, which is only actually officially computed quarterly. But you really need to look at monthly estimates to get a sense of how dramatic the decline was and in what a short period much of the damage was done. Figure 1 shows nominal GDP, which can be decomposed into inflation + real GDP.

But nominal GDP by itself it tells us nothing about the business cycle. The fastest growing nominal GDP over the last 15 years in the world was Zimbabwe, and they had a depression from 2005 to 2010. Nominal GDP tells nothing about the business cycle by itself, because in the long run real and nominal variable are unrelated.

However, it so happens that for many industrial countries, like the US, Britain and the Eurozone, in the short term nominal and real are highly correlated – if we compare Figures 1 and 2 we can clearly see that the two follow a similar pattern. (The nominal grows a little bit more because there is inflation included in nominal variables.) But in the short run a dramatic change in nominal GDP will almost always show up in real GDP, which I'll explain later. And you can see real GDP also declining sharply in figure 2.

It's worth noting that central banks typically can control nominal GDP by controlling inflation. Even if real GDP falls, the central bank can keep NGDP at a given level by compensating with extra inflation.

Suppose we went back to 2006 and showed Figure 1 to a group of prestigious mainstream economists. We might ask what they thought would happen to the economy if nominal GDP did this because monetary policy was too contractionary, and told them to assume that there was no financial distress at all. No banking crisis, no financial crisis. If this happened to nominal GDP – a 4% decline over a year instead of the trend 5% rise, creating a 9% gap between actual and trend GDP – what would that do to real GDP?

Most macro economists would say something like what we see in Figure 2, even if you told them to assume no banking crisis. The NGDP collapse is a sufficient condition for the real GDP collapse we see here.

2. Easy money?

Mishkin's key lessons for monetary policy

- 1. It is dangerous always to associate the easing or the tightening of monetary policy with a fall or a rise in short-term nominal interest rates.*
- 2. Other asset prices besides those on short-term debt instruments contain important information about the stance of monetary policy because they are important elements in various monetary policy transmission mechanisms.*
- 3. Monetary policy can be highly effective in reviving a weak economy even if short-term rates are already near zero.*

For years I've been teaching monetary economics out of the most popular textbook in the US written by Frederic Mishkin, who served at the Federal Reserve Board. Above is a summary of some of the points that he makes towards the end of the textbook, which he really wants his students to be aware of.

Let's look at the first and third. 'It is dangerous always to associate the easing or the tightening of monetary policy with a short-term interest rates'. And yet I felt in late 2008 almost everybody I had talked to was assuming Fed policy was very easy. When I asked why they would say, 'Well, because interest rate are very low'.

And the third point: 'Monetary policy can be highly effective in reviving a weak

economy even if short term rates are near zero'. Again, I would talk to people and they would say the Fed is out of ammunition, saying that they've cut interest rates close to zero and there is nothing more the Fed can do.

So I started to wonder how it was that we'd been teaching these ideas to our students for decades but didn't seem to believe them when a crisis actually hit. Which was wrong: the textbooks, or our current thinking?

In the second point, Mishkin points to the role of other asset prices and what they can tell us about the stance of monetary policy. In this theme, we're going to a look at some other asset prices. We'll see that they were all signaling that money was very tight. Everything except short-term nominal interest rates was signaling extremely tight money.

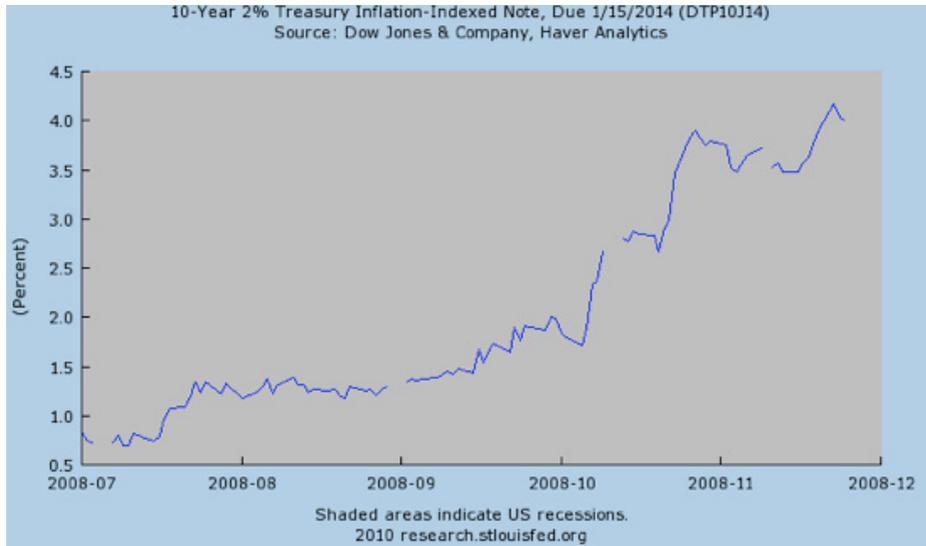
Before I do that, one more quotation – Milton Friedman on low interest rates:

“Low interest rates are generally a sign that money has been tight, as in Japan; high interest rates, that money has been easy. . . . After the U.S. experience during the Great Depression, and after inflation and rising interest rates in the 1970s and disinflation and falling interest rates in the 1980s, I thought the fallacy of identifying tight money with high interest rates and easy money with low interest rates was dead. Apparently, old fallacies never die.” (WSJ, Dec. 1997)

This is from Milton Friedman, who died in 2006. He was talking about the situation in Japan in the late 1990s. It's interesting that he talks about the misconception that low interest rates mean easy money. He said we thought we had learned from the Great Depression, when rates were also low, and the 70s, when the rates were extremely high due to inflation, that interest rates are not a good indicator. Towards the end of his life he said he was sort of dismayed to find that this fallacy is still around. And I believe he would have been dismayed by recent events and the way they were interpreted.

Let's quickly go through some graphs of asset prices.

Figure 3: Real interest rates on Treasury bonds with a roughly 5 year maturity; July to November 2008



One of the counter arguments I get from other economists is that nominal interest rates can be misleading, but real interest rates are good indicators of monetary policy. There are two problems with this argument. First, no, real interest rates are not a reliable indicator. They are better than nominal, but they are still somewhat unreliable.

Expected income growth, as well as the level of income, also has a powerful effect on interest rates. Indeed if you go back to the pre-WWI period in America we had almost no expected inflation, and no Federal Reserve to raise or lower interest rates. But rates rose and fell with the business cycle, just as they do today. Income has an incredibly powerful impact on rates, indeed in recent years much more so than inflation. That's why Ben Bernanke insists that neither nominal nor real interest rates are reliable indicators of monetary policy, and you must look at NGDP growth and inflation. But then Bernanke is not "most economists" he's one of the leading experts in monetary economics.

But the bigger problem is that the economists that say this to me don't seem to have bothered to actually check the data, because during the period of July to December 2008 the real yield of a 10-year treasury bond went from less than 1% to well over 4%.

That's an extraordinarily large increase in long-term real interest rates, in a period of only 5 months. This is right in the teeth of the big decline in real GDP and the banking crisis. These are yields on inflation-indexed bonds – this is how we know they are real interest rates.

Figure 4: Commodity prices in 2008



Commodity prices fell in half during this six-month period, you can see the big collapse there. That's Great Depression-style deflation.

The value of the dollar is particularly interesting. Many people believe that banking crises are always followed by severe recessions, as studies by Rogoff and Reinhart and others have suggested. But one of the differences in what happened in 2008 is that, unlike other financial crises in places like Mexico, Thailand, Russia, Brazil and so on, the dollar actually strengthened sharply the teeth of the crisis. In the vast majority of banking crises, the currency will decline sharply in the foreign exchange market.

Figure 5: The value of the dollar in late 2008

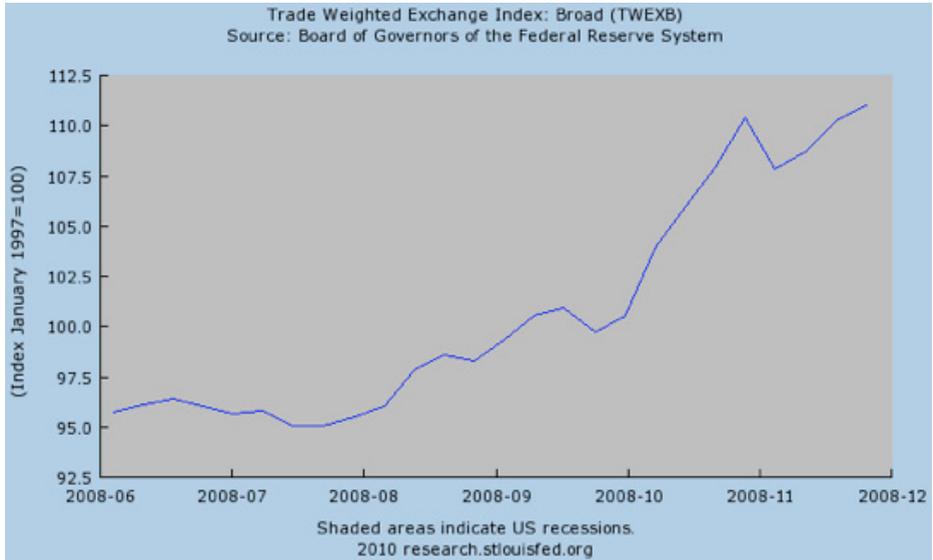


Figure 5 shows the dollar against a basket of other currencies appreciating by about 15% in late 2008. That's a pretty unusual occurrence when the economy is falling sharply and we have a severe banking crisis. The other major cases where currencies have strengthened (in trade-weighted index terms) during a crisis are Argentina around 2000 and the United States in the early 1930s. Those other cases are now well understood as excessively tight money, which caused deflation and depression.

This is a very anomalous pattern for exchange rates and it's indicative of tight money. In all other asset markets, prices crashed.

Commercial real estate prices are interesting, because they only began to decline some time after the housing subprime bubble burst in 2006. We had had a declining housing market for two years, but the rest of the economy kept doing pretty well, including commercial real estate. It was only when nominal GDP started to fall in late 2008 that commercial real estate turned down sharply and loan defaults in that area increased.

Parts of the residential real estate market that don't seem to have had a bubble, like Texas and other 'heartland' states, only began to see a decline once the economy turned sharply lower in late 2008. It's therefore hard to blame this on a

‘bubble popping’ – again, it seems much more likely to have been due to the fall in nominal GDP.

Finally, Treasury Inflation Protected Securities (TIPS) spreads show that inflation expectations fell sharply – hardly a sign that money is easy.

All the asset price shifts we see are consistent with tight money – except the short-term nominal interest rates that everyone focuses on.

Bernanke on monetary indicators

After blogging for a couple of years, I came across some papers by Ben Bernanke that really amazed me. Bernanke was head of the Federal Reserve during the whole recessionary period, and I was seen as a critic of his, but when I read his papers on Japan and other issues, it was right up the market monetarist alley.

Here’s one quote that really caught my attention:

*The imperfect reliability of money growth as an indicator of monetary policy is unfortunate, because we don't really have anything satisfactory to replace it. As emphasized by Friedman . . . nominal interest rates are not good indicators of the stance of policy . . . The real short-term interest rate . . . is also imperfect . . . Ultimately, it appears, one can check to see if an economy has a stable monetary background only by looking at macroeconomic indicators such as **nominal GDP growth** and inflation.*

Here, Bernanke is basically saying that money supply, nominal interest rates and even real interest rates are not reliable indicators of the stance of monetary policy. Ultimately he says we can look at two indicators: nominal GDP growth and inflation.

I have bolded nominal GDP growth because I think that one’s preferable. It’s a purely demand-side indicator, which makes it the best indicator of the stance of monetary policy. Inflation can be affected by the supply- or demand-side factors and only demand-side inflation is really monetary.

If we take both of them, we find that money in the US in the 5 years after 2008 was the tightest since the early 1930’s when Herbert Hoover was president. These aren’t my criteria: they are Ben Bernanke’s, but from before he was Fed chair-

man.

There's no way that as chairman of the Fed he could say this. Rather he's been saying for 5 years that monetary policy was extraordinarily accommodative during this period. But that's not the criteria he laid out when he was free to speak and think his mind.

This is a very interesting quotation to think about because it suggests that my way of looking at easy and tight money, NGDP growth, is not that eccentric. But it is certainly out of the mainstream today.

Many people will argue that interest rates in recent years have been artificially depressed by easy money and they feel that we don't really have a true market anymore. Central banks are manipulating the market with all these QE programs, the argument goes, so we can't learn much about the real economy from what the market does.

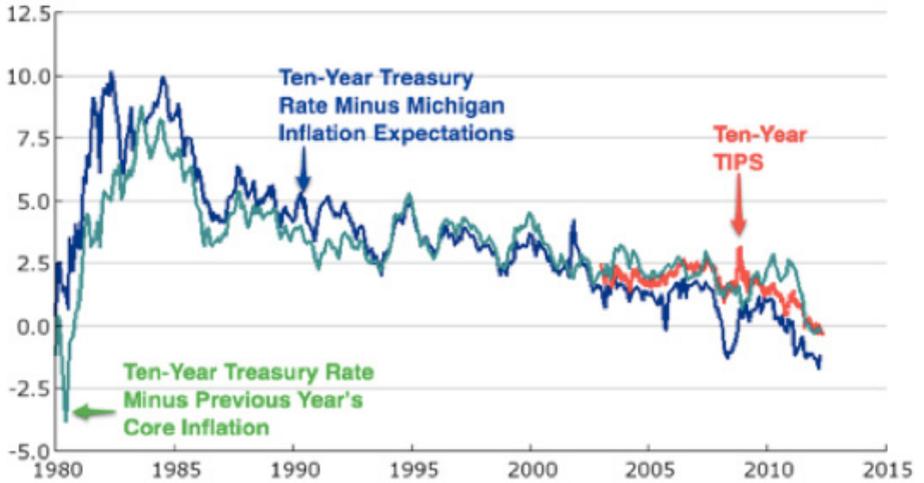
But something to think about here is that we've had a 30-year downtrend in real interest rates in the US and many other developed countries. Figure 6 shows real interest rates in 10-year bonds in the US, at around 7-10% in the early 1980s in the peak, trending downwards to more normal levels but then continuing to trend downward close to zero.

Inflation has been trending downwards over this period.

What's more, 30-year bond yields today are quite low. In other words, the market thinks these rates are going to be pretty low for quite a while. So there is something clearly going on with long-term interest rates – there's a new normal that's lower than what we're used to, and it's not to do with the business cycle or monetary policy.

Figure 6: Long term trends in real interest rates (source: J. Bradford DeLong)

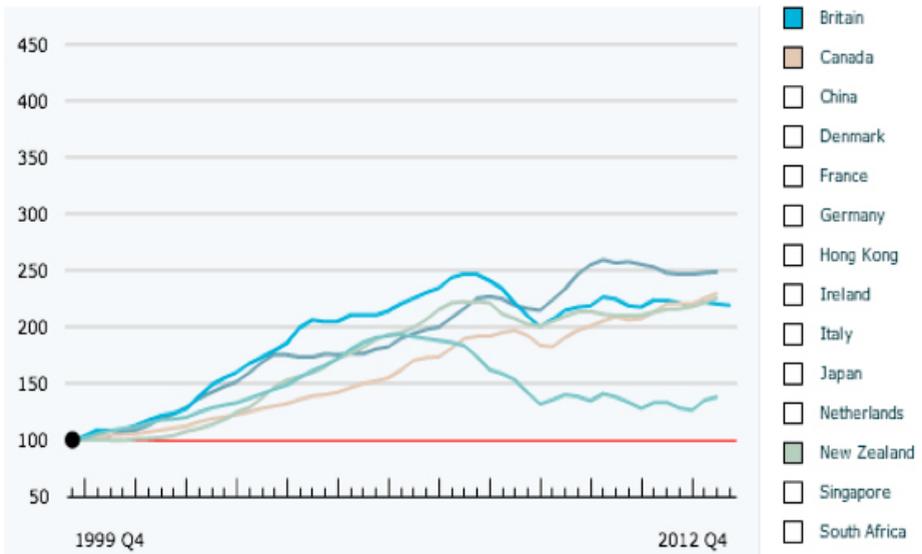
MEASURES OF REAL INTEREST RATES SINCE 1980



3. The many illusions

Another misconception in the United States is the existence of a housing bubble. House prices rose significantly in the years leading up to 2006 and then they fell by more than 35%. Consequentially, everyone looked back and said it was a bubble, that prices were obviously too high in 2006 and so obviously they had to crash.

Figure 7: House prices



US Housing starts, completions and unemployment rate, 2006-09

Jan. 2006: starts = 2,303,000, completions = 2,058,000, average = 2,180,000, U-rate = 4.7%

April 2008: starts = 1,008,000, completions = 1,014,000, average = 1,011,000, U-rate = 4.9%

October 2009: starts = 527,000, completions = 745,000, average = 636,000. U-rate = 10.0%

One argument made is that high unemployment was inevitable because with the crash in housing construction, many workers lost jobs both in that industry and related industries, and it would take them time to reskill. Actually, if you look at the timing of the crisis, it doesn't fit.

Housing construction in the US peaked in January 2006 at a rate of 2m units per year. By April of 2008, 27 months later, housing construction had fallen by more than half and most of the decline was over by that point. But unemployment during this period rose from 4.7% up to 4.9%, a very small up-tick.

The reason for this is that GDP was still growing in both nominal and real terms, so the workers that lost jobs in housing construction were able to get jobs in other sectors quite quickly. It was only in the second half of 2008, when nominal GDP collapsed, that we lost jobs in commercial real estate, manufacturing, services and all across the economy. Unemployed soared to 10% by late 2009.

Monetary Offset: Why fiscal policy doesn't work

Although it may be a surprise to someone who has read much economic commentary over the past 5 years, as recently as 2006 the standard macroeconomics that was taught in mainstream schools at the highest levels was that, if the central bank was targeting inflation, the fiscal multiplier was roughly zero, meaning that fiscal stimulus has no effect on the economy.

To understand this, consider this metaphor. If I'm driving my car and my daughter reaches over and tries to turn the steering wheel left, I'll grip tightly on the wheel to stop her from being able to turn it. Since I'm stronger than my young daughter, the wheel doesn't turn, it keeps going straight down the road. It is true that her

action by itself would have pushed the car off the road, but with me there pushing back with equal force, no one outside the car would observe anything actually happen to the car's direction.

Think of my control of the steering wheel as being like monetary policy, and my daughter reaching over and trying to turn it as being like fiscal stimulus. Monetary policy has more power because it has more ability to target inflation and NGDP, and you can't change aggregate demand without affecting inflation or NGDP. This was the standard view as recently as 2006.

So what changed? Economists like Paul Krugman argued that once we'd hit the 'zero lower bound', where central bank rates hit zero, central banks ran out of ammunition. Yes, normally monetary policy does all the work, they argue, but with interest rates at rock bottom there's nothing else the bank can do to stimulate aggregate demand.

But market monetarists argued that even at the zero lower bound, there's a lot a central bank can do and to some extent has been doing, like quantitative easing. And since we've talked about monetary policy offsetting fiscal policy, in early 2013 Paul Krugman said that there was a perfect test of Market Monetarism taking place that year, because the US did a lot of austerity. It raised income tax rates at the beginning of the year, raised payroll taxes, and cut government spending quite a lot. According to the Keynesian model that Krugman subscribes to, all that fiscal austerity should mean that growth would slow down quite a lot.

This was the test: if growth slowed, Krugman would be right. If it didn't, because the central bank was offsetting it by easing monetary policy, the Market Monetarists would be. I think we passed the test with flying colours: GDP growth actually accelerated in 2013 in the US. At the end of the year Krugman was asked about this and he denied ever setting a test, because all sorts of things change in an economy so no individual factor could be pointed to. A pity.

Simon Wren-Lewis on the Eurozone:

"While the reasons for the Great Recession may still be controversial, the major factor behind the second Eurozone recession is not: contractionary fiscal policy, in the core as well as the periphery. So this is something we really do know. Yet too many macroeconomists seem reluctant to acknowledge this. There are the anti-

Keynesians who want to deny the monetary policy consensus; there are others, who want to deny the importance of the zero lower bound; and still more, who for some other reason want to deny the importance of fiscal policy.”

In fact, even the standard Keynesian model says tight money caused the double-dip recession.

Simon Wren-Lewis says that there can't be any controversy over the fact that the second Eurozone recession was due to contractionary fiscal policy. This is quite a startling claim: back in 2010, the US and euro zone had the same unemployment rate around 9-10%. And we had something like a controlled experiment, since the US and the Eurozone did roughly the same amount of austerity. (By some measures the US did a bit more.)

The big difference between the two areas was monetary policy. The US did some monetary stimulus through QE and forward guidance, while the ECB did nothing. Now the unemployment rate in the Eurozone has gone up from 9% to 11.6%, while it's gone down in the US to 6.3%. This huge divergence in employment outcomes over the last 3 years with monetary policy being the difference, not fiscal policy, seems very striking. But yet again very respected Keynesians say it's that it's obvious that fiscal policy explains what went wrong.

Because fiscal policy is easy to explain to people and intuitively seems to be what would stimulate a struggling economy, governments spend money. Monetary offset and monetary policy are tough sells, but the evidence seems to support the consensus that existed before 2006 – fiscal policy will be offset by the central bank, so the fiscal multiplier is approximately zero.

Demand is demand

The economic concept of demand gets horribly confused in the media and often in politics. Many discussions of monetary and fiscal policy seem to suggest that monetary policy is what affects inflation, and fiscal policy is what affects real growth or employment, as if they're on different tracks.

So inflation, for a brief period, was well above target in Britain even though everyone knew the economy needed more stimulus. Why? Because it was inflation due to supply-side factors, like energy price rises. And even though most people real-

ized this, the Bank of England came under pressure to tighten policy. Meanwhile, the government was being pushed to do more fiscal stimulus because unemployment was high. But this is totally wrong. Both monetary and fiscal policy work through the same track: both increase or decrease aggregate demand, which then affects both inflation and unemployment.

The whole discussion was incoherent, because it wasn't looking at the interaction of these policies in the right way. Anyone in Britain who felt in 2010-11 that it needed more stimulus (and it probably did) and was arguing for fiscal stimulus should have also been arguing that 5% inflation was too low and Britain and Bank of England should aim even higher. That's the implication of their argument, but nobody seemed to realize this.

Markets are efficient: there is no “wait and see”

Finally, there is no ‘wait and see’ in macroeconomic policymaking. Lars Christensen coined and popularized the term market monetarism, and one of the reasons it's called that is that we market monetarists believe that markets are relatively efficient at aggregating information.

We believe that within 5 minutes after a new macroeconomic policy initiative is announced, we will basically know all we will ever know about the effect of that policy. For example, asset markets adjust very quickly to new policy announcements, and then settle. We see this in markets like the TIPS (Treasury Inflation Protected Securities) spread too, which is essentially an inflation forecast by the market.

So when a new policy initiative aimed at boosting aggregate demand is announced, it makes no sense to “wait and see” if it will work. The market reaction immediately tells us the expected impact of the policy, and anything different that occurs will reflect unexpected shocks that violate the “ceteris paribus” assumption. If the Fed was expected to cut rates by either a 0.25% or 0.5%, and the fed funds futures market assigns probabilities to each outcome, then the actual response of TIPS spreads and stock prices to the policy announcement tells us almost all we will ever learn about the policy.

There are always unexpected shocks that can hit the economy, but the best thing we can do is to set policy according to what we know to be the case at the time.

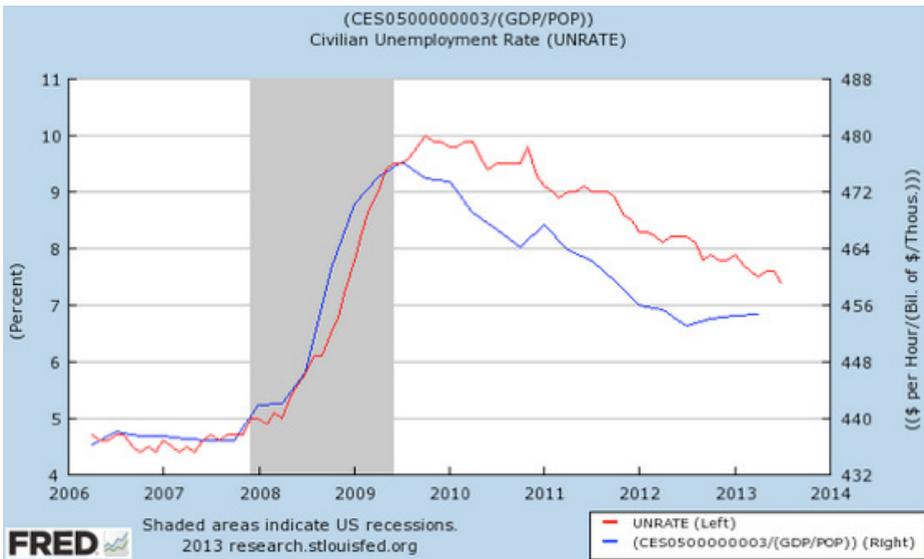
We just need to set monetary policy so the market expects growth in nominal spending to be consistent with a healthy economy.

You can't ask anymore of macroeconomic policymakers than that. If you still have high unemployment you need structural, supply-side remedies to improve the economy.

4. Why NGDP matters – the musical chairs model

The central bank cannot decide on how NGDP is split between real GDP and inflation, but it can control the path of NGDP, effectively making up for lower real GDP with extra inflation.

Figure 8: NGDP per person and unemployment.



To explain the relationship between NGDP and unemployment I use what I call the 'musical chairs model'. In Figure 8, the red line is the unemployment rate – we see a big increase in late 2008 and early 2009 followed by a slow decline during the recovery. The blue line is the nominal wage rate divided by NGDP. In mainstream economics we have a concept of the 'real wage', which is the nominal wage divided by the price level. In market monetarist thinking, NGDP plays roughly the role that the price level plays in mainstream macroeconomics.

Many central banks target inflation at about 2%. Instead, market monetarists like me want them to target NGDP growth at 4 or 5% per year. Dividing wages by prices to find the 'real wage', as mainstream economists do, can be very misleading because of supply shocks and so on. Doing it by NGDP produces a pretty good fit with the actual employment data.

Think of NGDP as being the total amount of money available to pay wages and salaries, which are a big chunk of nominal income. So if NGDP is the denominator and is falling sharply, then the ratio of nominal wages will go up – that's what's that blue line is showing. There simply wasn't enough nominal GDP early 2009 to employ all those workers that were employed in 2008.

Wages and wage growth is quite sticky: wages tend to grow by 3% or 4 % a year in the US normally. During the crisis, wages grew by 1% or 2% – that's not much of a slowdown. NGDP growth, on the other hand, plunged by 9% from 5% to minus 4%. That creates mass unemployment and it also reasonably well explains the recovery – as NGDP growth recovered so did employment.

I call this the musical chairs models because it's like in a game of musical chairs: if you stop the music and pull a couple of chairs away (lower NGDP), a few of the contestants will be sitting on the floor (unemployment).

Why stabilize nominal GDP?

1. Provides labor market stability.
2. Provides credit market stability.
3. Many problems attributed to inflation are more closely correlated with unstable NGDP.
4. Statism thrives after NGDP falls sharply (US 1933, Argentina 2002, US 2009.)
5. Makes it easier to say no to bailouts.

Stable NGDP growth is associated with more stable labor market outcomes. One of the only countries to avoid a recession after 2008 was Australia. Australian NGDP growth was partially unstable, but quickly returned to trend, so from 2006-2012, Australian NGDP grew at about 6.5% per year. There was a slowdown during the crisis but they got back to trend quickly. Most other developed countries had a dramatic slowdown in NGDP and didn't come back to the trend level they had been growing at. Given the 'musical chairs' model, above, and the fact that most wages are both sticky and set in nominal terms, stabilizing NGDP would prevent unnecessary unemployment that takes place when drops in NGDP mean that there is not enough to meet everyone's wage demands.

In credit markets, again, inflation is what people talk about. A common refrain is that 'inflation helps buyers, deflation helps lenders'. But this is the wrong variable to think about. It is NGDP, or nominal income, that people, business and governments use to repay nominal debts. Almost all of our bank loans and contracts are in nominal terms. If they were indexed to inflation, we'd be looking at a different variable like real GDP, but since they're not, NGDP is what matters. So debt crises take place when NGDP plunges, like in the 1930s, or Argentina in 2000, or in much of the world in 2008/09. And because people are thinking in terms of inflation instead of NGDP, these crises will be misinterpreted.

And here is how they will typically be misinterpreted: in almost every case, we can identify people who make foolish decisions in the run-up to debt crises. In America, that would be subprime mortgage borrowers and the banks that lent to them. In Europe that might be institutions that bought Greek government bonds. These are loans that might go bad even in a stable macroeconomic environment. But when NGDP growth falls sharply and leads to widespread loan defaults and unemployment, the existing crisis will be much worse than it would have been if those foolish decisions had merely had to suffer the consequences. The average person will just assume it is the same thing getting worse, and miss that it was the NGDP collapse that really caused the worst damage.

Sometimes when someone gets a cold, it can lead to a bacterial infection like pneumonia. It might seem like the first disease has just gotten worse, but the second infection is the real problem and needs completely different treatment to the first.

It might look like we in the United States just had one big financial crisis that got

worse and worse. In fact, once NGDP started to fall, we experienced a qualitative change in the nature of the problem. In Europe, it looked like there was one big sovereign debt crisis that just kept spreading from one country to another. But in fact there were many countries, like Spain, that would have never had a sovereign debt crisis if there hadn't been a severe recession to begin with, caused by a big drop in nominal GDP. There were also countries like Greece that would have been troubled in the best of cases, but we should not confuse the initial cold with the secondary infection, which does the real damage.

Nominal GDP serves a sort of invisible variable that is off the radar screen for most people. They tend to look at the symptoms of a crisis, like bank failures, and think those symptoms are the cause of the crisis itself. They are not looking at the underlying macroeconomic causes of these symptoms – the monetary causes.

Targeting NGDP should be viewed very sympathetically by defenders of the free market, because it helps to prevent the deep recessions during which free market policies typically fall out of favour. When we talk about creative destruction during a recession, people ask where the new jobs for workers made unemployed are going to come from. If total spending has fallen and wages are sticky, the 'musical chairs' model tells us that there is going to be a lot of involuntary unemployment until wages fall, which takes some time. That makes 'creative destruction' a hard sell, and makes it very tempting for governments to bail out banks and other large businesses – stopping the creative destruction completely.

However, if you're targeting NGDP, you avoid this problem. More being spent in another offsets less money spent in one sector, and the money flows according to where the market wants it to go, not where the government directs it. If you get the macroeconomic environment right, it's much easier to make a classical argument for creative destruction allowing real resources to be directed to where they are really needed.

When you have a big collapse in NGDP, statist policies become much more popular. This happened in America with the New Deal program in the 1930s. Argentina moved from neo-liberal to more statist policies, because the 2000 recession was believed to be due to the failures of capitalism, just as capitalism was blamed for the Great Depression. But in fact the real failure was monetary policy. So having a stable path for NGDP is very conducive to the argument for free market economics.

Finally, under a system of NGDP targeting, we can start to pull back from bailing out banks, and the moral hazard problem that is associated with that. It's hard to avoid bailing out the banking system if you're worried about a depression that not doing so would cause, but if you have confidence and a stable path of NGDP its much less likely for one bank crisis to spill all over one failure to spill all over other banks.

How NGDP targeting would work

- NGDP futures targeting takes discretion out of policymaking – the market's forecast is what matters, not the views of a panel of wise men.
- Easier for the public to understand. Fed ran into severe criticism when it said it wanted to raise the cost of living for Americans.
- With stable aggregate spending/income, we can afford to let big banks fail, reducing moral hazard.

One strong criticism of central banks is that big government bureaucracies are just not very good at the job they've been given. Targeting inflation or a mixture of inflation and employment are very hard things to do: central bankers would require enormous amounts of information to do these things well. But with NGDP targeting, the government creates a futures market and that market becomes the guide to monetary policy.

What this means is that this futures market will estimate the setting of monetary supply and /or interest rates that the market believes will lead to on target growth and nominal income.

This is part of a broader concept called 'targeting the forecast'. This means that you want the central bank's forecast and goal to be identical. So if the central bank has a 2% inflation goal you want that central bank to be forecasting 2% inflation. If they're not they should change their policy. If its 5% NGDP growth that's the goal, it should either tighten or ease its policy until the goal is what is being forecast.

Some central banks do this internally, setting policy to so their goals and their forecasts are aligned. But market forecasts, or the 'wisdom of crowds', tend to be more accurate. The best approach may be to use a futures market to predict NGDP and adjust the money supply until the market thinks nominal GDP growth

will be on target.

Some people say inflation targeting is easier to understand than nominal GDP targeting, which means it is easier for people to adjust their behaviour in accordance with. Actually, I don't think that the public has any clue about what inflation targeting is all about. Here's one example: the Fed has been targeting inflation at 2%, but around 2010 inflation fell below 1%. As a response, Ben Bernanke announced that the Fed would try to raise inflation.

As soon as he did this, though, he came under intense fire from the media, claiming that the central bank wanted to raise the cost of living at a time when things are already tough and many people were unemployed, and why would anyone want to do something so crazy? The average person believes that inflation is always and everywhere a bad thing, so they think the aim is to keep inflation below 2% – not to target it at 2%, which is of course the true goal.

The firestorm of criticism that the Fed ran into actually caused them to back off on easier money policies, prolonging the recession. But the Fed doesn't like 2% inflation for its own sake. What it hoped was that bringing inflation up to 2% would cause more total nominal spending in the economy, and so more jobs.

The Fed doesn't want high inflation per se in recessions; it just wants the extended association of economic growth. But if the public doesn't really understand why sometimes inflation can be a good thing, then why not use a communication technique that actually tells the public what you're trying to do? What if instead Bernanke had said US was more prosperous when the total income of all Americans grows at 4-5% a year, and in recent years we've fallen short, so he was going to try and boost the growth in Americans' incomes? It would be more accurate, more popular and it would be more truthful in my mind for the Fed to be able to explain that it was targeting nominal incomes.

Conclusion: Wittgenstein in 2014

Wittgenstein: Tell me, why do people always say it's natural to assume the Great Recession was caused by the financial crisis of 2008?

Friend: Well, obviously because it looks as though the Great Recession was caused by the financial crisis of 2008.

Wittgenstein: Well, what would it have looked like if it had been caused by Fed/ECB/BoE/BOJ policy errors, which allowed nominal GDP to fall at the sharpest rate since 1938, especially during a time when banks were already stressed by the subprime fiasco, and when the resources for repaying nominal debts come from nominal income?

Here I've imagined what Wittgenstein might have asked us about the Great Recession, based on what he asked about the sun going around the earth. I hope this chimes with the different way I've been trying to get you to think about the crisis.

So why do people always assume the Great Recession was caused by a financial crisis? Because it looks that way? Well, what would have it looked like if it was caused by central bank policy failures that allowed NGDP to fall at the sharpest rate since the Great Depression during a time where banks were already stressed by the subprime fiasco in the US, and when resources for repaying nominal debts

come from nominal income? What if the subprime mortgage crisis was the cold, and the NGDP collapse was the pneumonia?

What would you expect to happen? If my view is right, and central banks are to blame, then the policy implications are obvious: stop targeting inflation and switch to the clear, simple rule of NGDP targeting.