Nudging the Fed Toward a Rules-Based Policy Regime

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There is a great deal of academic research suggesting that monetary policy should use a rules-based approach (e.g., Kydland and Prescott 1977, McCallum 1985, Plosser 2014). However, Fed officials have generally been opposed to any sort of rigid policy rule.

There are two types of policy rules, both of which the Fed finds problematic. One involves a commitment to target a macroeconomic variable such as inflation, or nominal GDP, at a specified rate of growth. Today many central banks aim for approximately 2 percent inflation, although such rules are generally regarded as being flexible—with some weight also being given to output and/or employment stability. Even the European Central Bank, which has a simple inflation mandate, must also ensure that the eurozone monetary regime remains stable and viable.

The Fed has a dual mandate for stable prices and high employment, which it interprets as 2 percent inflation and unemployment close to the natural rate. However, there is no clear indication of the weights assigned to each variable, and hence current policy cannot be viewed as a fully rules-based monetary regime. If both inflation and unemployment are above target, the Fed has discretion as to which problem deserves more attention.

In other cases, the term "policy rule" refers to an instrument rule, such as the famous Taylor rule, which would require that the Fed target the nominal fed funds rate (see Taylor 1993). Key Fed officials also oppose instrument rules, which they suggest do not provide adequate flexibility. They worry that if the natural rate of interest and/or the natural rate of unemployment change, then the Taylor rule could lead to a suboptimal policy. In principle, the rule can adapt to changes in these parameters, but it may be very difficult to estimate the natural rate of either unemployment or the real interest rate.

Elsewhere, I have argued that the Fed's discretionary approach did very poorly during the Great Recession and that the Fed should adopt level targeting of nominal GDP (Sumner 2012). I have also suggested that policymakers should target the market forecast of future nominal GDP, or at least the Fed's internal forecast, if a market forecast is not available (Sumner 2015).[1] In this article, I will simply assume that a nominal GDP-level target is the best option; however, all of the arguments presented here could equally be applied to a different policy target, such as one for 2 percent inflation.

Given the Fed's opposition to a rigid policy rule, it's worth asking whether the Fed can be "nudged" in the direction of a policy rule, through some more modest and less controversial policy reforms. Here I'll suggest three such reforms: first, asking the Fed to more clearly define the stance of monetary policy; second, asking the Fed to more clearly evaluate past policy decisions; and third, asking the Fed to define the outer limits of acceptable deviation in aggregate demand from the target path. I will also argue that if the Fed starts down this road, it will likely lead to the eventual adoption of nominal GDP-level targeting.

What Do We Mean by the "Stance" of Monetary Policy, and Why Does It Matter?

Economists frequently refer to monetary policy using terms such as "expansionary" or "contractionary," "easy" or "tight," and "accommodative" or "restrictive." Those terms are said to refer to the

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[1]Svensson (2003) discusses targeting the Fed's internal forecast—that is, setting the policy instrument at a level expected to lead to on-target outcomes, according to the central bank's internal model.

"stance" of monetary policy. Given their frequent use, one might assume that they have a clear meaning, at least to professional economists. Unfortunately, that is not the case. References to the stance of monetary policy are often vague and misleading, and frequently hinder clear thinking about the role of monetary policy in the business cycle. Given that the Fed discusses its policy stance while communicating with the public, it is essential that policymakers clearly define what these terms mean. We need some metric for evaluating the stance of monetary policy.

I am not the first economist to express frustration with the way pundits characterize real-world monetary policy stances. Milton Friedman made a similar complaint in 1997:

> 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 [Friedman 1997].

Friedman thought monetary policy in Japan was quite contractionary during the 1990s, despite near-zero interest rates and quantitative easing (QE). Of course, in 1963, Friedman and Schwartz famously argued that contractionary monetary policy had caused the Great Depression. And, as with Japan, this occurred despite near-zero interest rates and rapid growth in the monetary base.[2]

This raises an interesting question: If Friedman were alive today, would he have regarded Fed policy during 2008 and 2009 as expansionary or contractionary? Indeed, is it possible that the recession of 2008 was caused by tight money? I won't definitively answer that question here. Rather, I will show that this hypothesis should not be summarily rejected merely because most economists saw monetary policy during 2008 and 2009 as being "obviously" highly expansionary.

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[2]In the United States, the monetary base expanded from $6,978 million in December 1929 to $23,738 million in December 1941.

The Problem of Identifying the Stance of Monetary Policy

Joan Robinson (1938) argued that easy money could not have caused the German hyperinflation, because interest rates were not low. Modern economists might be inclined to smile at this example of "old Keynesian" thinking, perhaps recalling the more than billion-fold increase in the German monetary base between 1920 and 1923, when currency was being printed at a furious pace. On the other hand, modern economists are not supposed to rely on changes in the monetary base as an indicator of the stance of monetary policy. So is that really a good reason to dismiss Robinson's claim (which applied to the first part of the hyperinflation)?

For instance, in the United States, the monetary base had been growing at about 5 percent a year in the period leading up to August 2007. Then, over the next nine months, growth in the base came to a sudden halt. And yet you would be hard pressed to find many economists who regarded this sudden change in the growth rate of the monetary base as a contractionary move by the Fed. The reason is obvious: interest rates were cut repeatedly during this nine-month stretch, from 5.25 percent all the way down to 2 percent. Contemporaneous discussion of monetary policy during 2007–08 almost invariably referred to the Fed's actions as expansionary or "easy money." This characterization implicitly rejected the monetary base as a useful indicator, and (presumably) relied instead upon changes in interest rates.

A more sophisticated argument against Joan Robinson's claim would be that nominal interest rates don't matter, and that real interest rates are the proper measure of the stance of monetary policy. Certainly, real interest rates would be a superior policy indicator during a period of hyperinflation. But once again it seems highly unlikely that this is the variable that economists actually focus on—or *should* focus on. Between early July and early December 2008, the real interest rate on five-year inflation indexed Treasury bonds rose from less than 0.6 percent to more than 4 percent, one of the sharpest increases ever recorded in such a short period of time. If economists regarded real interest rates as the proper indicator of the stance of monetary policy, then one might have expected almost universal outrage about the Fed's "highly contractionary" policy shift during a period of financial turmoil and deepening recession. Yet it is difficult to find any criticism of this sort during the second half of 2008.

On the contrary, most commentators claimed that monetary policy was expansionary.[3]

We have already seen that nominal interest rates might be highly misleading due to the effects of inflation. But, in fact, the same sort of criticism can be lodged against real interest rates, which reflect other macroeconomic variables, such as expected real GDP growth. A real interest rate of 2 percent during a period of rapid economic growth certainly represents a different monetary policy stance from a 2 percent real interest rate during a deep depression. So it is not at all clear that real interest rates are actually a good indicator of policy.

Milton Friedman is not the only economist to criticize the way members of his profession describe the stance of monetary policy. Other highly regarded economists, in many cases those closer to the (new Keynesian) mainstream, have expressed similar concerns. Take Frederic Mishkin, who served on the Federal Reserve Board, and wrote the number one monetary economics textbook in the United States (Mishkin 2007). Toward the end of the book he listed several important points about monetary policy. Here are the first three as they appeared back in 2008:

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 [Mishkin 2007: 606–7].

One of the most striking features of these three key lessons for monetary policy is how incompatible they seem with the consensus view of events circa 2008 and 2009. Policy was almost universally viewed as being expansionary precisely because the Fed cut interest rates sharply to near-zero levels. Yet almost all other asset markets were signaling a highly contractionary monetary policy. For instance, between July and December 2008, commodity prices fell roughly by

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[3]Robert Hetzel (2009, 2012) is one of the few Fed officials to consider the possibility that excessively tight money might have contributed to the Great Recession.

half, stock prices crashed, the dollar appreciated 15 percent in trade-weighted terms, the decline in real estate prices spread from the sub-prime states to areas of the country that had not experienced a bubble, and inflation expectations in the Treasury Inflation-Protected Securities (TIPS) markets fell into negative territory. And as we've already seen, real interest rates rose sharply. Virtually every asset market was signaling extremely tight monetary policy; yet the pundits ignored those asset markets and focused on the only thing that suggested easy money—falling *nominal* interest rates. That's the very same indicator that led Joan Robinson to insist that money couldn't have been easy during the German hyperinflation.

It is also interesting to note that, in 2008 and 2009, most economists seem to have thought monetary policy was not particularly effective when short-term interest rates are near zero. After all, few blamed the Fed for allowing a sharp drop in aggregate demand. This view conflicts with Mishkin's third key point, and it raises the question of whether the profession is in sync with the material taught in the most popular monetary economics textbooks.

Ben Bernanke is, of course, another highly respected mainstream economist, and he was head of the Federal Reserve Board in 2008 and 2009. It is therefore interesting to examine how he thinks about the stance of monetary policy. The following comes from a speech given by Bernanke at a dinner honoring Milton Friedman on his 90th birthday:

> The only aspect of Friedman's 1970 framework that does not fit entirely with the current conventional wisdom is the monetarists' use of money growth as the primary indicator or measure of the stance of monetary policy. . . .
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> 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 (in his eleventh proposition) and by Allan Meltzer, nominal interest rates are not good indicators of the stance of policy, as a high nominal interest rate can indicate either monetary tightness or ease, depending on the state of inflation expectations. Indeed, confusing low nominal interest rates with monetary ease was the source of major problems in the 1930s, and it has perhaps been a problem in Japan in recent years as well. The real short-term interest rate,

another candidate measure of policy stance, is also imperfect, because it mixes monetary and real influences, such as the rate of productivity growth. . . .

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 [Bernanke 2003].

There's a great deal to be said for using nominal GDP growth and inflation as indicators of the stance of monetary policy. However, this leads to the same puzzle that we've discovered with other possible indicators: it doesn't seem to match the way real world economists think about monetary policy. In the five years after mid-2008, nominal GDP growth was slower than during any comparable period since the early 1930s. Indeed, even an average of nominal GDP growth and inflation was the slowest since the early 1930s. And yet you'd be hard pressed to find many economists who thought monetary policy was at its tightest since the Herbert Hoover administration. Rather, most economists (including Ben Bernanke) regarded policy as being quite easy.

We've seen that Friedman, Mishkin, and Bernanke were all somewhat critical of the orthodox view that low interest rates mean easy money. Interestingly, however, these three distinguished economists did not seem to agree on which alternative was better. Friedman tended to favor broad monetary aggregates such as M2. Mishkin cited asset prices, while Bernanke pointed to nominal GDP growth and inflation. None favored using the monetary base. In the quotation above, Bernanke alludes to the fact that, in the early 1980s, most economists became skeptical of the reliability of monetary aggregates, at least in part because the velocity of money was shown to be unstable. In my view, the options mentioned by Mishkin and Bernanke both have appeal. But before giving them further consideration, let's dig a little deeper into *why* interest rates and the monetary base make for such unreliable indicators of the stance of monetary policy.

Why Interest Rates and the Monetary Base Are Particularly Unreliable

Recall Milton Friedman's words, as cited earlier in this article: "[L]ow interest rates are generally a sign that money *has been* tight"

(emphasis added). Friedman is not just claiming that interest rates are unreliable; he is saying they are a perverse indicator—sending precisely the wrong signal. And yet, quite clearly, that cannot always be the case; economists would surely not have come to the conclusion that low interest rates represent easy money without at least some empirical justification.

So what is the short- and long-run impact of monetary policy on nominal interest rates? A one-time increase in the monetary base tends to reduce nominal interest rates in the short run (the liquidity effect), and then bring interest rates back to the original level in the long run (income and price-level effects.) Indeed, an increase in the growth rate of the money supply may well leave nominal interest rates higher in the long run as people expect inflation—something economists refer to as the Fisher effect. This is, presumably, what Friedman had in mind when he suggested that low rates are a sign that money *has been* tight.

Of course, economists are aware of these short- and long-run effects. The mistake comes in mistakenly equating short run with "right now" and long run with "sometime in the future." But that is not what short and long run mean at all. In fact, at any given moment in time, the condition of the economy reflects the long-run effects of policies adopted earlier—that may be obvious when you think about it, but it is easy to overlook when evaluating current events.

As a result, while we can expect money market interest rates—especially short-term ones—to immediately fall when the Fed injects money into the economy, it does not follow that the Fed *must have* injected money simply because interest rates were seen to fall. For example, let's suppose that the Fed were to adopt a highly expansionary monetary policy, which reduced interest rates in the short run but led to higher inflation and economic growth over the medium to long term. In that case, after a short lag, the policy might be expected to raise interest rates. It would look like the Fed had switched from an easy to a tight money policy, but in fact we would simply be observing the delayed effect of the same easy money policy.

Furthermore, when considering even short-run changes in interest rates, it is important to distinguish between a reduction in interest rates caused by an increase in the monetary base, and a reduction in interest rates resulting from a decrease in money demand.

Consider again the period late 2007 to early 2008. During this nine-month stretch, the Fed aggressively cut its fed funds target from

5.25 percent to 2 percent. An economist explaining this policy to a class of economics students would naturally tend to treat these interest rate reductions as active Fed policy, increasing the money supply relative to a stable money demand. This is the traditional way of illustrating the liquidity effect. It just so happens, however, that the monetary base *did not* actually increase during this nine-month period. Instead, money demand decreased—and that is what reduced equilibrium short-term interest rates. The Fed adjusted its fed funds target just enough to keep the monetary base roughly constant. To put this somewhat differently, using the language of the equation of exchange, the Great Recession was not triggered by a fall in velocity; indeed, base velocity increased during the nine-month period in question. Instead, the recession was triggered by a sudden stop in the expansion of the monetary base.

The liquidity effect links short-term interest rates and the monetary base. Because the liquidity effect is often the most visible manifestation of monetary policy, it receives the lion's share of attention in any discussion of monetary policy, especially those focusing on current events. This leads to a sort of dual criteria for easy money: low interest rates *and* a rapidly expanding monetary base. At first glance, this dual criteria might seem to overcome the problem discussed above, in which rates fall not because of an increase in the monetary base, but rather because of a drop in money demand. Unfortunately, even this dual criteria is not reliable. To see why, let's consider the Great Depression.

During the 1930s, the demand for base money soared. This increased demand reflected two primary factors: ultra-low interest rates and financial market instability. When there is a near-zero opportunity cost of holding cash and bank reserves, and when alternative assets are viewed as increasingly risky and illiquid, the demand for base money tends to rise sharply. The Fed did increase the monetary base rapidly during the 1930s, but not fast enough to meet the rising demand for base money. Despite the Fed's efforts, monetary policy was tight and, as a result, prices and nominal GDP fell sharply. This episode suggests that the unreliability of low interest rates as an indicator of monetary policy tends to become entangled with the unreliability of the monetary base as an indicator of monetary policy precisely during those periods when interest rates are extremely low.

There is, however, one important difference between nominal interest rates and the monetary base: nominal interest rates tend to

be an unreliable indicator of the stance of monetary policy during both deflation *and* hyperinflation. During deflation, nominal interest rates tend to fall close to zero, making monetary policy look expansionary at a time when it is actually far too contractionary to prevent deflation. During hyperinflation, meanwhile, nominal interest rates are also highly unreliable due to the Fisher effect.

In contrast, the monetary base offers a relatively reliable policy indicator during periods of hyperinflation, since a sustained period of hyperinflation is almost always accompanied by rapid growth in the monetary base. But the base is not a reliable indicator of the stance of monetary policy during periods of falling prices and/or output. When nominal GDP declines, interest rates fall close to zero. In that environment, the demand for base money increases very sharply, as a share of GDP. In most cases, central banks will at least partially accommodate this demand, carrying out aggressive quantitative easing (i.e., large-scale asset purchases) in an effort to increase the monetary base rapidly to prevent a more severe depression. We saw this in the United States during the 1930s, in Japan during the early 2000s, and in the United States after 2008. In each case, the monetary base rose rapidly after interest rates fell close to zero, but in none of these cases did that mean that money was easy.

To summarize, when inflation rates are extremely high, base money provides a more reliable indicator of the stance of monetary policy than nominal interest rates. In contrast, when there is a drop in nominal GDP, both nominal interest rates and the monetary base become highly unreliable indicators of the stance of monetary policy. Unfortunately, these currently fashionable indicators of monetary policy—nominal interest rates and quantitative easing—tend to become less and less reliable at the extremes, which is, of course, precisely when a reliable indicator is most desperately needed. This perverse state of affairs mirrors the well-known problem with interest-rate targeting: it becomes ineffective at the zero bound, which is exactly when monetary stimulus is most needed.

Economists Need a Better Indicator of the Stance of Monetary Policy

In this article, I have referred many times to events that took place during the Great Recession. One implication of my hypothesis is that monetary policy might have been too contractionary

during this period. However, that is not my primary focus here. Instead, my focus is on the need for clearer thinking about the stance of monetary policy. It may or may not be the case that monetary policy was too contractionary during 2008. But, either way, the economics profession should not have summarily dismissed this possibility merely on the basis of the claim that monetary policy was "obviously" highly expansionary.

So how should economists think about the stance of monetary policy? In a sense, all judgments about easy and tight money are *relative*. Thus one appealing criterion would be to judge the stance of monetary policy relative to the policy goal, say inflation or nominal GDP growth—as Ben Bernanke has suggested. On the other hand, it would also be useful to be able to talk about the stance of monetary policy in real time. Unfortunately, inflation is measured with a long data lag, while the lag for nominal GDP growth is even longer. What's more, when we are thinking about the proper stance of monetary policy, what we really care about is inflation and nominal GDP growth going forward. All this suggests we might want to look at asset price indicators that are available in real time—as Frederic Mishkin has recommended.

I see merit in the proposals of both Mishkin and Bernanke. It is useful to think about the stance of policy relative to policy goals such as inflation and nominal GDP growth. It is also useful to have the sort of real-time policy indicators that the asset markets might be able to provide. But is there any way of bringing these two goals together?

One possibility is that the Federal Reserve could create, and subsidize trading in, a highly liquid nominal GDP futures market. Previous studies have shown that artificial prediction markets can be created at relatively low cost—say, less than one million dollars (see Hanson 2006; Hanson, Oprea, and Porter 2006). Given the huge costs associated with macroeconomic policy errors, it should not be difficult to justify the expense involved in creating a macroeconomic futures market.

Of course, if the Fed wanted to stick with an inflation target, or its dual mandate approach, it could create futures markets in inflation, real GDP, and unemployment. Yet there are powerful arguments in favor of using nominal GDP growth as an indicator of monetary policy. Recall that monetary policy directly affects aggregate demand, which then impacts prices and output. In contrast, changes in the price level can reflect monetary factors (aggregate demand), or

nonmonetary factors (supply shocks). Moreover, inflation and nominal GDP growth are likely to give different readings during periods dominated by supply shocks. An adverse supply shock will tend to raise prices and reduce output—as a result, the impact on the price level is often much more pronounced than the impact on nominal GDP. In contrast, expansionary monetary policy raises both prices and output, with nominal GDP rising even faster than inflation. Here, nominal GDP growth gives a clearer reading of the sort of demand shocks that might be generated by changes in monetary policy.

Naturally, I don't expect all economists to agree with my claim that nominal GDP futures are the most useful indicator of the stance of monetary policy. But surely we can agree that there are serious problems with relying on nominal interest rates and/or the monetary base. Let's not forget that most economists would have been very dismissive of the idea that interest rates were a useful indicator during the German hyperinflation. And as recently as 2007, most economists would have rejected the notion that the monetary base was a useful indicator of the stance of monetary policy. So even if nominal GDP futures are not the optimal indicator, we can do much better than relying on interest rates and monetary base growth, which have dominated discussion of the stance of monetary policy over the past decade.

A recent study from the Federal Reserve Bank of San Francisco made me much more optimistic about the prospects for rethinking the stance of monetary policy. Its author, Vasco Curdia (2015) makes the following observation:

> This *Economic Letter* analyzes the recent behavior of the natural rate using an empirical macroeconomic model. The results suggest that the natural rate is currently very low by historical standards. Because of this, monetary conditions remain relatively tight despite the near-zero federal funds rate, which in turn is keeping economic activity below potential and inflation below target.

Curdia also shows that the natural rate of interest has been well below zero since 2008, suggesting that the fed funds target of 2 percent during April to October 2008 was actually an extremely contractionary monetary policy.

Of course, measuring the stance of monetary policy is not exactly the same as setting a policy target. But there may be an

underlying linkage. Consider Bernanke's suggestion that nominal GDP growth or inflation were the best indicators of the stance of monetary policy. It seems plausible that this suggestion was at least partly motivated by the assumption that nominal GDP growth and inflation are plausible monetary policy targets, and that defining the stance this way would provide a metric for determining whether policy was too expansionary or too contractionary. If the Fed began defining "easy money" as expected nominal GDP growth exceeding 4 percent, and "tight money" as expected nominal GDP growth of less than 4 percent, then it's pretty clear that the public would begin to see 4 percent nominal GDP growth as a sort of benchmark for stable monetary policy.

In his recent memoir, Bernanke (2015) made a similar argument regarding inflation targeting. There was initial resistance within the Fed to an explicit inflation target. So instead, Bernanke set up a system where each Federal Open Market Committee (FOMC) member provided a long-range forecast of inflation (three years out) assuming "appropriate" monetary policy. Bernanke believed that markets would infer that those long-run forecasts represented each FOMC member's view as to the appropriate inflation rate. A few years later, Bernanke succeeded in getting the FOMC to agree on an explicit 2 percent inflation objective, which was roughly the average of those long-run forecasts.

Ultimately, the Fed might not choose nominal GDP growth as its criterion for the stance of monetary policy, but I don't see any obviously superior candidates. In any case, once they have told us their definition of the stance of monetary policy, the next step is to make the Fed more accountable.

How to Make the Fed More Accountable

As noted earlier, Fed officials don't like the idea of a rigid policy instrument rule, such as the Taylor rule. They don't even like simple policy targets, such as 2 percent inflation or 5 percent nominal GDP growth, to be achieved in any fashion the Fed chooses. Currently, the Fed operates under a dual mandate, which gives it a great deal of latitude.

For instance, the Fed recently reduced its estimate of the natural rate of unemployment. A few years ago, the estimate was 5.2 to 6.0 percent. Then it was reduced 5.2 to 5.5 percent. Now the estimate is

5.0 to 5.2 percent. These reductions point to the fact that there are other variables the Fed cares about, outside of inflation and unemployment. The Fed looked at variables such as part-time employment (now unusually high) and nominal wage growth (now unusually low) and determined that the labor market has more slack than the official (U-3) unemployment rate indicates. This led the Fed to continue holding interest rates below the levels consistent with the Taylor rule.

So the Fed doesn't seem to want to be told what to do. And it doesn't even seem to want to be told by Congress to come up with its own rigid policy rule. Yet it remains true that the Fed must in some sense want to do *something*. It must have some sort of policy objectives. And that means it ought to be possible, in principle, to ascertain how effectively the Fed has achieved those objectives, at least in a qualitative sense.

The Fed accepts the notion that it impacts inflation and unemployment by shifting the aggregate demand (AD) curve to the left and right. It does not control aggregate supply. In that case, once all the data comes in, it ought to be possible to ascertain whether the outcome has been too much spending—or too little spending—relative to the Fed's hard-to-define policy objectives. This is what I will call the *minimum level of accountability*.

Suppose that after each meeting, the Fed was instructed to provide a brief summary of the outcome of its previous monetary policy decisions, based on the latest available economic data. Again, recall that the Fed must be trying to achieve something, even if the objective is complex. Its only way of achieving these objectives is by shifting AD to the left and right. So after each meeting, the Fed ought to tell us whether, in retrospect, it would have been desirable for AD growth to have been higher or lower than what actually occurred.

This minimum level of accountability would not force the Fed to come up with any specific composite variable for its various inflation and employment goals. Rather, it would merely require the Fed to tell us whether, in retrospect, demand had been stronger or weaker than it would have liked, and, if so, by how much.

I see this as a first step toward accountability. It provides an absolute minimum level of accountability for a democratic society that delegates an important policymaking role to an unelected committee. But my hope is that this first step will also help the Fed to clarify its own thinking on monetary policy. Obviously, it would be awkward to

undershoot your AD target for 30 or 35 consecutive meetings (as the Fed arguably did after the fall of 2008). It would also help to clarify decisions such as the ending of the QE1 and QE2 programs. My point is not that the Fed couldn't end these programs while AD was below its objective. In fact, it could have done so based on forecasts of the future direction of aggregate demand. But then the Fed would have to evaluate those forecasts at a later date. In retrospect, was it wise to end QE1? How about the decision to end QE2?

Fed accountability would also help Congress. If the Fed said, "On balance, AD is about where we'd like it," then Congress would know that it would be pointless to engage in fiscal stimulus. If the Fed said, "AD is lower than where we'd like it to be," then Congress could have a more intelligent conversation with the Fed. "Why is AD too low?" "Are you guys out of ammunition?" "Do you want us to do more fiscal stimulus?" "Do you need more tools?" "Are you afraid to do more QE because of possible future capital losses—and thus more concerned about the possible embarrassment of having to ask Congress for a bailout than about mass unemployment?" At present, Congress does not engage in these sorts of conversations, mostly because Congress doesn't understand what monetary policy targeting is all about. Accountability would help to educate Congress and thus make the policymaking process more rational.

The Fed does not currently evaluate whether its decisions from the recent past were wise, even in retrospect. However, individual members of the Fed do occasionally admit to the Fed's making mistakes in previous decisions. Bernanke has admitted that the Fed mistakes contributed to both the Great Depression and the Great Inflation of 1966–81. But those errors occurred decades ago. We need an official vote of the entire FOMC, preferably all 19 decision-makers, including nonvoting members: was AD stronger or weaker than desirable? Even more accountability would be desirable, but that minimum level of accountability is a good first step.

In my view, accountability would eventually lead the Fed to settle on a simple metric for whether AD grew too fast or too slow. Perhaps not surprisingly, I think nominal GDP is the ideal measure of AD. Again, this does not require strict NGDP targeting. The Fed might regard 4 percent nominal GDP growth as appropriate in one year, too high the next, and too low the year after that. But if the Fed did settle on NGDP growth as its way of providing accountability for previous policy decisions, then it's easy to imagine this variable gradually

taking on the role of policy target. Later the Fed might start targeting the forecast—that is, setting its policy instrument(s) in such a way that it expects its AD proxy to grow right on target.

Guardrails for Monetary Policy

Elsewhere, I've argued that the Fed should engage in "level targeting"that is, policymakers should promise to return to the previous trend line if they miss their target during a given year. Ben Bernanke once recommended a level targeting (of prices) approach to the Bank of Japan (Bernanke 1999). But when Bernanke joined the Fed's Board of Governors, he found an institution that was reluctant to commit to a specified trend line for prices.

Level targeting removes much of the discretion from monetary policy. Under growth-rate targeting, a central bank that misses its target (perhaps due to unforeseen circumstances) has many options, including continuing along a new trend line with similar slope but higher or lower level. Under level targeting, the central bank has no such flexibility. If the economy is moving increasingly far away from the trend line, it clearly exposes a monetary policy failure. As an example, the GDP deflator in Japan has rarely moved by more than 1 percent during any recent year (mostly lower). But between 1993 and 2013, the GDP deflator fell by more than 15 percent in total. Under level targeting, the failure of the Bank of Japan to maintain price stability is much more apparent than under growth-rate targeting.

Level targeting has many advantages. It gives business people and investors a much clearer idea of the future path of monetary policy. Even the Fed recognizes some advantages to level targeting. For instance, during the deflation of 2008–09, a price-level target path rising at 2 percent per year would have given Fed policy much more "traction" at zero interest rates. Markets would have viewed QE as being significantly more permanentthat is, more likely to lead to future inflation. This would have lowered real interest rates and sped up the economic recovery.

Here I'd like to suggest a compromise, a sort of "guardrails" approach to level targeting. Suppose we are back in 2007 and early 2008, when the Fed saw an unstable economy, but was equally worried about recession and higher inflation. The Fed's central forecast is for continued 5 percent NGDP growth as far as the eye can see, but it wants the discretion to adjust to things like a change in trend

real GDP growth (which seems to have slowed after 2007.) Locking into 5 percent trend nominal GDP growth is too risky in the Fed's view, as it could lead to above target inflation. On the other hand, the Fed would certainly like to prevent the sort of steep drop in nominal GDP, and high unemployment, that actually occurred in 2008–09.

My compromise would be for the Fed to set "guardrails" at a band around 5 percent—say between 4 and 6 percent, or 3 and 7 percent. These band lines might extend out three to five years, at which time the Fed would reevaluate the trend, based on new information about real GDP growth in the United States. The idea is that the lower bound (let's say 4 percent) would be a floor on nominal GDP growth, and the Fed would commit to, *at a minimum*, returning to that trend line if growth fell below 4 percent. Ditto for an overshoot of 6 percent. If the economy were still outside the band at the end of the specified target period, then the Fed would continue to push the economy back into the nominal GDP target range. That doesn't mean it commits to return exactly to the original 5 percent trend line, rather it would commit to do *at least* enough to get back within the 4 percent to 6 percent trend guardrails.

If the Fed had adopted a five-year, 4 to 6 percent nominal GDP target in late 2007, then the U.S. economy would likely have suffered from a period of stagflation—higher than 2 percent inflation and lower than normal real GDP growth. Unemployment would have risen, but nowhere near as high as the 10 percent rate reached in October 2009. By the end of 2012, the economy would probably have experienced something closer to 4 percent nominal GDP growth than 6 percent (which would still be considerably higher than what actually occurred). By this time, the Fed would have realized that real GDP growth had permanently shifted to a lower track and adopted a new 4 percent growth rate, with a 3 to 5 percent band. This would reflect its estimate that trend real GDP growth had fallen to 2 percent.

At one level, this compromise might seem pointless. If the Fed doesn't want to have its hands tied, why would the guardrails approach be any better than a single nominal GDP–level targeting trend line of 4 or 5 percent? The answer is that while the Fed doesn't want its hands tied, it also genuinely doesn't like wild swings in nominal GDP growth. Recall that these swings make its job much harder and put it in the spotlight as it adopts emergency policies like QE to deal with the severe undershoot in nominal GDP growth. Conversely, the Fed would need very high and

unpopular interest rates to deal with an overshoot of 6 percent nominal GDP growth. It would prefer to avoid these extremes, and guardrails would help them to do so.

My claim is that the Fed itself sees, or should see, a tradeoff. Yes, it wants discretion, but it also wants success. There is some band so wide that the Fed would view movements outside that band as unacceptably large. I claim that 2008–09 was one of those periods of unacceptably large swings in nominal GDP. But because it didn't already have a guardrail regime in place, the Fed had trouble communicating a policy that could get us back into the acceptable range. That communication would have had to use the existing inflation targeting language (see Paul Krugman's [1998] recommendation for 4 percent inflation, for example), or perhaps would have required an amount of QE that was politically unacceptable. With 4 and 6 percent guardrails, the Fed could have promised to "do whatever it takes" without seeming to violate previous commitments.

Over time, the Fed would become more comfortable with this policy approach, and the guardrails would gradually narrow. And as nominal GDP growth, not inflation, became better understood as "the real thing," the Fed would become more and more comfortable with keeping its nominal GDP target stable, even as trend real GDP growth (and hence inflation) fluctuated. Or perhaps it would adjust the nominal GDP target only for labor force changes, which would move us closer to George Selgin's productivity norm—a policy approach that's probably superior to simple nominal GDP targeting.[4]

Clear Thinking Leads to Better Decisions

The economics profession lacks a clear indicator of the stance of monetary policy. And yet the concept of money being either "easy" or "tight" clearly plays an important role in the way we think about policy—and indeed the way we think about causation. Did tight money cause the Great Recession? And more importantly, why do so many economists view the question as being absurd?

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[4]In my view, nominal GDP targets should be adjusted only for changes in labor force growth rates, not productivity growth rates. As George Selgin (1997) showed, some variation in inflation is appropriate when productivity growth fluctuates. See also Selgin (1995).

Paralleling the lack of clear thinking about monetary policy is the Fed's reluctance to embrace any clear metric for accountability. The Fed refuses to tell us which numbers would show that its policy decisions in 2008 and 2009 were too expansionary, too contractionary, or about right. The beauty of nominal GDP is that it can do both. It can provide us with a robust measure of the stance of monetary policy, and it can provide a way of making policy accountable, of determining whether the Fed was doing its job.

Once nominal GDP becomes the accepted way to think about whether monetary policy is appropriate, we need to gradually move toward an explicit nominal GDP target path. Putting guardrails on nominal GDP growth is a way of gradually phasing in nominal GDP level targeting, while still providing the Fed with some discretion to deal with cases where previously targeted nominal GDP growth may later seem inappropriate. For any new policy framework to be politically acceptable, it must first be acceptable to central bankers.

History shows that institutional reforms tend to occur incrementally, not all at once. In this article, I have tried to show how three modest reforms could nudge the Fed toward nominal GDP targeting. At least the first two reforms are, or should be, completely uncontroversial. Who can object to the Fed clearly explaining what it means by the language it uses? Economists frequently discuss the "stance" of policy, so why shouldn't we define this term? And who can object to a minimum level of accountability—the Fed evaluating the effectiveness of its past decisions by any metric it chooses? And yet I can't help thinking that these three seemingly innocuous reforms could go a long way toward setting the stage for full-blown nominal GDP level targeting.

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