

the CATO JOURNAL

AN INTERDISCIPLINARY JOURNAL OF PUBLIC POLICY ANALYSIS

RETHINKING MONETARY POLICY

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BOOK REVIEWS

- F. H. Buckley • Mark A. Calabria • Juliana Geran Pilon
Alain Marciano**

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EDITOR'S NOTE

The articles in this issue of the *Cato Journal* were first presented at Cato's 33rd Annual Monetary Conference, "Rethinking Monetary Policy," held in Washington, D.C., on November 12, 2015. At the time of the conference, the Federal Reserve had not raised its policy interest rate since 2006, and had kept it close to zero since 2008. The Federal Open Market Committee then raised the target range for the federal funds rate by 25 basis points in December 2015.

Unconventional monetary policy—characterized by "zero interest rate policy" (ZIRP) and "quantitative easing" (QE), along with macro-prudential regulation—has increased the power of central banks in the United States, Japan, and Europe. Ultra-low interest rates and large-scale asset purchases were supposed to create a wealth effect and stimulate real growth, but those effects have been weak at best. Meanwhile, unconventional monetary policy has created new risks and greatly distorted capital markets.

The monetary base has increased dramatically, along with the size of the Fed's balance sheet, but the monetary transmission mechanism is plugged up by interest on excess reserves, macro-prudential regulation (including, e.g., Dodd-Frank and Basel III), and regime uncertainty. Conventionally measured inflation is low, but Fed policy has encouraged risk taking and helped inflate financial asset prices. Fed watching has become an obsession, diverting resources away from more productive activities.

Money creation is not a panacea and cannot lead to a permanent increase in society's productive capacity or create new wealth. Once rates return to normal, so will asset prices; the Fed's "wealth effect" is really a temporary pseudo-wealth effect. Any benefits of unconventional monetary policy must be weighed against its costs—namely, increased risk taking, misallocation of credit, politicization of investment decisions, decreased private saving and investment, subsidization of government debt, asset bubbles, and rising inequality.

The Phillips Curve is dead but still lives on in Fed models: unemployment has fallen from 10 percent to 5 percent, but inflation has remained less than 2 percent.

The case for ending unconventional monetary policy and normalizing interest rates leads to a deeper issue—namely, how to shape institutions and incentives to achieve a harmonious system of money and banking. That’s a fundamental question this volume—and Cato’s newly established Center for Monetary and Financial Alternatives—seeks to address.

Contributors to this volume revisit the thinking behind unconventional monetary policy and the “new monetary framework,” make the case for transparent monetary rules versus foggy discretion, and point to the distortions generated by ultra-low interest rates and preferential credit allocation. In doing so, they consider what monetary policy can and can’t do, what rules could improve the operation of the monetary and financial system, and what steps should be taken to safeguard our property rights in a sound monetary regime.

—J. A. Dorn

REVISITING THREE INTELLECTUAL PILLARS OF MONETARY POLICY

Claudio Borio

The Great Financial Crisis has triggered much soul-searching within the economic profession and the policymaking community. The crisis shattered the notion that price stability would guarantee macroeconomic stability: financial markets are not self-equilibrating, at least at a price that society can afford. And it showed that prudential frameworks focused on individual institutions viewed on a stand-alone basis were inadequate: a more systemic perspective was needed to avoid missing the forest for the trees. Hence, the welcome trend of putting in place macroprudential frameworks. But has this soul-searching gone far enough?

I shall argue that it has not. More specifically, I would like to revisit and question three deeply held beliefs that underpin current monetary policy received wisdom. The first belief is that it is appropriate to define equilibrium (or natural) rates as those consistent with output at potential and with stable prices (inflation) in any given period—the so-called Wicksellian natural rate. The second is that it is appropriate to think of money (monetary policy) as neutral—that is, as having no impact on real outcomes over medium- to long-term horizons relevant for policy: 10–20 years or so, if not longer. The third is that it is appropriate to set policy on

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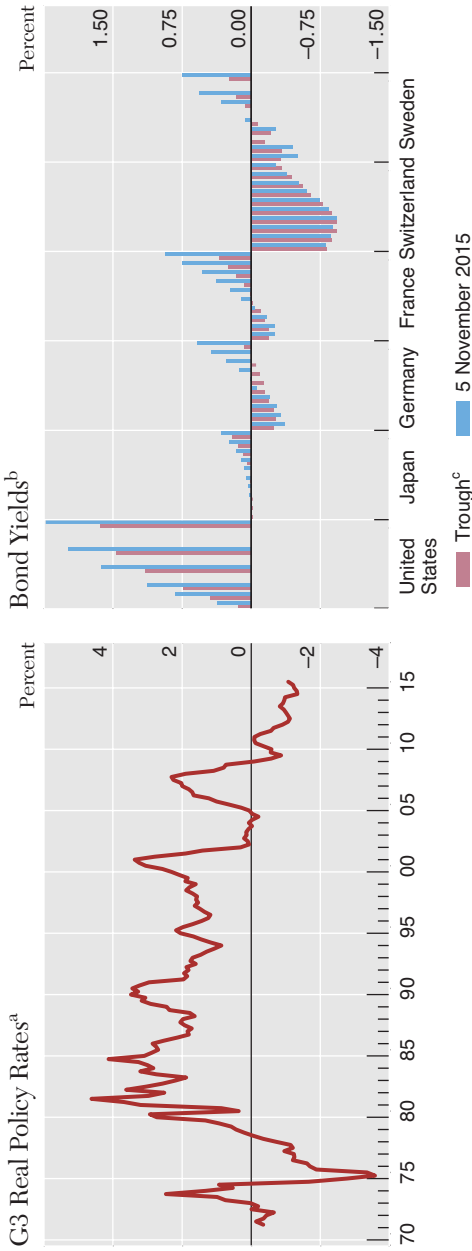
the presumption that deflations are always very costly, sometimes even to regard them as a kind of red line that, once crossed, heralds the abyss.

From these considerations, I shall draw two conclusions. First, I shall argue that the received interpretation of the well-known trend decline in real interest rates—as embodied, for example, in the “saving glut” (Bernanke 2005) and “secular stagnation” (Summers 2014) hypotheses—is not fully satisfactory. Instead, I shall provide a different/complementary interpretation that stresses the decline is, at least in part, a disequilibrium phenomenon that is inconsistent with lasting financial, macroeconomic, and monetary stability. Second, I shall suggest that we need to make adjustments to current monetary policy frameworks in order to have monetary policy play a more active role in preventing systemic financial instability and, hence, in containing its huge macroeconomic costs. This would call for a more symmetrical policy during financial booms and busts—financial cycles. It would mean leaning more deliberately against financial booms and easing less aggressively and, above all, persistently during financial busts.

Equilibrium (Natural) Rates Revisited

Interest rates, short and long, in nominal and inflation-adjusted (real) terms, have been exceptionally low for an unusually long time, regardless of benchmarks. In both nominal and real terms, policy rates are even lower than at the peak of the Great Financial Crisis. In real terms, they have now been negative for even longer than during the Great Inflation of the 1970s (Figure 1, left-hand panel). Turning next to long-term rates, it is well known that in real terms they have followed a long-term downward trend—a point to which I will return. But between December 2014 and end-May 2015, on average no less than around \$2 trillion worth of long-term sovereign debt, much of it issued by euro area sovereigns, was trading at *negative* yields. At their trough, French, German, and Swiss sovereign yields were negative out to a respective 5, 9, and 15 years (Figure 1, right-hand panel). While they have ticked up since then, such negative nominal rates are unprecedented. And all this has been happening even as global growth has not been far away from historical averages, so that the wedge between growth and interest rates has been unusually broad.

FIGURE 1
INTEREST RATES HAVE BEEN EXCEPTIONALLY AND PERSISTENTLY LOW



^aNominal policy rate less consumer price inflation excluding food and energy. Weighted averages for the euro area (Germany), Japan, and the United States based on rolling GDP and PPP exchange rates. ^bYield per maturity; for each country, the bars represent the maturities from 1 year to 10 years. ^cFor the United States, January 30, 2015; for Japan, January 19, 2015; for Germany, April 20, 2015; for France, April 15, 2015; for Switzerland, October 27, 2015; for Sweden, April 17, 2015.

SOURCES: Bloomberg; national data.

How should we think of these market rates and of their relationship to equilibrium ones? Both the received perspective and the one offered here agree that market interest rates are determined by a combination of central banks' and market participants' actions. Central banks set the nominal short-term rate and, for a given outstanding stock, they influence the nominal long-term rate through their signals of future policy rates and their asset purchases. Market participants, in turn, adjust their portfolios based on their expectations of central bank policy, their views about the other factors driving long-term rates, their attitude toward risk, and various balance sheet constraints. Given nominal interest rates, actual inflation determines *ex post* real rates and expected inflation determines *ex ante* real rates. So far, so good.

But how can we tell whether market rates are at their equilibrium level from a macroeconomic perspective—that is, consistent with sustainable good economic performance? The answer is that if they stay at the wrong level for long enough, something “bad” will happen, leading to an eventual correction. It is in this sense that many economists say that the influence of central banks on short-term real rates is only transitory.

But what is that something “bad”? Here the two perspectives differ. In the received perspective, it is the behavior of inflation that provides the key signal. If there is excess capacity, inflation will fall; if there is overheating, it will rise. This corresponds to what is often also called the Wicksellian natural rate—that is, the rate that equates aggregate demand and supply at full employment (or, equivalently, the rate that prevails when actual output equals potential output).

The perspective developed here suggests that this view is too narrow. Another possible key signal is the build-up of financial imbalances, which typically take the form of strong increases in credit, asset prices, and risk-taking. Historically, these have been the main cause of episodes of systemic financial crises with huge economic costs. Think, for instance, of Japan and the Nordic countries in the late 1980s, Asia in the mid-1990s, and the United States ahead of the Great Financial Crisis or, going back in time, ahead of the Great Depression (see Eichengreen and Mitchener 2003).

The reasoning is straightforward. Acknowledge, as indeed some of the proponents of the received view have, that low interest rates are a factor in fueling financial booms and busts. After all, intuitively, it is hard to argue that they are not, given that monetary policy operates

by influencing credit expansion, asset prices and risk-taking. Acknowledge further that financial booms and busts cause huge and lasting economic damage—in fact, no one denies this, given the large amount of empirical evidence. Then it follows that if we think of an equilibrium rate more broadly as one consistent with sustainable good economic performance, rates cannot be at their equilibrium level if they are inconsistent with financial stability.

This is partly an issue of the time frame envisaged for the disequilibria to cause damage. In the received view, it is relatively short, as the focus is on output deviations from potential at business cycle frequencies. In the view proposed here, it is longer, as the focus is on the potentially larger output fluctuations at financial cycle frequencies. As traditionally measured, the duration of the business cycle is up to eight years; by contrast, the duration of financial cycles since the early 1980s has been 16–20 years (continuous and dashed lines, respectively, in Figure 2) (Drehmann, Borio, and Tsatsaronis 2012).¹

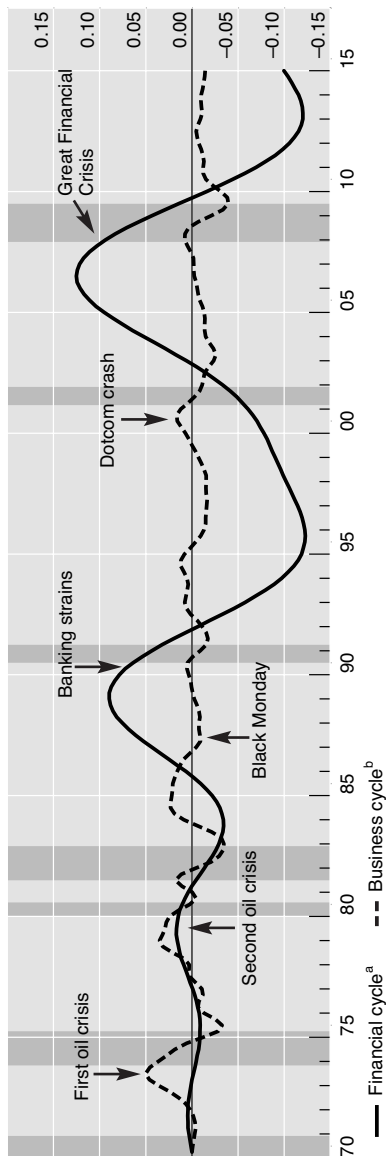
It is not uncommon to hear supporters of the “saving glut” and “secular stagnation” hypotheses say that the equilibrium or natural rate is very low, even negative, and that this rate generates financial instability.² Seen from this angle, such a statement is somewhat misleading. It is more a reflection of the incompleteness of the analytical frameworks used to define and measure the natural rate concept—frameworks that do not incorporate financial instability—than a reflection of an inherent tension between natural rates and financial stability. There is a need to go beyond the full employment-inflation paradigm to fully characterize economic equilibrium.

What I have said applies just as much to the short-term rate, which the central bank sets, as to long-term rates. For there is no guarantee that the combination of central banks’ and market participants’ decisions will guide long-term rates toward equilibrium. Just like any other asset price, long-term rates may be misaligned for very long periods, except that their misalignments have more pervasive effects.

¹For a novel empirical analysis that digs deeper into the dynamics of financial cycles and assigns a key role to interest rates, see Drehmann and Juselius (2015). The analysis does a remarkably good job of tracing, out of sample, the behavior of U.S. output around the Great Recession.

²For an in-depth analysis along these lines, see Bean et al. (2015). In contrast to others, however, these authors do see monetary policy playing a role in leaning against financial imbalances in order to limit the risk of financial instability.

FIGURE 2
FINANCIAL AND BUSINESS CYCLES IN THE UNITED STATES



^aThe financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices; Q1 1970 = 0. ^bThe business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years; Q1 1970 = 0.

SOURCE: Drehmann, Borio, and Tsatsaronis (2012), updated.

Importantly, the point about how to think of equilibrium rates is not purely semantic. It has first-order implications for monetary policy, since we all agree that the central bank's task is precisely to set the policy rate so as to track the natural or equilibrium rate. I will come back to this point.

Monetary Neutrality Revisited

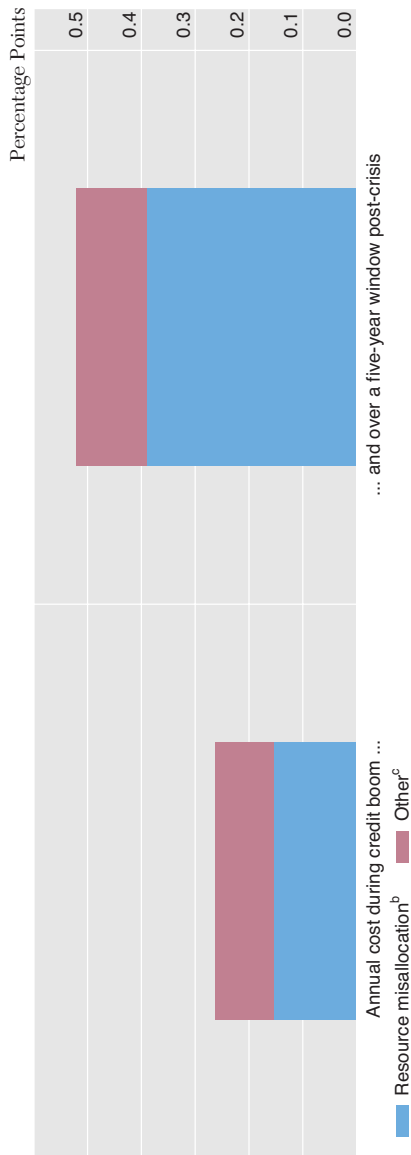
Let me now turn to the second pillar of received wisdom: the notion of money (monetary policy) neutrality. The previous analysis already suggests that this notion is problematic. The reason is that there is a large body of evidence indicating that the costs of financial (banking) crises are very long-lasting, if not permanent: growth may return to its pre-crisis long-term trend, but output remains below its pre-crisis long-term trend (BCBS 2010, Ball 2014).³ Thus, as long as one acknowledges that monetary policy can fuel financial booms and their subsequent bust, it is logically dubious to argue that it is neutral.

More recent evidence uncovered by BIS research confirms this point and sheds further light on it. It does so by investigating the mechanisms through which financial booms and busts cause so much lasting damage. The work shifts attention from the demand side of the equation, which is where the literature has gone (e.g., Reinhart and Reinhart 2010, Drehmann and Juselius 2015, Rogoff 2015), to the supply side, which is just as important (e.g., Cecchetti and Kharroubi 2015). It is well known that financial busts weaken demand as the interplay of asset prices falls and overindebtedness causes havoc in balance sheets. But what about the neglected nexus between financial booms and busts, resource misallocations, and productivity?

By examining 21 advanced economies over the period 1969–2013, our research produces three findings (Borio et al. 2015b). First, financial booms tend to undermine productivity growth as they occur (Figure 3). For a typical credit boom, just over a quarter of a percentage point per year is a kind of lower bound. Second, a good chunk of this, almost 60 percent, reflects the shift of factors of production (labor) to lower productivity growth sectors. Think, in particular, of

³The studies reviewed in BCBS (2010) that allow for the possibility of permanent effects point to a loss equivalent to some 6 percent of GDP on average. Reviewing the experience with the recent crisis, Ball (2014) estimates a permanent decline in potential output of over 8 percent among OECD countries.

FIGURE 3
FINANCIAL BOOMS SAP PRODUCTIVITY BY MISALLOCATING RESOURCES^a



^aEstimates calculated over the period 1969–2013 for 21 advanced economies. ^bAnnual impact on productivity growth of labor shifts into less productive sectors during the credit boom, as measured over the period shown. ^cAnnual impact in the absence of reallocations during the boom. SOURCE: Based on Borio et al. (2015b).

shifts into a temporarily bloated construction sector. The rest is the impact on productivity that is common across sectors, such as the shared component of aggregate capital accumulation and total factor productivity. Third, the impact of the misallocations that occur *during a boom* is much larger if a crisis follows. The average loss per year in the five years after a crisis is more than twice that during a boom, around half a percentage point per year. Taking, say, a five-year boom and five post-crisis years together, the cumulative impact would amount to a loss of some 4 percentage points. Put differently, for the period 2008–13, we are talking about a loss of some 0.5 percentage points per year for the advanced countries that saw booms and crises. This is roughly equal to their actual average productivity growth during the same window. Now, the point is not to take these figures at face value, but to note that these factors are material and should receive much more attention. The length of the periods and orders of magnitude involved are definitely large enough to cast doubt on the notion of monetary policy neutrality.

In addition to the implication for the notion of neutrality, the role of misallocations highlights three further points. First, it is worth broadening the mechanisms behind “hysteresis” to include those that work through resource misallocations linked to financial booms and busts. The allocation of credit, over and above its overall amount, deserves much greater attention.

Second, the well-known limitations of expansionary monetary policy in tackling busts appear in a new light. It is not just that agents wish to deleverage and the transmission through banks is broken; easy monetary policy cannot undo the resource misallocations.⁴ For instance, it cannot, and should not, bring back to life idle cranes when there is oversupply of buildings. In other words, not all output gaps are born equal, amenable to the same remedies. During financial busts, after the financial system has been stabilized (crisis management), removing the obstacles that hold back growth is key. This means first and foremost facilitating balance sheet repair and implementing structural reforms (Borio, Vale, and van Peter 2010; Borio 2014a; BIS 2014, 2015).

⁴For these reasons, post-financial boom recessions are best regarded as “balance sheet recessions.” The term was probably coined by Koo (2003). While the spirit is similar, in BIS work we have embedded it in a somewhat different analysis, which does not imply the same policy conclusions, especially with regard to fiscal policy (e.g., Borio 2014a; BIS 2014, 2015).

Finally, there is a need for macro models to go beyond the “one good” standard benchmark. To be sure, a number of models do, and the time-honored distinction between tradables and nontradables is the best known example. But the workhorse models that underlie policy are, in effect, one-good models. Unless we overcome this drawback, there is a risk of throwing out the baby with the bathwater.

The Costs of Deflation Revisited

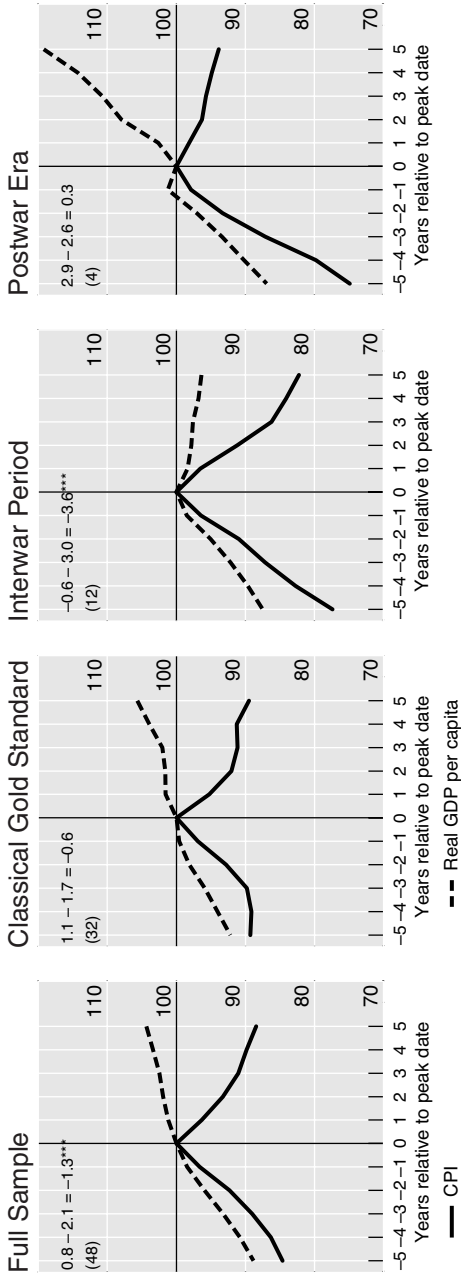
Let me now turn to the third notion I wish to question: what might be called the deflation “bogeyman” (Rajan 2015). Is deflation always and everywhere very costly for output? This is indeed the premise that seems to have underlain monetary policy for quite some time now.

In fact, if one looks at the evidence carefully, the notion does not seem to hold water. Empirical work, some of it carried out at the BIS, had already reached this conclusion pre-crisis, leading to the distinction between “good” and “bad” deflations (e.g., Bordo and Redish 2004, Borio and Filardo 2004, Atkeson and Kehoe 2004, Bordo and Filardo 2005). A more comprehensive and systematic study we carried out this year has confirmed and extended this conclusion (Borio et al. 2015a).

What did we do? We used a newly constructed data set that spans more than 140 years (1870–2013), covers up to 38 economies, and includes equity and house prices as well as debt, although still not for all countries in all periods. We then apply a variety of statistical techniques to examine across monetary regimes the link between deflation and (per capita) output growth and the relative impact of deflation and asset price declines. We consider both transitory and, even more importantly, persistent deflations.

We reach three basic conclusions. First, before controlling for the behavior of asset prices, we find only a weak association between deflation and growth; the Great Depression is the main exception (Figure 4). Second, we find a stronger link with asset price declines, and controlling for them further weakens the link between deflations and growth. In fact, the link disappears even in the Great Depression (Figure 5). Finally, we find no evidence of a damaging interplay between deflation and debt (Fisher’s “debt deflation”; Fisher 1933). By contrast, we do find evidence of a damaging interplay between

FIGURE 4
 OUTPUT COST OF PERSISTENT GOODS AND SERVICES PRICE DEFLATIONS^a
 (THIRTY-EIGHT ECONOMIES, ^b 1870–2013, VARIABLE PEAK^c YEAR = 100)

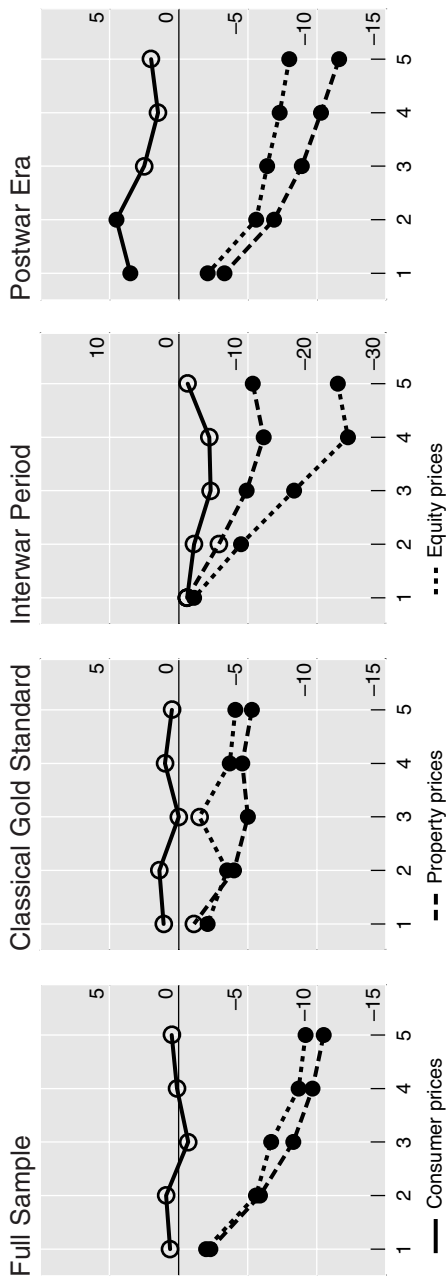


NOTES: The numbers in the graph indicate five-year averages of post- and pre-price peak growth in real GDP per capita (in percent) and the difference between the two periods (in percentage points); */**/*** denotes mean equality rejection with significance at the 10, 5, and 1 percent level. In parentheses is the number of peaks that are included in the calculations. The data included cover the peaks, with complete five-year trajectories not affected by observations from 1914–18 and 1939–45. For Spain, the Civil War observations are also excluded (1936–39).

^aSimple average of the series of CPI and real GDP per capita readings five years before and after each peak for each economy, rebased with the peaks equal to 100 (denoted as year 0). ^bAs listed in Borio et al. (2015a: Table 1). ^cIncludes only persistent deflations in the price of goods and services (consumer prices) identified as periods following price peaks associated with a turning point in the five-year moving average and peak levels exceeding price index levels in the preceding and subsequent five years.

SOURCE: Borio et al. (2015a).

FIGURE 5
CHANGE IN PER CAPITA OUTPUT GROWTH AFTER PRICE PEAKS^a
(IN PERCENTAGE POINTS)^b



NOTES: The approach underlying the estimated effects shown in the graph is described in Borio et al. (2015a); a circle indicates an insignificant coefficient, and a filled circle indicates that a coefficient is significant at least at the 10 percent level. Estimated effects are conditional on sample means (country fixed effects) and on the effects of the respective other price peaks (e.g., the estimated change in h-period growth after CPI peaks is conditional on the estimated change after property and equity price peaks). For the respective country samples, see Borio et al. (2015a).
^aThe graph shows the estimated difference between h-period per capita output growth after and before price peak. ^bThe estimated regression coefficients are multiplied by 100 in order to obtain the effect in percentage points.

SOURCE: Borio et al. (2015a).

private sector debt and property (house) prices, especially in the postwar period.

Some might argue that the recent Japanese experience contradicts this, but in fact it does not. The key is to adjust for demographics (growth per working age population), which cloud analyses based on headline growth figures and which are clearly exogenous. On this basis, Japan did very badly in the 1990s, when deflation had not yet set in but asset prices were collapsing following the outsize financial boom in the 1980s. And it did comparatively well in the 2000s, once the banking system got fixed and deflation set in, raising real interest rates as policy rates got stuck at the zero lower bound. While, on a per capita basis, average growth was roughly similar at some 0.8–0.9 percent in 1991–2000 and 2000–13, it rose from 1.0 percent to 1.6 percent on a per working age population basis. A comparison with the United States is quite telling. Between 2000 and 2013, cumulative growth per working age population exceeded 20 percent in Japan, compared with roughly 11 percent in the United States. This picture does not change if one excludes the Great Financial Crisis. Japan lost one decade, in the 1990s, not two.

How should we interpret these results? To my mind, they are consistent with the distinction between supply-driven and demand-driven deflations: the former depress prices while boosting output (i.e., they may be regarded as “good”); the latter coincide with both price declines and weak output (and, hence, may be regarded as “bad”).⁵ The results are also consistent with the different size and nature of the falls in the price level and asset prices: the former are typically smaller and essentially redistributive; the latter are typically much larger and are normally perceived as nondistributive.

From this viewpoint, there are grounds to believe that a sizable chunk of the secular disinflationary forces since the 1990s have been of the good variety. They may well reflect the globalization of the real economy and, possibly, technological innovation. The integration of China and former communist countries into the global economy has surely been critical. It has made labor and goods markets much more contestable, eroding producers’ pricing power and labor’s bargaining power as well as reducing the risk of upward wage-price spirals. BIS research has found evidence to that effect. It has uncovered a larger

⁵George Selgin was an early proponent of the distinction between “good” and “bad” deflation (see Selgin 1988, 1997).

role played by global factors at the expense of domestic ones in driving both wages and prices (Borio and Filardo 2007, BIS 2014).⁶

This analysis hints at some broader policy conclusions. It suggests that it may be worth rebalancing the policy focus, away from exclusive attention to deflation threats and toward financial cycle threats.

Reinterpreting the Long-Term Decline in Real Interest Rates

Consider next the implications of the analysis for how to interpret the long-term decline in real interest rates (Figure 6). The analysis helps provide a complementary interpretation to the received one. It suggests that the decline is not just an equilibrium phenomenon but, in part, a disequilibrium one.

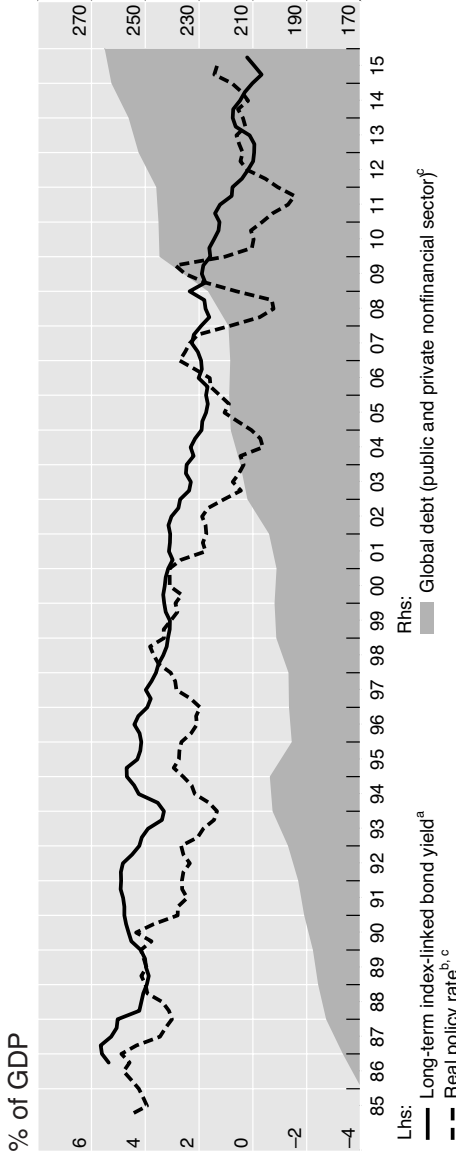
In the received view, central banks and market participants have been pushing short- and long-term real interest rates toward their equilibrium, Wicksellian level. In turn, this natural rate is determined by deep exogenous forces, such as technology, demographics, and income distribution. A common narrative is that these have led to a structural, or at least long-lasting, deficiency in aggregate demand.

In the view offered here, the long-term decline reflects, in part, asymmetrical monetary policy over successive financial and business cycles. Global disinflationary forces, in the wake of the globalization of the real economy and technological innovations, have kept a lid on inflation. Monetary policy has failed to lean against unsustainable financial booms. The booms and, in particular, subsequent busts have caused long-term economic damage. Policy has responded very aggressively and, above all, persistently to the bust, sowing the seeds of the next problem. Over time, this has imparted a downward bias to interest rates and an upward one to debt, as indicated by the steady rise in total debt-to-GDP ratios (Figure 6).

This can contribute to a kind of “debt trap” (Borio and Disyatat 2014, BIS 2014). Over time, policy runs out of ammunition. And it becomes harder to raise rates without causing economic damage, owing to large debts and the distortions generated in the real economy. It is as if the whole economic system adjusted to such low rates

⁶That said, there is no consensus on this point. While some empirical studies have reached similar conclusions (e.g., Bianchi and Civelli 2013, Ciccarelli and Mojon 2010, Eickmeier and Moll 2009), others have not (e.g., Ihrig et al. 2010 and Martínez-García and Wynne 2012).

FIGURE 6
INTEREST RATES SINK AS DEBT SOARS



^aFrom 1998, simple average of France, the United Kingdom, and the United States; otherwise, only the United Kingdom. ^bNominal policy rate less consumer price inflation. ^cAggregate based on weighted averages for G7 economies plus China based on rolling GDP and PPP exchange rates. 2015 figure is based on Q1 or Q2 data.

SOURCES: IMF, *World Economic Outlook*; OECD, *Economic Outlook*; national data; BIS calculations.

and became less tolerant of higher ones, at least without some transitional pain. This process gives rise to a new, insidious form of “time inconsistency,” whereby policy steps may appear reasonable when taken in isolation but, as a sequence, lead policy astray.

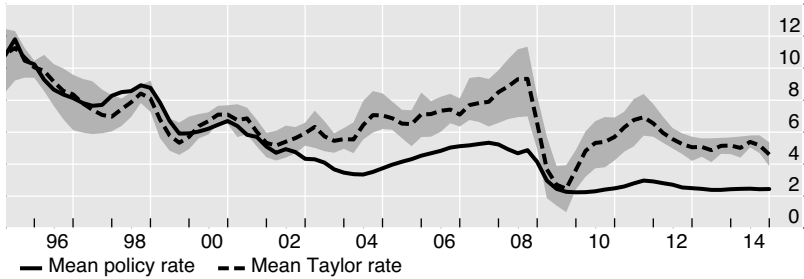
The bottom line is that, over sufficiently long horizons, low interest rates become to some extent self-validating. Too low rates in the past are one reason—not the only reason—for such low rates today. In other words, policy rates are not simply passively reflecting some deep exogenous forces; they are also helping to shape the economic environment policymakers take as given (“exogenous”) when tomorrow becomes today.

Here the international monetary and financial system plays a key role (Borio 2014b, BIS 2015), because successive crises need not occur in the same country, although sometimes they have. Low rates in countries that are fighting a financial bust may induce problems elsewhere. Policymakers in the struggling economies try very hard to stimulate demand but get little traction through domestic channels, for the reasons mentioned before. As a result, exchange rate depreciation becomes the key transmission mechanism. This induces unwelcome exchange rate appreciation in countries that may also be in a bust or at different points in their financial cycle. Appreciation pressure is resisted by keeping interest rates lower than otherwise and/or by intervening in the exchange rate market (Rajan 2014). Thus, easing begets easing.⁷

This helps explain a couple of developments taking place before our very eyes. It is a reason why policy rates appear unusually low for the world as a whole regardless of benchmarks. Figure 7 illustrates this point with the help of a range of Taylor rules (e.g., Hofmann and Bogdanova 2012). And it is also a reason why for quite some time now we have been seeing signs of the build-up of dangerous financial imbalances in countries less affected by the crisis, especially emerging market economies (EMEs) (including very large ones), but also in some advanced economies less affected by the crisis (BIS 2014, 2015). Commodity exporters have been very prominent here, in the

⁷Quite apart from policy responses to spillovers, there are several mechanisms through which the international monetary and financial system can amplify financial booms and busts, including the outsize reach of international currencies and the ebbs and flows of global liquidity. For a fuller discussion, see Borio (2014b) and BIS (2015). For specific aspects, see also Borio and Disyatat (2011); Shin (2012, 2013); Rey (2013); and McCauley, McGuire, and Sushko (2015).

FIGURE 7
UNUSUALLY ACCOMMODATIVE GLOBAL
MONETARY CONDITIONS^a
(IN PERCENT)



NOTES: The Taylor rates are calculated as $i = r^* + \pi^* + 1.5(\pi - \pi^*) + 0.5y$, where π is a measure of inflation, y is a measure of the output gap, π^* is the inflation target, and r^* is the long-run real interest rate, here proxied by real trend output growth. The graph shows the mean and the range of the Taylor rates of different inflation/output gap combinations, obtained by combining four measures of inflation (headline, core, GDP deflator, and consensus headline forecasts) with four measures of the output gap (obtained using Hodrick-Prescott (HP) filter, segmented linear trend and unobserved components techniques, and IMF estimates). π^* is set equal to the official inflation target/objective, and otherwise to the sample average or trend inflation estimated through a standard HP filter. See Hofmann and Bogdanova (2012).

^aWeighted averages based on 2005 PPP weights. “Global” comprises all economies listed here. Advanced economies: Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States. Emerging market economies: Argentina, Brazil, Chile, China, Chinese Taipei, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Singapore, South Africa, and Thailand.

SOURCES: IMF, *International Financial Statistics* and *World Economic Outlook*; Bloomberg; CEIC; Consensus Economics; Datastream; national data; BIS calculations.

wake of the exceptionally strong commodity price booms. Recently, these financial booms have matured and begun to turn. If serious financial strains did materialize, spillbacks to the rest of the world could spread weakness across the globe: the heft of EMEs has greatly increased over the last couple of decades, from around one third to almost half of world GDP.

Adjusting Monetary Policy Frameworks

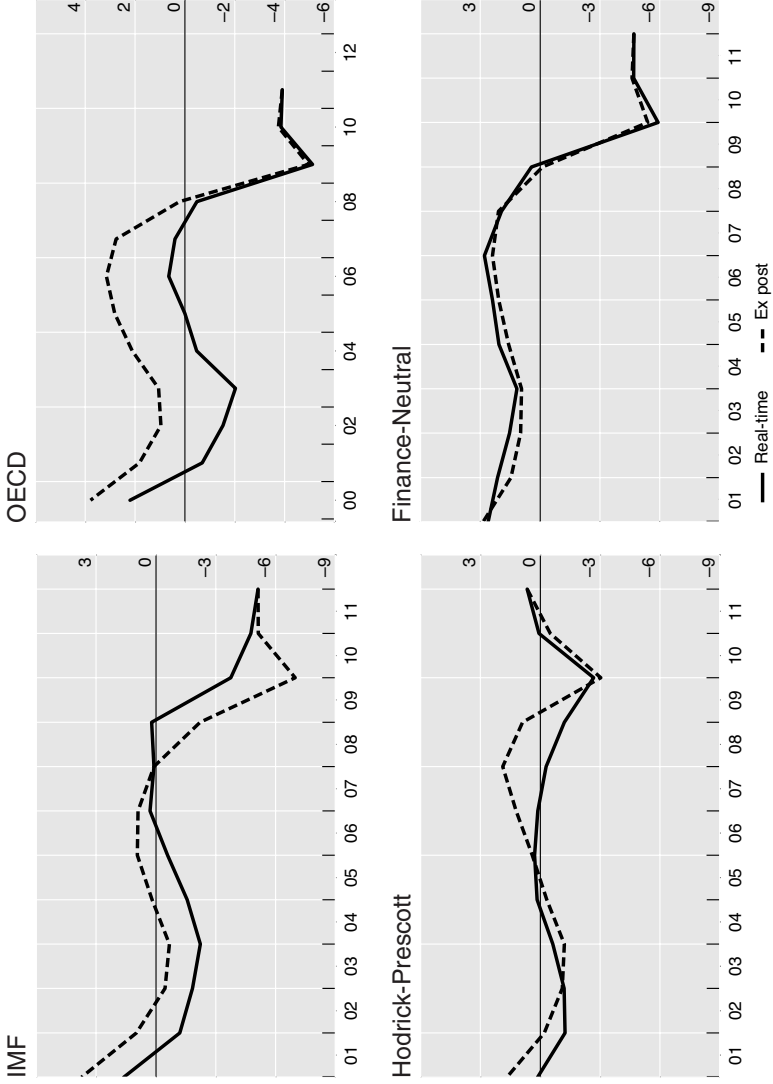
This analysis suggests that it would be important to adjust monetary policy frameworks to take financial booms and busts systematically into account (Borio 2014c, BIS 2014, 2015).

This amounts to putting in place more symmetrical policies across financial booms and busts. It means leaning more deliberately against financial booms even if near-term inflation stays low and stable or may be below numerical objectives, and easing less aggressively and, above all, persistently during financial busts, recognizing the limitations of monetary policy following the crisis management phase. Taken together, these adjustments should help reduce the risk of a persistent easing bias that can lead to a progressive loss of policy room for maneuver over time and entrench instability and chronic weakness in the global economy.

Three common objections have been leveled against such adjustments. While they are well founded, I believe none of them is a showstopper.⁸ The first is that it is hard to identify financial imbalances as they develop. This is true, but a whole apparatus is now in place to do precisely that in the context of macroprudential frameworks. There is a certain tension, to say the least, in arguing that macroprudential policies should be actively used while highlighting measurement difficulties for monetary policy. Moreover, it is not sufficiently acknowledged that traditional monetary policy benchmarks are also very hard to measure: think of output gaps, nonaccelerating inflation rates of unemployment (NAIRUs), and natural interest rates, just to name a few. This is precisely why the behavior of inflation ends up being the real deciding factor when measuring them—the practice that proved so dangerous pre-crisis. In fact, BIS research has found that financial cycle information—credit and property price growth—can assist in obtaining a better measure of potential output in real time (Figure 8), helping to overcome the deficiencies of traditional approaches (see, e.g., Borio, Disyatat, and Juselius 2013). Our failure to recognize the limitations of traditional monetary yardsticks is probably more a reflection of our familiarity with them than of their inherent properties. Familiarity breeds complacency.

⁸For a recent analysis that reviews the literature and reaches more skeptical conclusions about the role of monetary policy, see IMF (2015). See also G30 (2015) for a less skeptical view.

FIGURE 8
 U.S. OUTPUT GAPS: EX POST AND REAL-TIME ESTIMATES
 (IN PERCENT)



NOTES: For each time t , the “real-time” estimates are based only on the sample up to that point in time. The “ex post” estimates are based on the full sample.
 SOURCE: Borio, Diayat, and Juselius (2013).

The second objection is that it is better to rely on macroprudential policy and leave monetary policy to focus on inflation—a sort of “separation principle.” To my mind, this would be too imprudent (Borio 2014d). Even where they have been activated vigorously, macroprudential measures have not prevented the emergence of the usual signs of financial imbalances, such as in EMEs. And as a means of reining in financial booms, as opposed to building resilience, macroprudential tools operate in a similar way to monetary policy: they restrain credit expansion, asset price increases, and risk-taking (e.g., Borio and Zhu 2012, Bruno and Shin 2014). To be sure, they can be more targeted. And they can help relieve pressure on currency appreciation, which may in turn fuel risk-taking where foreign currency borrowing is widespread (Borio, McCauley, and McGuire 2011; Bruno and Shin 2014; Bruno, Shim, and Shin 2015). Even so, there is a certain tension in pressing on the accelerator and brake at the same time, such as when loosening monetary policy while seeking to offset its impact on financial instability through macroprudential measures.

The third objection is that the proposed adjustments are not consistent with inflation objectives. They require too much tolerance for persistent deviations of inflation from targets. This, in turn, could undermine credibility to secure price stability. No doubt, the adjustments pose serious communication challenges: they should not be underestimated.

Still, two responses are possible. For one, it is not clear that central banks have exploited all the flexibility that current frameworks allow. Even when numerical targets are in place, the frameworks often make it explicit that the permitted persistence of deviations depends on factors driving inflation away from targets. The reluctance to use the flexibility available reflects perceived tradeoffs and hence costs and benefits. These could change if, for instance, views about the effectiveness of macroprudential tools and the costs of deflation evolved, possibly under the force of events. Time will tell.

In addition, if mandates are seen as overly constraining the room for maneuver, revisiting them should not be taboo. After all, mandates are a means to an end. That said, the analytical lens through which one perceives how the economy works matters more than mandates. It is easy to see how adding an explicit financial stability objective could sometimes make matters worse. For instance, even if inflation is rising briskly, it could be taken as a reason not to tighten

policy in order to avoid short-term damage to a weak banking system: such a response would be myopic. Given where we are, the priority is to use the existing room for maneuver to the full; revisiting mandates should be a last resort.

Conclusion

There are good reasons to question three deeply held beliefs underpinning monetary policy received wisdom. First, defining equilibrium (or natural) rates purely in terms of the equality of actual and potential output and price stability in any given period is too narrow an approach. An equilibrium rate should also be consistent with *sustainable* financial and macroeconomic stability—two sides of the same coin. Here, I highlighted the role of financial booms and busts, or financial cycles.

Second, money (monetary policy) is not neutral over medium- to long-term horizons relevant for policy—that is, 10–20 years or so, if not longer. This is precisely because it contributes to financial booms and busts, which give rise to long-lasting, if not permanent, economic costs. Here I highlighted the neglected impact of resource misallocations on productivity growth.

Finally, deflations are not always costly in terms of output. The evidence indicates that the link comes largely from the Great Depression and, even then, it disappears if one controls for asset price declines. Here I highlighted the costs of declining asset prices, especially property prices, and the distinction between supply-driven and demand-driven deflations.

From this, I drew two conclusions. First, the long-term decline in *real* interest rates since at least the 1990s may well be, in part, a disequilibrium phenomenon, not consistent with lasting financial, macroeconomic, and monetary stability. Here I highlighted the asymmetrical monetary policy response to financial booms and busts, which induces an easing bias over time.

Second, there is a need to adjust monetary policy frameworks to take financial booms and busts systematically into account. This, in turn, would avoid that easing bias and the risk of a debt trap. Here I highlighted that it is imprudent to rely exclusively on macroprudential measures to constrain the build-up of financial imbalances. Macroprudential policy must be part of the answer, but it cannot be the whole answer.

I am, of course, fully aware that questioning deep-seated beliefs is a risky business. I do not pretend to have all the answers. But I do believe it is essential to explore these beliefs critically and to have a proper debate. The stakes for the economic profession and the global economy are simply too high. And, as Mark Twain once famously said: “It ain’t what you don’t know that gets you into trouble. It’s what you know for sure that just ain’t so.”

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RETHINKING THE INTERNATIONAL MONETARY SYSTEM

John B. Taylor

In previous articles in the annual monetary issue of the *Cato Journal*, I drew on historical facts and economic theory to explain the benefits of rules-based monetary policy and why legislation could help the United States reap those benefits (Taylor 2011, 2013a). In this article, I discuss the international aspects of monetary policy, a subject often glossed over in modern debates about rules-based policy, at least compared with discussions about the classic rules-based gold standard.¹

The Situation

As I see it, the international monetary system has drifted away in recent years from the kind of steady rules-based system long advocated by academic reformers and experienced practitioners across the economic spectrum all the way from Milton Friedman (1953) to Paul Volcker (2014). When you look around the world,

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¹For example, Hume's international specie-flow mechanism is central to discussions of the gold standard by Bordo (2007) and Ickes (2006).

you see huge swings of capital flows especially into and out of emerging markets; you see increased volatility of exchange rates reminiscent of currency wars and competitive devaluations; and worst of all you see poor economic performance, including a global financial crisis, a great recession, a very slow recovery, and now disappointing economic growth in many emerging markets and developing countries.²

On the economic policy front, you see the spread and amplification³ of unusual monetary policy actions and interventions across countries; you see governments increasingly imposing capital controls, intervening in exchange markets, and fine-tuning macroprudential regulations to affect international exchange transactions. You even see top officials at the international financial institutions endorsing such controls and interventions, suggesting that they should be built into a new global system, a far cry from the days when these institutions were arguing for the removal of such controls.⁴

These developments have led some to conclude that a steady rules-based international monetary system is literally impossible, at least one built on the three-pillar foundation of flexible exchange rates, open capital markets, and an independent rules-based monetary policy in each country. This foundation was implicit in Milton Friedman's (1953) case for flexible exchange rates, which held that "the logical domestic counterpart of flexible exchange rates is a strict fiduciary currency changed in quantity in accordance with rules designed to promote domestic stability." And it was explicit in research work starting in the 1980s, which found that if each country followed its own rules-based monetary policy consistent with its own

²I refer in this statement to *gross* capital flows; see Borio and Disyatat (2015) for a useful discussion of the relationship between the current account, net, and gross capital flows.

³Amplification occurs when more than one central bank follows other central banks. Then a series of spillovers evolves in which each central bank reacts by moving its interest rate when another central bank moves, resulting in a multiplier effect as explained in Taylor (2009).

⁴Compare, for example, the International Monetary Fund (2012) report, which states that "capital flow management measures [that is, capital controls] can be useful," with the Communique of the Interim Committee (1997) of the IMF, which called for "an amendment of the Fund's Articles" to promote "an orderly liberalization of capital movements."

domestic stability, the result would be a nearly optimal international rules-based system.⁵

After documenting recent “surges and retrenchments in capital flows” for central bankers at a recent Jackson Hole conference, Helene Rey (2014) argued that there is an “irreconcilable duo: independent monetary policies are possible if and only if the capital account is managed, directly or indirectly via macro-prudential policies” and “if they are not sufficient, capital controls must also be considered.” In other words, independent monetary policies and open capital markets are irreconcilable.

And after reviewing evidence that monetary policy in several central banks is significantly contaminated by policy spillovers from decisions at other central banks,⁶ Sebastian Edwards (2015b) called “into question the idea that under flexible exchange rates there is monetary policy independence.” He thereby pointed out another apparently irreconcilable duo: independent monetary policies designed to achieve domestic economic stability and flexible exchange rates.

The Problem

In my view, there is no inherent incompatibility between internationally independent monetary policies and either open capital markets or flexible exchange rates. The recent empirical correlations that suggest otherwise are likely spurious, stemming from a substantial deviation from rules-based monetary policy in many countries, which is neither necessary nor advisable.

That there has been such a deviation is beyond dispute. Empirical research by Ahrend (2010) on interest rate policy in the OECD countries and by Taylor (2007), Kahn (2010), and Selgin, Beckworth, and Bahadir (2015) on interest rate policy in the United States shows that a deviation from rules-based policy started around 2003–05—well before the financial crisis—creating a boom

⁵See Carlozzi and Taylor (1985) and Taylor (1985), for example.

⁶Many studies have documented policy spillovers by showing that foreign interest rates appear with statistically significant coefficients in policy rule regressions, including Edwards (2015a), Carstens (2015), Gray (2013) and Taylor (2007). There is also direct evidence reported by central banks as discussed in Taylor (2013b).

and an inevitable bust. Hofmann and Bogdanova (2012) find an ongoing “Global Great Deviation,” which is caused in part by the spread and amplification of policy deviations around the world. Deviations from rules are also seen in the large-scale asset purchase programs known as quantitative easing (QE) and in frequently changing discretionary forward guidance operations. In response to quantitative easing in the United States, policymakers in Japan engaged in quantitative easing and then policymakers in Europe expanded their own quantitative easing in response to both. Exchange rate effects were on their minds and openly discussed. Note that these departures from rules-based policy refer to events before and after the panic of 2008, not to the actions taken by central banks during the panic.

There is evidence that the increased volatilities of capital flows and exchange rates are associated with these deviations from rules-based policy. Taylor (2015) finds an increase in exchange rate volatility of the U.S. dollar starting around 2003, around the time of the recent deviation from rules-based policy. Carstens (2015) finds a sharp rise in the volatility of emerging market capital flows, debt, and equity around the same time. Rey (2014) finds that “monetary policy in the center country . . . affects leverage of global banks, credit flows and credit growth in the international financial system.” Much of this effect appears to be due to excessive swings in monetary policy starting about a dozen years ago when very low interest rates in the United States drove an international search for yield.⁷

There is also evidence that the increased spillovers of central banks’ actions on other central banks are associated with the deviations from rules-based policy. Cries of spillover of Fed policies by emerging market officials certainly have grown louder during this period. And the currency-war-like sequence of QE begetting QE from the United States to Japan and to the eurozone in recent years occurred with discretionary rather than rule-like policies. Much of the empirical work documenting a significant presence of foreign interest rates in central bank policy rules started after the shift away from rule-like policy.

⁷John Cochrane notes that simply talking about policy shifts—whether interest rate changes or quantitative easing—may have the same effects.

The Solution

Basic monetary theory tells us that adherence to rules-based policy can prevent excessive capital flows and can allow each country to pursue its own domestic stability goals without disrupting the system. To see how this theory works and where it might go wrong, it helps to try to run through some simple scenarios. Consider a world in which exchange rates are flexible, capital is mobile, and each central bank sets its policy interest rate according to a rule. Interest rate differentials between countries can occur with capital flows bringing any differences into alignment with the expected percentage change in the exchange rate. Movements in real exchange rates affect imports and exports, and thus the trade balance and real GDP. Prices and wages are sticky so that changes in the policy interest rate in one country can affect output as well as the inflation rate in that country. Depreciations or appreciations in the exchange rate also affect inflation. Shocks can hit anywhere.

For concreteness, let the policy rule be one in which each central bank systematically increases the interest rate when inflation rises above a target or when real GDP falls below its estimated potential; similarly, the central bank systematically reduces the interest rate when inflation falls below target and real GDP rises above its estimated potential. Let the inflation target be set at 2 percent in all countries, and let the given real long-run policy interest rate be 2 percent. If this world were not subject to shocks, the global inflation rate would settle at the 2 percent target, the nominal policy interest rate at 4 percent, and real GDP at potential. The exchange rate would be stable.

Suppose now that—starting from this equilibrium—there is a price shock that raises inflation in one country above the target. This will cause the central bank in that country to take actions to raise the interest rate, and output will thus temporarily fall while the inflation rate declines back to its target. Eventually the effects of the shock will wear off.

What about the impacts abroad? The initial inflation shock will cause the inflation rate to rise abroad as the costs of imported inputs to production rise, but by a small amount according to most models with the effects of the inflation shock abroad mitigated by the initial central bank's stabilizing actions. So if foreign central banks follow their rules, they will raise their policy interest rates, but by a small amount, and there will be little effect on their economies.

However, with interest rate differentials rising, central banks abroad may fear an outflow of capital or a depreciation of their currency. They may decide to raise interest rates by a larger amount, getting closer to the rate increase of the initial central bank, and thereby deviate from the rule. This would be an example of the phenomenon of central banks following each other. However, if the first central bank is committed to the policy rule, the effect on interest rate differentials would be known to be quite temporary, reducing the need or incentive for other central banks to over-react. In effect, the commitment to the rule enables each foreign central bank to better commit to its own rule.⁸ In contrast, if the first central bank's policy is ad hoc or discretionary, the foreign central bank may fear a larger or longer capital outflow and even a downward spiral of the exchange rate, and thereby take more aggressive action. A greater adherence to rules-based policy by the first central bank will reduce the likelihood that the other central banks will follow, and thereby detract from their own performance. This reasoning suggests that the volatility of capital flows would diminish with a more rules-based policy: with the exchange rate expected to stabilize, there would be less reason to pull out of the currency in fear of a large depreciation.

These same arguments apply to other types of shocks. Suppose that there is a shock that lowers the inflation rate. In this case, the first response is to lower the policy interest rate below the starting point of 4 percent. After an adjustment period, this action brings the inflation rate back up to target. However, after a smaller rule-like interest rate response in the rest of the world, interest rates will now be higher abroad, generating concerns about capital inflows or exchange rate appreciation. There will be a tendency for central banks abroad to lower their interest rate further. But with a rules-based policy, this tendency will be mitigated by the knowledge that the capital outflows and exchange rate effects will be temporary.

There are many other types of shocks and policy scenarios that would require a full-blown monetary model to analyze. However, the general prediction that rule-like policy will mitigate excessive capital flows and unnecessary monetary spillovers is likely to be robust.

⁸Thus, the rule would have less reaction to exchange rate changes, but just as important, any such reaction will be more predictable.

There is empirical support for these predictions. Regarding exchange rates, empirical research by Eichengreen and Taylor (2003) found that “countries that target inflation,” a form of rules-based policy, “have significantly less volatile exchange rates.” Regarding capital flows, Vegh and Vuletin (2012) found that the adoption of rules-based inflation targeting had the effect in a number of emerging market countries of reducing large capital movements associated with “fear of free falling” exchange rates. And Coulibaly and Kempf (2010) show that inflation targeting rules reduce the pass-through of exchange rates to inflation. This further reduces the need for overreaction of policy due to concerns about exchange rate changes.

While the scenarios examined here apply to a particular policy rule, the arguments are likely to be robust to other types of policy rules examined over the years. Beckworth and Hendrickson (2015), for example, have examined interest rate rules where the central bank reacts to nominal GDP rather than to the inflation rate and GDP separately. They stress that such a rule has the advantage that the central bank does not have to estimate potential GDP, reflecting concerns raised by Orphanides (2003). Though more research is needed, I see no reason why the same types of arguments would not apply to this particular implementation of nominal GDP targeting or others suggested by Sumner (2014). Another recent example is due to Fagan, Lothian, and McNelis (2013), who examine two monetary policy rules in a model estimated over the classical Gold Standard period from 1879 to 1914. One policy rule has the monetary base following an auto-regression with the interest rate determined by the supply and demand for money. The other is an estimated interest rate rule. They find that inflation volatility decreases a lot while output and employment volatility decreases a little with the interest rate rule. Of course, the dynamic properties of rules are very important for policy evaluation, and it is necessary that the rules do well domestically if they are to contribute to a global rules-based system.

The Implementation

The implication of these results is that the international economy would be more stable if policymakers could create a more rules-based international monetary system. But how could such a system be implemented? One possibility would be to forge an international

agreement where each central bank would describe and commit to a monetary policy rule or strategy for setting the policy instruments. The strategy could include a specific inflation target, an estimate of the equilibrium interest rate, and a list of key variables to react to in certain specified ways. The process would not impinge on other countries' monetary strategies. It would be a flexible exchange rate system, though currency zones, like the eurozone, and their central banks could certainly be part of it.

Such an agreement would pose no threat to either the national or international independence of central banks. Each central bank would formulate and describe its strategy. Central banks participating in the process would not have a say in the strategies of other central banks, other than that the strategies be reported. And the strategies could be changed or deviated from if the world changed or if there was an emergency. A procedure for describing the change and the reasons for it would be in the agreement. It is possible that some central banks will include foreign interest rates in the list of variables to react to, but when they see other central banks not doing so, they will likely do less of it, recognizing the amplification effects.

The agreement would be completely global in principle, rather than for a small centralized or regional group of countries. As with the process that led to the Bretton Woods system, it could begin informally with a small group and then spread out. The rules-based commitments would reduce capital flow volatility and remove some of the reasons why central banks have followed each other in recent years.

A companion reform would set up rules for eventually removing capital controls. According to a recent classification of countries by Fernandez et al. (2015), 36 countries now have "open" capital accounts, but 48 are classified as "gate" countries and 16 as "wall" countries with varying degrees of capital controls. The reform could be phased in with a transition period, and should be accompanied by adequate enforcement of safety and soundness regulations on financial institutions.⁹ Though controversial, this reform is conceptually the same as the agreement by initial IMF members to remove exchange controls in 1944.

Implementing an international understanding and agreement along these lines may be less difficult than you think. Many have

⁹If prudential regulations were already in place, a gradualism phase-in may not be necessary.

called for reforms of the international monetary system, reflecting concerns about the instabilities, international policy spillovers, volatile capital flows, and poor economic performance. The Bank for International Settlements (BIS) has been researching the issues and Jaime Caruana, the general manager of the BIS, has promoted a reform. The approach suggested here may not be the be-all and end-all of such a reform, but it is supported by experience and research. It is attractive because each country can choose its own independent strategy and simultaneously contribute to global stability.

Some form of renormalization of monetary policy is needed first, but that could be phased in during a transition period. Goals and strategies for the instruments of policy to achieve the goals would come next. The major central banks now have explicit inflation goals, and many policymakers use policy rules that describe strategies for the policy instruments. Thus, explicit statements about policy goals and strategies to achieve these goals are feasible. That there is wide agreement that some form of international reform is needed would help move the implementation along.

The biggest hurdle to an agreement of this kind is disagreement about the problem and the solution. Some are not convinced of the importance of rules-based monetary policy; others may doubt that it would deal with the problems of volatile capital flows or policy following. Some believe that the competitive depreciations of recent years are simply part of a necessary process of world monetary policy easing.

In any case, a clear commitment by the Federal Reserve to move in this rules-based direction would help start the implementation process. Legislation to require that the Fed report its rules-based strategy—such as that which is now working its way through the U.S. House of Representatives and the U.S. Senate—would be a constructive part of the implementation effort.

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COMMITMENT, RULES, AND DISCRETION

Charles I. Plosser

The debate regarding rules versus discretion in the conduct of monetary policy is an old one dating back at least to Henry Simons (1936). His famous paper in the *Journal of Political Economy*, entitled “Rules versus Authorities in Monetary Policy” is a classic. Simons’s view stressed the importance of establishing the “rules of the game” as opposed to the “delegation of legislative powers,” that granted “authorities” to central banks. Today we would characterize authorities as discretionary powers in contrast to rules. He rightly struggled with these concepts and their implications for a free society in the classical liberal sense. His conclusion was that establishing rules of the game was clearly preferable and the lesser of two evils when it came to monetary policy.

The modern version of the debate surrounding rules versus discretion is best captured in the work of Finn Kydland and Edward Prescott (1977), again in the *Journal of Political Economy* and titled “Rules Rather than Discretion: The Inconsistency of Optimal Plans.” They showed that a regime that precommits policymakers to behave in a particular way is preferable to a regime that allows policymakers pure discretion—that is, to choose a policy independently at each point in time.

The idea is very counterintuitive to most people and particularly unappealing to many policymakers. After all, the policymaker could choose the same set of actions under discretion as he could

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under commitment. So it would seem that a discretionary policy can certainly be no worse than a policy that entails precommitment. Therefore, the argument goes, there is value in retaining “flexibility,” or as some monetary policymakers I know used to say, “optionality,” so that decisions can respond “appropriately” to current events. Thanks to Kydland and Prescott and others, we now know that this argument is flawed. The fatal flaw in this conventional wisdom stems from its failure to recognize the important role played by expectations of future policy in economic decisions made today.

Expectations, Commitment, and Discretion

Expectations of the future play a crucial role in all sorts of decisions. This is particularly evident in financial markets, where investment decisions and the valuation of securities depend importantly on assessments of future economic outcomes. But it is equally true for individuals buying a home or a car, and for businesses considering capital expenditures.

Before going further, it is useful to be a bit more precise and define what I mean by “commitment” and “discretion.” Commitment essentially means that policymakers deliver on past promises about future actions. Discretion, on the other hand, means the policymaker is not bound by previous actions or plans and thus is free to make an independent decision every period.

Discretion means the policymaker may find it preferable to change his or her mind, or re-optimize, and do something other than what was promised. The temptation to renege on previous promises or plans is what economists refer to as the time-inconsistency problem, and it has surprisingly troublesome consequences. In particular, it can mean that outcomes under a discretionary regime are likely to be worse than those under a regime where the policymaker is constrained to follow through on previous commitments.

To illustrate the issue, consider the case of patent protection. Research and development (R&D) by the private sector is an important source of innovation in our economy. From new drugs to computers, research has led to new products that have enhanced our health and productivity. Thus, investment in research generates important returns that contribute to the improvements in living standards both here and around the world.

To encourage such investment, governments often seek to ensure that private returns to innovation are sufficient to elicit the socially optimal amount of investment in new ideas. In practice, governments often give temporary monopoly rights to companies and individuals, in the form of a patent, as a means of assuring that the private inventor can earn a sufficient rate of return on what may be a very costly and risky research endeavor. In one sense this is assuring property rights to new inventions.

Suppose, however, that after the discovery, the discretionary policymaker decides to make the new product's design freely available to all. The result would be more competition and lower prices, making society better off. The policymaker thus reoptimizes to do the best thing at the time and reneges on past promises. We all know the problem of such a discretionary strategy—while achieving short-term benefits, it is likely to have devastating effects on future investments in research and inventive activity. Thus, removing the discretion of the policymaker to revoke the patent protection raises overall welfare. The expectations of future policies and behaviors have important implications for decisions today and, thus, future welfare.

Commitment, or the lack thereof, also has important implications for monetary policy. Just as firms' R&D decisions are affected by their expectations about the future of patent protection, many economic decisions are affected by their expectations about the future course or path of monetary policy. The stance of monetary policy is, after all, not simply the current level of the policy instrument, but includes its expected path over time. As a result, the central bank faces a time-inconsistency problem. That is, it will be tempted to pursue policies that deliver temporary economic benefits that may be inconsistent with longer-term goals. Realizing that the central bank will have the latitude, or discretion, to give in to this temptation, people will make decisions today that drive the economy to a suboptimal outcome.

Thus, in a wide range of cases, a policy governed by commitment dominates one of discretion. The challenge is: How do we get commitment? Are there institutional arrangements that would make it easier for policymakers to honor their commitments?

Looking back, societies have employed various means to try to pre-commit to a policy path and thereby produce better outcomes. None are perfect. Indeed, in a democratic society it is impossible to obtain

full commitment. Legislation is one mechanism for supporting commitment. But, of course, laws can and do change. Nonetheless, it can be difficult and costly to do so. So laws can and do enhance the credibility of a commitment as in Simons's rules of the game.

Institutional Design

More generally, institutional design can be a useful means to enhance commitment. Creating institutions that align the incentives of the policymaker to behave in a more rule-like or committed manner also can be helpful.

For example, at Cato's 2013 monetary conference, I gave a paper entitled, "A Limited Central Bank," which appeared in the *Cato Journal* (Plosser 2014). I argued that there were other ways to strengthen commitment and limit discretionary behaviors in a central bank. I suggested that designing an institution with a more limited purpose and fewer authorities can improve the ability of policymakers to both commit to future behaviors and be held accountable for the outcomes. In particular, I suggested designing the central bank with a more narrow mandate as a way to focus the activities of the policymakers. The narrow mandate also improves transparency and enables the public to hold the policymakers accountable. Broad and expansive mandates that are accompanied by broad authorities and powers invite discretion and shifting priorities. Along these lines, I also argued for limiting the range of assets that the central bank can purchase and thus the markets in which it is allowed to directly intervene. This also can help limit the scope for discretion and better align the authorities with the more narrow mandate.

A monetary regime that is based on the gold standard provides a form of commitment. In principle, there is very little room for discretionary monetary policy under a gold standard. Indeed, a metallic standard of some form has served as a form of standard and commitment on and off for centuries. Although, in the end, the system was far from perfect. Economic forces and the incentive of governments, politicians, to be discretionary, especially during wars, eventually led to the abandonment of the discipline of the gold standard. Nevertheless, it does illustrate that the importance of commitment is not a new one and how difficult it can be to sustain.

Many countries have adopted fixed exchange rate regimes as means to attain credibility and ensure commitment. Certainly, the

Bretton Woods system that eventually replaced the gold standard after World War II was a commitment device, although it, too, eventually broke down.

Some countries have chosen to peg their exchange rate to the dollar as a means of restricting the ability of their central bank to create inflation. Doing so, however, simply puts monetary policy in the hands of another country.

Other approaches to strengthen credibility and commitment include rule-based strategies. Rules are a means of limiting discretionary behavior by constraining policy choices. For example, Milton Friedman, who was highly critical of discretionary monetary policy-making, suggested adopting a rule that required constant growth of the money supply—the so-called *k*-percent rule (Friedman 1960).

More recently, rules have been developed that specify a feedback mechanism from, say, inflation and an output gap measure, for setting the funds rate. The most well-known version of such a rule is the one proposed by John Taylor. There are a number of variations of such feedback rules that have been proposed and investigated for their robustness properties. That is, do they perform well in different models? The general result is these simple rules often produce good results in a wide variety of models, which is quite encouraging. This is an important development because it means that complete agreement on a model is not necessary to adopt a rule that enhances credibility and is likely to work well over time, even as models are improved.

Rules also improve communication and reduce instability caused by surprise discretionary actions by the central bank. A rule, in essence, provides a reaction function that helps the public and markets understand how monetary policy will react to incoming data. It thus provides the right kind of forward guidance and reduces uncertainty and surprises when it comes to monetary policy. This then contributes to a more stable and efficient economy. Had the Fed been operating under a transparent, well-understood rule prior to the crisis, the efforts at forward guidance in the face of the zero lower bound might have proved to be more helpful rather than mostly confusing.

Many central banks around the world have adopted inflation targeting frameworks as a means to strengthen credibility and commitment. Under inflation targeting, the central bank announces a numerical target or target range for a specific inflation measure and

commits to keeping inflation in that range over a specified period. The Fed finally joined most of the other major central banks around the world in quantifying an inflation target in January 2012 after nearly two decades of debating the issue. Inflation targets are a step in the right direction, but are not very specific about the monetary policy strategy that will lead to that outcome. Thus, they allow a wide range of discretionary actions.

Monetary Policy Strategies

So where do we go from here. My discussion highlights the fact that full commitment is hard to attain in practice. Moreover, policy-makers are very reluctant to give up discretion. The attempt by the Federal Open Market Committee (FOMC) to make statements about the future path of policy recognizes the importance of expectations and a desire to influence them. But at the same time, the Committee tried to retain complete discretion to change its policy as circumstances change. But the Committee did not, and still does not, provide much guidance as to how that would be done. This tension between rules and commitment versus the desire to be discretionary has loomed large over the past several years and created significant challenges in communication and clarity of a monetary policy strategy.

However, that does not mean that progress cannot be made. There are people inside the Fed who value the importance of a more systematic approach to policy even if there is no agreement on the precise form that such a strategy might take. A more systematic strategy would make monetary policy more predictable, it would make communication easier, and it would improve transparency. In doing so, it would make the Fed more accountable.

Paul Volcker once said to me that Montagu Norman, the long-time Governor of the Bank of England (1920–44), once told him that a basic prescription for all central bankers should be, “Never explain and never apologize.” While I don’t know whether the quote or its attribution is accurate, I do know that the message is one that captures the attitude and practice of central bankers through much of the 20th century.

But as we know, times have changed. Transparency has replaced secrecy, and openness and communication have replaced mystery. While there are those who long for the mystique and thrilling days of

yesteryear and wish for a little more mystery and a little less openness, I don't think the clock can be turned back—nor should it be.

Indeed, I give a lot of credit to the Fed for its efforts to become more open and transparent, but I think the desire to maintain absolute discretion has seriously interfered with that agenda. It is very difficult to communicate clearly a monetary policy strategy, or to use forward guidance as part of that strategy, when the fundamental approach to policy is discretion. I would go so far as to argue that discretion is not a strategy but the absence of a strategy.

So how might the FOMC move to a more systematic way of articulating given that they are not yet ready to adopt a single rule? I think there is a path forward that is really quite simple, and, although far from perfect, puts monetary policy and the Fed on a better trajectory.

To move an entire institution from one that values discretion over commitment is challenging. One strategy is legislation. As I mentioned, I have proposed one such approach that creates a more narrow central bank with limited objectives and limited powers or authorities. In such a framework, I believe that a more systematic or rule-like approach to monetary policy is more likely to flourish. I believe the design of the institution is important, because it helps shape the incentives and activities of the policymakers.

Another legislative approach is to mandate a rule or policy strategy that policymakers must pursue. This approach, too, has its merits and is closely aligned with proposed legislation in the House. The disadvantage, from my perspective, of this legislation is that it gets Congress deeply involved in the technical aspects of monetary policy and invites greater politicization of monetary policy choices. I am not convinced at this point that as a society it would be the best way to proceed. I would prefer an approach that focuses on the limits of the institution's goals and objectives and its authorities rather than on micromanaging the tactical arrangements and policy prescriptions. More generally, I am concerned that any legislative approach in the current environment would lead to compromises that are likely to lead to less independence and greater politicization of the Fed and monetary policy. I do not think this is wise.

My suggestion, which requires no legislative action, and the risks it entails, is for the Fed to take the initiative and implement a shift toward a more systematic monetary policy strategy. It has the authority to do so if it chooses.

The approach is quite simple, is mostly in place, and one I have stressed before. As I mentioned, there are many within the Fed that understand and value the importance of a more systematic implementation of policy. This is evidenced by the fact that the staff regularly calculates the implications of various robust rules and reports on them to the FOMC. The basic model used by the Fed, affectionately known as FRB/US, incorporates and relies, to a great extent, on rule-like behavior for monetary policy. This work provides a good starting point to move forward.

The FOMC could begin to reshape its policy communication in a way that emphasizes the usefulness of these various rules in the formulation of policy. Publishing the outcomes and implications of the various rules on a timely basis as part of a quarterly monetary policy report would be an important step forward. More useful would be for the Committee to discuss its policy choices in the context of such guideposts provided by the rules. At times, these rules may give a wide range of options. If so, that leaves some latitude for the Committee to exercise judgment and discretion as to the best policy choice. But such an approach would require, almost demand, the Committee explain why its decision differs from the guideposts. This practice would improve the communication and transparency of the monetary policy strategy at work.

I believe that this approach could accomplish several desirable objectives. First, it would force the Committee to directly confront the implication of the rules and to justify its policy choices should it choose to significantly deviate from the guideposts. Second, such a process would change the nature of the discussion by the Committee in important ways and place the rules and their implications front and center. So while this suggestion does impose a single rule on the FOMC, it does help discipline the discussion and thought processes in ways that are likely to help promote a more systematic approach to policy.

Conclusion

There is a strong case to be made that a monetary policy regime that demonstrates a high degree of commitment would lead to better economic outcomes. However, perfect commitment by policymakers is almost impossible to achieve in a democratic society. Rule-based policy is one useful mechanism to enhance the

credibility of commitment, but it is not perfect. The Fed could improve commitment and communication through a more transparent public discussion of robust rules rather than simply rejecting any role for rules in its approach to decision making. Indeed, policymakers should and could take a more proactive approach. Doing so would be a step in the right direction, head off, perhaps, even worse legislation, and enhance communication and the public's understanding of its monetary policy strategy.

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WHAT MONETARY POLICY CAN DO

Jeffrey M. Lacker

Thank you for the opportunity to participate in this discussion on monetary policy and what it can and can't do. In thinking about this topic, it occurred to me that one side of the question—what it can't do—generates a very long list. So for today's discussion, I intend to focus on the positive and discuss the one thing that I think we should be pretty certain monetary policy can indeed do, and that is to determine the long-run path of the price level. Recent experience has caused some to question whether monetary policy's ability to achieve even this modest goal has diminished or been lost in the years since the Great Recession. I will argue that a central bank's ability to influence inflation and how it does so is essentially unchanged. I also believe that monetary policy's ability to affect inflation is essentially independent of its effects on real economic activity, which I view as limited and temporary. My view of what monetary policy can do is based on the (perhaps old-fashioned) idea that money creation is at the heart of price level determination.

A Basic Framework

I take as my starting point that monetary policy is uniquely capable of affecting the price level over the longer term. Indeed, in the

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benchmark classical (or neoclassical) economic model without some form of friction—in which money is neutral—the price level is *all* that monetary policy will affect. The price level, after all, is simply the rate of exchange between money and goods. So the quantity of money must be related to how much of the latter each unit can buy. How to match the quantity of money in a theoretical model to a particular empirical measure of money is not always straightforward. But the ability of monetary policy to affect the price level, or the rate of inflation, over time is a natural starting point and one that is embedded in the Federal Open Market Committee's statement concerning its long-term goals (Board of Governors 2012/2015).

In contrast, monetary policy's ability to affect real economic activity—when monetary policy is being reasonably well-executed—can be quite limited and is almost always short lived (Friedman 1968). Real activity is driven predominantly by factors beyond the control of monetary policy—productivity and population growth, for example. In the standard models used in policy analysis, monetary policy's real effects generally derive from frictions that impede the rapid adjustment of the overall level of the price. Such frictions are, almost always, short-run phenomena that generate transitory deviations in real activity, and their empirical significance is a matter of ongoing research and debate. It is true that egregious monetary policy errors can seriously damage the economy—for instance, by adding extraneous volatility and reducing the informativeness of relative price signals. But in typical circumstances, monetary policy that successfully stabilizes inflation and inflation expectations will have only modest, temporary effects on real activity.

The mechanism through which monetary policy has its ultimate effect on the price level is through the process of money creation—that is, the process by which central bank actions affect the distinct forms of money, such as bank deposits, that people use in transactions for goods and services. It is more common these days to think of monetary policy as setting an interest rate target, rather than a money supply, in part because money demand seems to fluctuate significantly (Goodfriend 1991). Nonetheless, prior to 2008, the Fed achieved its target for the federal funds rate—the price of overnight loan of reserves—by manipulating the supply of bank reserves. Reductions in the Fed's interest rate target necessitated increases in the supply of bank reserves. The resulting money creation—by the

central bank and the private banking system—in turn drives price-level determination.

If frictions in goods or financial markets impede price adjustment, then monetary policy may temporarily affect real economic activity along with the price level. In particular, a low interest rate policy will tend to stimulate real activity for a time. These effects can give rise to an empirical correlation between the observed behavior of inflation and real economic activity. Such correlations are often referred to as the Phillips curve relationship—resource utilization or real activity positively correlated with inflation.

It is important to note, however, that the standard framework for understanding monetary policy transmission is inconsistent with a popular interpretation of the Phillips curve, which is that a low interest rate raises inflation *because* the stimulation of real activity puts upward pressure on (real) resource costs. For example, one sometimes hears that high rates of resource utilization lead to rising inflation. Or that an empirical breakdown in the Phillips curve relationship makes it harder for the Fed to bring inflation back toward our 2 percent objective.

This reasoning is fundamentally flawed. Monetary policy does not affect inflation *through* its effect on real activity. Monetary policy affects inflation and real activity simultaneously. If the relevant frictions are minimal, so that monetary policy has little effect on real activity, inflation is *still* driven directly by monetary policy. So a weak Phillips curve relationship does *not* imply that monetary policy has any less influence over inflation.

Recent Experience

Reconciling the behavior of monetary measures with the behavior of inflation has been more difficult since the crisis. The dramatic increase in the Fed's monetary liabilities after 2008—from just under \$1 trillion to over \$4 trillion now—has led to dire warnings from some critics that surging inflation was imminent. That hasn't happened. Inflation has not only failed to rise, but has been persistently low relative to the FOMC's stated goal of 2 percent. The last reading of 2 percent or greater for the 12-month change in the personal consumption price index was in April 2012, and since 2013, the core index has fluctuated between 1.2 and 1.6 percent.

In fact, some argue that the zero lower bound on interest rates has been interfering with the Fed's ability to keep inflation from falling. This is based on the idea, widely attributed to Swedish economist Knut Wicksell, that keeping inflation close to our objective requires that the real short-term interest rate should track the economy's underlying "natural" real rate of interest (Woodford 2003, Wicksell 1936). Because the Fed's nominal interest rate target has been constrained by zero, policy might be disinflationary if the natural real rate has fallen significantly.

This hypothesis is more difficult to assess, because the natural real interest rate is not directly observable, and so independent measurements naturally depend on auxiliary assumptions and theories. At this point, there is a fair amount of uncertainty around common estimates, but most estimates of the natural rate of interest in the United States have clustered at or just above zero, well above the actual real funds rate, which has been running below negative 1 (Lubik and Matthes 2015, Laubach and Williams 2003). So at this point, a Wicksellian perspective does not suggest that the zero lower bound is impeding the Fed's ability to attain its 2 percent inflation objective. In fact, this perspective bolsters the case for raising the federal funds rate target now.

Moreover, the actual behavior of inflation in recent years does not warrant such pessimism. Statistically speaking, inflation appears to have some slow-moving components, which allow it to stray sometimes for extended periods from its longer-run trend. In other words, inflation does not seem to behave as if each year's result is a roll of the dice, unconnected from last year's experience. Given the historical behavior of inflation in recent decades—a period of time when the Fed is widely considered to have achieved stability of inflation and inflation expectations—an extended, one-sided deviation like the one we are currently experiencing turns out to be not unlikely (Hornstein, Johnson, and Rhodes 2015). So I don't think the recent behavior of inflation implies a more permanent departure from our target.

The persistent part of inflation has been modeled by some as a random walk component, which would seem to imply a process that is not well-anchored in the long run by the central bank's objective. That is, it would seem to imply that inflation can drift permanently away from the central bank's objective. But this specification is hard to distinguish statistically from one in which inflation does move, perhaps slowly, toward a better anchored long-run expectation (Faust and Leeper 2015, Faust and Wright 2013). While a description like

this pins down the longer-run behavior of inflation, it leaves inflation at higher frequencies to move around, perhaps in response to a variety of relative price shocks.

With this statistical behavior, monetary policy's ability to control inflation rests, in part, on its ability to stabilize longer-run inflation expectations. The Fed established credibility for long-term inflation, in the sense of stabilizing expectations, in the 1990s—the culmination of a process that began with the Volcker disinflation in the early 1980s. And our available measures suggest that expectations have remained well-anchored for most of the period since the recession.

While it is conceivable that the central bank could anchor expectations and the long-run behavior of inflation simply by stating a goal, it is more likely that the credibility of the goal depends on the public's belief that the central bank has and will use the tools necessary to make inflation return to its goal, should that become necessary. So we should look again to the mechanism through which central bank actions affect money creation and ultimately the price level, taking into account how the monetary policy toolkit has changed since the financial crisis.

The New Monetary Policy Environment

The second reason I am not pessimistic about the ability of monetary policy to ultimately control inflation has to do with the mechanics of monetary policy. Allow me to explain. In the standard model, monetary policy operations were premised on the actual arrangements in place prior to the financial crisis. The Federal Reserve controlled the quantity of its monetary liabilities, consisting of currency and bank reserves. Both were noninterest bearing. The quantity demanded for each was a downward-sloping function of the short-term nominal interest rate. The Federal Reserve controlled the overall supply of its liabilities through open market operations in order to achieve a target level for the short-term interest rate, set by the Federal Open Market Committee. To lower rates, for example, the supply of monetary liabilities would be increased, making bank reserves less scarce.

This picture changed as a result of the crisis. Reserve account balances now earn explicit interest at a rate set by the Federal Reserve, and, as I noted earlier, the supply of bank reserves has increased dramatically. So the mechanics of monetary policy are necessarily different from what they were in the decades before the Great Recession.

Some economists have argued that in the current regime, bank reserves are perfect substitutes for short-term Treasury securities, and that as a result, monetary policy may be relatively impotent (Cochrane 2014). Open market purchases of U.S. Treasury securities are just exchanges of one liquid government liability for another. Financial institutions will simply hold fewer Treasury securities and more bank reserves, leaving economic activity unaffected.

This neglects a key characteristic of bank reserves, however. While Treasury securities can be held by any financial entity, bank reserves can only be held by banks.¹ The banking system can shed other assets in order to accommodate larger reserve account balances, but there is an upper limit to this process. At some point, banks would have to raise more capital in order to accommodate higher reserve account balances. This would force broader changes in portfolios that would inevitably affect economic outcomes, including the price level.

Richmond Fed economist Huberto Ennis (2014) has provided an explicit model that captures this logic. The intuition is that when the quantity of bank reserves is small enough and interest rates are above the interest rate the central bank pays on excess reserves, then price level determination works the usual way. When the quantity of bank reserves is large enough, bank balance sheets are forced to adjust, and again, the quantity of central bank liabilities directly affects the price level. In between, however, there is a broad zone in which the quantity of bank reserves can vary without affecting the price level.

This basic story seems consistent with the difficulty of finding conclusive evidence of economic effects from the Fed's large-scale asset purchases. It seems plausible that successive rounds of quantitative easing have had little or no tangible effect, apart from signaling regarding the FOMC's outlook for future economic growth and policy settings. At the same time, this framework implies that large enough asset purchases would compel changes in bank balance sheets that would in turn affect economic outcomes. This analysis bolsters my confidence that the intuition of the standard approach remains relevant and monetary policy still has the capacity to determine inflation and the price level over time.

¹Basically, only depository institutions, government agencies, and government-sponsored enterprises can hold accounts at Federal Reserve banks.

Conclusion

Therefore, I continue to hold the view, as expressed in the FOMC's statement of long-term goals, that monetary policy has the unique ability to determine inflation over time. That ability is independent of whether or not there is a reliable Phillips curve correlation. Moreover, it remains true in a world with interest on reserves and large bank reserve account balances. The effect of monetary policy on real activity, on the other hand, is likely to be transitory, which suggests caution in trying to use monetary policy to have significant real effects over the medium term. Even more caution should apply, given the state of our understanding, to the notion that monetary policy should respond to signals of incipient financial instability, an idea that has received considerable attention since the crisis. Conducting monetary policy to achieve low and stable inflation over time, without doing damage to real activity, is hard enough.

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THE POWERS AND LIMITS OF MONETARY POLICY

Manuel Sánchez

Monetary policy is powerful when focused on what it can clearly accomplish. But negative consequences can occur when it takes on ancillary objectives. Some of its capabilities are well known, while others are still in the process of being properly understood. Hence, addressing the question of what it can and cannot do should be approached with modesty.

I would like to present my views on this issue by first discussing positive impacts expected from monetary policy. Second, I would like to examine potential negative effects. Third, I will touch on the need for time consistency to make policy reliable. Fourth, I will briefly discuss monetary challenges faced by emerging economies in the current context of the extraordinarily accommodative monetary stances of advanced nations. And finally, I will draw some conclusions.

What Positive Impacts Can Monetary Policy Have?

The most indisputable contribution monetary policy can make to the well-being of any society is price stability. As succinctly stated by

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Milton Friedman (1963), “Inflation is always and everywhere a monetary phenomenon”; hence, monetary policy can control it.¹

The benefits of price stability are well known. It provides a favorable framework for efficiency and economic growth. High inflation, on the other hand, breeds wasted resources, and, when unexpected, can generate consumption and investment errors. It can even fuel a loss of confidence in a country’s currency.

The widespread acceptance of monetary policy to control persistent changes in the average level of prices has led central banks to establish price stability as their primary objective. In practice, central banks understand this as a minimum inflation rate, say 2 or 3 percent, consistent with factors such as innovations and consumer responses to relative price changes not properly accounted for by traditional price indexes.

In light of this definition, pursuing price stability may encompass averting the risk of deflation, a fear recently manifested by several monetary authorities in advanced nations. Regarding deflation, the following four comments are in order.

First, some deflation can theoretically be justified in terms of economic welfare. Friedman (1969) advanced the argument that one way the economy can achieve the long-run optimum quantity of money is with a rate of deflation that makes the nominal rate of interest equal to zero. Another way would be to pay interest on money balances.

Second, large time series data reveal that there is no clear negative relationship between deflation and economic growth across countries. Furthermore, in the postwar period, bouts of deflation have been milder and less persistent than before, with average growth during deflation years exceeding that of inflation years (see Borio et al. 2015, Ryska 2014).

Third, recent low inflation largely resulting from declining commodity prices, notably energy, has sparked deflation scares in several developed countries. However, these risks should be properly assessed. Falling inflation stemming from reductions in relative prices, while beneficial to consumers, may not persist, given that some of the causes behind them are necessarily transitory, such as overinvestment in the energy industry.

¹For a recent examination of the long-run relation between money and prices, see Lucas (2014).

Fourth, as with the fight against inflation, monetary policy is well equipped to forestall unwelcome deflation. The historical international record of the ends of episodes of deflation proves this to be the case.²

The existence of a zero lower bound (ZLB) for policy interest rates in environments seen to be flirting with deflation has long inspired economists to conduct research. Approaches taken have engendered controversy over the power of monetary policy at the ZLB. However, recent large-scale asset purchases undertaken by central banks in advanced countries confirm that the possibilities for monetary policy do not end at the ZLB.³

Finally, under emergency conditions of financial market distress, central banks may perform the role of lenders of last resort. One example can be found in the extraordinary actions of the U.S. Federal Reserve during 2008. Provision of needed liquidity helps restore normal market conditions. This should always be done at a penalty rate and against sufficient collateral, following the advice of Bagehot ([1873] 1999), and as a temporary measure, to avoid moral hazard.

What Positives Is Monetary Policy Less Certain to Achieve?

While there is broad consensus on the ability of monetary policy to control inflation over time, there is less agreement on other goals it could pursue. One tendency, accentuated in the wake of the financial crisis of 2008–09, is to assign additional objectives to monetary policy.

Two goals stand out. One is the long-standing aim to boost economic activity. It is widely accepted that long-term growth depends on real factors such as investment in both physical and human capital, as well as total factor productivity. Their behavior over the long haul is independent of monetary policy, and hence, the long-term neutrality of money should hold.

Where the short term is concerned, there is controversy over the capacity of monetary policy to stimulate the economy. Under

²An analysis of the role of monetary policy in exiting deflation can be found in Bordo and Filardo (2005). To review the Japanese experience with deflation, see Ito and Mishkin (2006).

³For monetary possibilities at the ZLB, see Goodfriend (2000).

conditions of full employment, completely anticipated expansionary monetary policies are expected to produce inflation. Rational expectations models incorporating frictions such as imperfect information or price rigidities have been used to replicate short-run tradeoffs between inflation and unemployment. However, given the long and variable lags with which monetary policy acts, attempts to exploit those tradeoffs can result in output instability. International experience with high and volatile inflation during the 1970s and 1980s illustrates this danger.⁴

Under the shadow of the global crisis, many developed countries have held extremely loose monetary policies for a prolonged period of time. This has been possible, apparently, thanks to the relative stability of long-term inflation expectations. Some studies suggest that extraordinary accommodation has supported economic activity, although the degree to which this has happened is still subject to debate. Meanwhile, negative side effects may be accumulating.⁵

Another goal, which in recent years has gained prominence, is to request that monetary policy safeguard financial stability. Although financial instability is a somewhat ambiguous notion, it is generally referred to as a situation in which financial markets exhibit dislocations to the extent that their functioning is impaired, with adverse impacts on economic activity.⁶

Aside from fulfillment of the central bank's role as lender of last resort, the best monetary policy can do for financial stability is to avoid becoming a source of problems, notably, by deviating from the primary goal of price stability. For example, monetary policy can react preemptively to aggregate demand pressures that may endanger the inflation target. As a beneficial byproduct, this measure may contribute to the maintenance of financial stability by indirectly attenuating incentives for financial excesses.

Even though monetary policy may thus aid financial stability, it can hardly take the task on as an objective in itself. To begin with, such a goal cannot be translated into an unambiguous quantifiable target. Hence, the evaluation of its attainment is cumbersome.

⁴For a discussion of the stop-and-go period prior to price stabilization in the United States, see, for example, Goodfriend (2005).

⁵Martin and Milas (2012) assess the debate regarding the effect of current monetary accommodation on economic activity.

⁶A description of financial stability can be found in Tucker (2011).

Perhaps more importantly, if pursuing financial stability is meant to include identifying potential asset price bubbles, leaning against them, and trying to prick them, this may be close to an impossible task. One essential characteristic of bubbles that leads to crises is that they do not obviously look like bubbles until they implode.

The authorities have no comparative advantage in identifying financial bubbles. But even if they did have a crystal ball to tell bubbles apart from healthy growth, monetary instruments may be ill suited to the purpose. For example, higher interest rates in an emerging economy meant to deflate a bubble fed by substantial capital inflows may actually exacerbate the problem by attracting more flows.

Therefore, financial stability should be regarded as a separate objective to be tackled with nonmonetary tools. The first line of attack to reduce financial systemic risk should be to maintain a sound regulatory and supervisory framework, which includes strict capitalization and liquidity rules as well as clear resolution schemes for financial institutions.

In short, the biggest risk with additional goals, as Friedman (1968) warned almost 50 years ago, is that monetary policy may end up not accomplishing what it is most suited to do in the pursuit of what it is less suited to do.

What Negative Impacts Can Monetary Policy Produce?

As with other policies, monetary actions can produce negative effects. Although in some cases, these may be unintended, in others, likely costs are taken on because they are assumed to be outweighed by expected benefits.

A leading traumatic case occurred during the Great Depression in which the U.S. Federal Reserve did not meet an increased demand for liquidity and allowed a contraction in the money supply, resulting in widespread deflation, worsened financial panic, and plummeting economic activity. More often than not, in many economies, excessive monetary expansion has led to periods of significant inflation.

Additionally, monetary policy that is too easy may be a cause of financial problems. Specifically, it can trigger the search for yield and the undertaking of too much risk. For instance, a loose stance may have contributed to the run-up of the U.S. credit and housing

bubbles prior to the big financial crisis. Debate over the importance of this element, relative to other policies, continues to this day.⁷

Furthermore, the increasingly extraordinary monetary accommodation in advanced countries since the global turmoil, which has included massive asset purchases for a long time and, in some cases, negative policy interest rates, may be engendering financial imbalances, not only in these economies but also in other nations.

Other negative impacts may include the undertaking of quasi-fiscal operations blurring the independence of monetary policy, incentives for governments to postpone needed fiscal and structural adjustments, fewer motives for business to improve efficiency and distorted resource allocation, questionable income redistribution, and future difficulties controlling inflation (see Forbes 2015).

Some of these costs may take time to become evident, thus allowing expansionary monetary policies to claim principally benefits. However, should significant problems arise, policy could lose credibility. An objective evaluation of causes of any possible negative effects will by necessity take time.

The Need for Time Consistency

Given its capabilities and bounds, it is desirable for monetary policy to focus on price stability. Effectiveness hinges on the authorities' commitment to this goal. In addition, the strategy must be well understood by the public. Complexities are inherent in this endeavor.

One is political pressure or principal-agent problems that call for deviation from the price stability target. For instance, resistance to interest rate hikes is far stronger than to cuts, and it may sometimes come from interest groups with high stakes in the matter.

Another complication might stem from the existence of more than one goal, which may make the rationale for monetary policy decisions hard to convey. One more may come from the lack of clarity regarding the way policymakers react to available information.

As a consequence, monetary policy can easily be time inconsistent. This and dependence on high-frequency data can force economic agents to spend a great deal of time and resources second-guessing monetary policy actions.

⁷For an evaluation of the debate regarding the role of lax monetary policy in the run-up to the global financial crisis, see, for example, Cesa-Bianchi and Rebucci (2015).

One way to facilitate coherence and clarity is for central banks to express long-term guidance for their future actions in a form that may approximate a policy rule. There is evidence that periods when monetary policy is rule-like largely coincide with good economic performance (see Nikolsko-Rzhevskyy et al. 2014).

This should not be interpreted as using a rigid, mechanical rule for monetary policy, but a way to make it systematic and predictable. With long-term guidance, specifics are secondary as long as they lead to the goal and policymakers follow through. Deviations from strategy under extraordinary circumstances can be clarified when they are warranted.⁸

Challenges for Emerging Economies

Emerging economies confront their own challenges for appropriately conducting monetary policy. On the one hand, these countries need to control inflation, especially in light of long histories of significant price instability. During the postwar period, developing economies have commonly lagged advanced countries in these efforts, frequently because of fiscal dominance. To this day, some countries still suffer from high inflation and struggle to control it, within relatively weak macroeconomic policy frameworks, especially in matters related to fiscal discipline.

On the other hand, emerging-market authorities have always had to consider the decisions of major central banks and the effects on their economies. In the present context, loose monetary stances in advanced nations may have triggered spillover effects on emerging economies via capital flows, including ample foreign-currency (FX) lending, and rises in financial asset prices. Expectations for the unwinding of lax policies have started to turn the tables on these impacts, as reflected by a weakening trend for emerging market currencies, among other tendencies (see Chen et al. 2015).

In the attempt to moderate these effects, many financial authorities have responded with measures frequently justified as macroprudential policies. In particular, initially, many central banks cut policy rates. In fact, there is evidence that in recent years monetary policy in emerging economies has tended to become looser than what

⁸This idea has been put forward by John B. Taylor. See, for example, Taylor (2015).

would have been granted by their own price stability mandates. Many economies also implemented FX intervention to accumulate international reserves, while some added capital flow restrictions (see Hofmann and Bogdanova 2012, Pasricha et al. 2015).

Recently, several countries have reversed these measures. Barriers to capital flows have been relaxed and international reserves have been used, while monetary policy has frequently remained accommodative, potentially implying contradictory policy directions. In some cases, however, monetary stances have begun to be tightened. A concern in some emerging economies is high pass-through from currency depreciation to inflation.

Trying to counteract external monetary policy effects may have resulted in some costs to central banks in emerging markets. These may include possible moral hazard from investors' expectations of being protected from losses in risk positions, increased uncertainty regarding policy measures, as well as damaged progress toward the attainment of price stability.

In fact, in some cases, it has become clear that imbalances have largely resulted from misguided domestic policies, such as excessively stimulative fiscal and financial measures. Thus, blaming problems on foreign countries' lax monetary stances may have distracted countries from correcting internal fragilities in a timely way.

A challenge in the current global scenario is for central banks to pursue price stability in the face of upcoming monetary normalization in the United States, while at the same time taking into consideration possible spillovers to the extent that they may have some bearing on achievement of their inflation targets.

Conclusion

The recent global financial crisis has generated increasing demands on monetary policy. The top risk of overburdening monetary policy with possibly incompatible objectives is diminished credibility. Hence, setting realistic expectations of what it can and cannot do is all the more important.

The greatest contribution monetary policy can make to society is price stability. Given the long-term neutrality of money, any attempt to use it to boost growth is by nature limited. With respect to financial stability, the best monetary policy can do is to avoid provoking problems, notably, by neglecting inflation control.

Monetary policy can obviously engender adverse impacts. Some may take time to surface. But if significant problems arise, policy can lose effectiveness. Furthermore, monetary policy can be time-inconsistent, and to avoid difficulties from this issue, the intentions of decision makers must be transparent. An explicit long-term strategy goes a long way to facilitate coherence and clarity.

Emerging economies confront specific challenges in the wise use of monetary policy. Many of these countries have histories of high inflation and are struggling to leave it behind. Also, they must act within the world scenario in such a way that they do not deviate from the objective of price stability.

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REAL AND PSEUDO MONETARY RULES

George Selgin

Milton Friedman is perhaps the best-known exponent of monetary rules. He also wrote a well-known paper entitled “Real and Pseudo Gold Standards” (Friedman 1961). I wish here to pay twofold homage to Friedman by insisting on a distinction between real and pseudo monetary rules. Just as Friedman (1961: 67) maintained that, though they may “have many surface features in common,” real and pseudo gold standards “are at bottom fundamentally different,” I shall argue that despite their superficial resemblance, real and pseudo monetary rules are fundamentally different—both in their operation and their consequences. Indeed, I shall argue that what Friedman called a “pseudo gold standard” is really an instance of a pseudo monetary rule, while what he calls a “real gold standard” is an instance of a real monetary rule.

Real Monetary Rules

A monetary rule, as typically defined, encompasses two very different sets of possibilities. For example, Froyen and Guender (2012: 101) define a monetary rule as “a prescribed guide for the conduct of monetary policy.” That broad definition includes both what I consider rules in the strict sense of the term—what I shall call “real monetary rules”—and rules in a much looser sense, which I consider to be “pseudo monetary rules.”

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To understand the difference between a real and a pseudo monetary rule, as well as my reason for insisting on these terms, one must briefly review the traditional arguments for monetary rules. The essence of these arguments is succinctly stated by Leitzel (2003: 50), who notes that while “discretion allows decisions to respond more closely to actual conditions . . . in the hands of a fallible or corrupt decision maker, a greater reliance on judgment may not be such a good idea.”

Jacob Viner (1962: 246) gives a more detailed summary:

On purely a priori grounds . . . it can be said for an unambiguous rule, *provided it is enforceable and enforced*, that it is a complete protection within the immediate area of its subject matter against arbitrary, malicious, stupid, clumsy, or other manipulation of that subject matter by an ‘authority.’ It can be said *for a rule rigid through time, if it works and is counted on to work*, that it provides absolute certainty and predictability, with respect to the behavior prescribed by the rule [emphasis added].

A once popular and still occasionally heard objection to monetary rules is that discretion-wielding authority can almost always do better, since the authority can always reproduce the outcome of the rule yet can also respond to circumstances that the rule doesn’t provide for. As Turnovsky (1977: 331) puts it, except when a rule happens to coincide with an optimal response, “a judiciously chosen discretionary policy will always be superior.” In other words, a discretionary policy need never do worse than a rule, and it might do better.

Such arguments entirely miss the point. There are, first of all, several reasons why discretionary policy may in practice not be “judiciously chosen,” in Turnovsky’s sense of being an optimal response to the current state of the economy. The first, which O’Driscoll (2016) elaborates on in his contribution to this volume, is that the authorities may lack the knowledge required to employ discretion “judiciously.” The essential point was best expressed by Friedman (1960: 93):

We seldom in fact know which way the economic wind is blowing until several months after the event, yet to be

effective, we need to know which way the wind is going to be blowing when the measures we take now will be effective, itself a variable date that may be a half year or a year or two years from now. Leaning today against next year's wind is hardly an easy task in the present state of meteorology.

Friedman is of course referring to “long and variable lags.” His argument hinges on the fact that monetary authorities, being incapable of anticipating such lags with any degree of precision, can be guilty of errors of commission more serious than the errors of omission to which a well-chosen rule might commit them. The more recent findings of behavioral economics tend to reinforce the knowledge-based case for rules. Adam Gurri (2013) sums up those findings pithily: “The fact is that the matter of human beings using their discretion repeatedly in circumstances of high uncertainty has already been settled—they are terrible at it.”

The insights of behavioral economists refer only to what one might call the “best-case scenario”—namely, the “well-intentioned, wise, and skillful exercise of discretionary authority,” as Viner (1962: 247) put it. The case for rules offered by public-choice theorists, in contrast, views discretionary behavior as a worst-case setting (see Buchanan and Brennan 2008), in which the “natural proclivities” of politicians and bureaucrats predominate—including their tendency to make decisions based on a “narrowly defined self-interest” that “run[s] counter to the basic desires of the citizenry” (Brown 1982: 39).

A final, and especially subtle, argument for a monetary rule is that it can serve to avoid the suboptimal, “time-inconsistent” equilibria to which discretionary monetary regimes are prone. For example, suppose that a zero inflation regime is considered optimal, but that, where such a regime is in place and expected to remain so, a discretionary central banker would be tempted to take advantage of the fact by increasing the money stock so as to *temporarily* boost employment and output. The fact that the monetary authority will be tempted to do so means the public will anticipate inflation; thus, inflation surprises won't have any real impact. Consequently, the discretionary equilibrium is suboptimal. By tying the authority's hands, a zero inflation monetary rule can

achieve an optimal outcome that could not be achieved otherwise (White 1999: 204–5).

It seems obvious that a genuine or real monetary rule must be capable of accomplishing the things that monetary rules are supposed to accomplish. Yet, it is no less obvious that most “prescribed guides for the conduct of monetary policy” fail to meet that requirement. As Jacob Viner (1962: 247) observed, “A rule doubtfully or irregularly enforced, and a rule subject at any time to revision, may involve less certainty and predictability than a control operated by a discretionary authority which follows a known set of principles.” Such a rule may also involve more sheer error, causing more rather than less economic instability.

It follows that a real monetary rule, as opposed to a mere guide for policy, must be both strict and robust. By “strict” I mean that it must be rigorously enforced so that the public is convinced there will be no deviations from the rule. As Mullineaux (1985: 14) notes, “The monetary authority . . . *must* do what the rule says and not something else.” By “robust” I mean that the rule must be capable of perpetuating itself, by not giving either politicians or the public reason to regret its strict enforcement and to call either for its revision or its abandonment in favor of discretion.

Pseudo Monetary Rules

A pseudo monetary rule is one that is either not well enforced or not expected to last. Although real monetary rules have existed in the past, such rules are almost unknown today. In contrast, pseudo monetary rules are perhaps even more common than avowed monetary discretion.

To distinguish real from pseudo monetary rules, one must recognize the difference between a rule that is merely *implemented* and one that is *enforced*. Kenneth Rogoff (1986: 1) identifies three “institutional devices for implementing monetary policy rules”—namely, a constitutional amendment, an independent monetary authority, and an arrangement in which reputational considerations encourage abiding by the rule. In fact, of these three devices, only the first is capable of providing for anything like the strict enforcement that a real monetary rule requires. The other devices, in contrast, can serve only as the basis for pseudo monetary rules, for none offers any reliable assurance that a

“prescribed guide for the conduct of monetary policy” will actually be heeded.¹

As I have noted, the distinction between a real and a pseudo monetary rule matters, because a pseudo monetary rule—that is, a monetary policy “guide” that can easily be evaded, or that is likely to invite calls for revision if strictly enforced—lacks the advantages of a real rule. As Leitzel (2003: 51) has observed, “Evasion of the rule (or, relatedly, the possibility of varying the enforcement of the rule) lessens the distinctions between the alternatives. . . . When those who are governed by the rules have the power to enforce or amend or avoid the rules, resistance [to the temptation to take advantage of this] cannot be purchased cheaply.” A pseudo rule is as likely as discretion to turn monetary policy into a plaything of politics: the main difference being that lobbying efforts, instead of being directed toward the authorities themselves, are directed toward the rulemakers.

Although the “Fed Oversight Reform and Modernization Act” (H.R. 3189, U.S. Congress 2015) is widely understood to call for the implementation of a genuine monetary rule, and it has been denounced for that reason by its critics, it would, if passed, establish a very weak sort of pseudo monetary rule. The Act calls for the Federal Open Market Committee (FOMC) to adopt a “directive policy rule,” but allows the FOMC to specify in advance circumstances under which it might amend that rule.

The Act also includes a “changing market conditions” clause, allowing the FOMC to abandon its directive policy rule if it determines that the rule “cannot or should not be achieved due to changing market conditions.” In that case, the FOMC would have to submit a report explaining its decision, together with an

¹Rogoff (1986: 1) writes: “The main problem with passing a constitutional amendment to govern monetary policy is the lack of flexibility in dealing with unforeseen events. In principle, of course, a law can be made fully state-contingent. But it is unrealistic to think that the designers of a law will have the imagination to plan for every type of shock and the analytical brilliance to guess how to deal with shocks which have seldom or never been experienced.” This is true. However, the problem is not a particular “institutional device for implementing” a monetary policy rule; it is the very concept of a monetary rule itself in the strict sense of the term. Indeed, it is an instance of what Friedman (1962: 239) characterized as “the stereotypical” complaint about rules. The answer, of course, is that it is at least as “unrealistic” to expect discretion to be used in an “analytically brilliant” rather than a short-sighted or otherwise irresponsible way.

appropriately updated directive policy rule, to the comptroller general within 48 hours of its decision; and the comptroller general would, in turn, be required to “conduct an audit and issue a report determining whether such updated version and the Federal Open Market Committee are in compliance with this section.” A determination of noncompliance would oblige the Fed chair to testify and explain why the monetary authority is not in compliance with the policy directive. Moreover, the committees in question could call for a more comprehensive GAO audit of the Fed. Nevertheless, the Act does not provide for enforcement of the directive policy rule. Hence, the Fed Oversight Reform and Modernization Act of 2015 is a perfect example of a pseudo rule made almost indistinguishable from discretion by the fact that “those who are governed by the rules have the power to enforce or amend or avoid the rules.”

Yet a pseudo rule, as long as it remains in effect, retains the more obvious shortcoming of a genuine rule relative to discretion, to wit: the lack of flexibility. That is, it continues to be a source of errors of omission that might, in principle, be avoided under a judicious and perfectly informed discretionary regime. Instead of being a middle-ground between a real rule and complete discretion, a pseudo monetary rule can end up being worse than either.

Consider, for example, the case in which a definite value for a particular foreign exchange rate serves as a monetary authority’s “prescribed guide for the conduct of monetary policy,” where the authority enjoys complete autonomy to implement the guide as it sees fit, subject only to potential reputational repercussions of failing to do so. Such a pegged exchange rate regime is an example of a pseudo monetary rule. It is distinct from a fixed exchange rate regime, such as a currency-board system, in which a rigid exchange rate is constitutionally prescribed and enforced. Because it lacks any strict enforcement mechanism, a pegged exchange rate regime is less than fully credible, and it is consequently vulnerable to speculative attacks. Consequently, such a regime may end up combining the disadvantages of monetary policy inflexibility with those of exchange-rate uncertainty and associated risk premia (Schuler 2007).

Enforcement by Contract

A monetary rule can be enforced either by means of contracts binding upon monetary authorities, or by means of automatic arrangements

that dispense with such authorities altogether. I'll refer to these alternatives as enforcement by contract and enforcement by design.

Enforcement by contract involves subjecting monetary authorities to loss when they fail to comply with a monetary rule. The loss might consist of outright penalties, of reduced compensation, of loss of ownership equity, or of dismissal. This sort of enforcement is often considered in discussions of means for enforcing monetary rules. Yet it is a solution practically unknown in contemporary monetary arrangements.

The one contemporary arrangement that comes closest to involving a monetary rule enforced by contract is New Zealand's Policy Targets Agreement (PTA). The PTA supposedly "represents a contract between the Minister of Finance/Treasurer and the Governor of the Reserve Bank, and it forms a central element of the Bank's mandate and accountability" whose "specific objective is maintaining CPI inflation within the specified target band" (Reserve Bank of New Zealand, n.d.). However, a look at the actual details concerning this contractual arrangement makes it clear that it does not actually provide for strict enforcement of New Zealand's CPI target. New Zealand's monetary arrangement is, in other words, yet another instance of a pseudo rather than a real monetary rule.

According to section 49 of the Reserve Bank of New Zealand (RBNZ) Act of 1989, which established the current New Zealand arrangement, "The Governor-General may, by Order in Council, on the advice of the Minister, remove the Governor from office," and "the Minister may tender advice" provided the governor-general is "satisfied" that one of several conditions has been met, one of which is "that the performance of the Governor in ensuring that the Bank achieves the policy targets fixed under section 9 or section 12(7)(b) has been inadequate" (New Zealand Parliament 1989).

In fact, although the targets were violated on several occasions during the 1990s, no action was taken. And although inflation declined after New Zealand switched to inflation targeting, it isn't clear that the RBNZ Act, and the PTA in particular, had much to do with it. According to Sherwin (2010: 264), "Governments that were willing to commit themselves to far-reaching reforms across all sectors of the economy were never likely to be tolerant of continuing high inflation, or to shrink from the hard decisions needed to contain inflation, regardless of the precise policy regime in place."

While the strict contractual enforcement of official monetary rules is practically unknown today, such enforcement operated effectively

in the past, when rule violations led to loss of shareholder wealth. I have in mind the means by which issuers of paper money were compelled to abide by metallic standards.

Although the fact is sometimes overlooked today, in the past, most banks of issue were wholly private institutions, and as such were bound by the same sort of contractual obligations to which deposit-granting banks are subject today. In particular, they were required by law to redeem their demandable liabilities in specific amounts of “outside” money or legal tender, and were held to be in default if they failed to do so.

Gary Santoni (1984: 12–13) offers the Bank of England as a case in point. That Bank, he notes, “was a privately owned for-profit central bank from its inception in 1694 until the early 1930s.” Furthermore, the Bank’s obligation to redeem its notes in a fixed quantity of gold was a matter of private contract rather than one of government policy. These arrangements created “a unique incentive structure” that effectively “related the wealth of the Bank’s owners inversely to the rate of inflation”:

If bank notes were issued in such quantities as to cause their market price in terms of gold to fall below the price promised by the Bank, people would arbitrage the difference by trading gold for notes in the market at the low price and exchanging notes for gold at the Bank for the higher price. In the process wealth would be transferred away from the stockholders to those engaging in the arbitrage. The guarantee was believable because customers knew that stockholders would lose wealth if the Bank over issued its notes relative to the supply of goods in general and gold in particular [Santoni 1984: 18].

Santoni goes on to show how the British government’s decision to authorize the Bank to suspend gold payments in 1797—and to assume effective control of the supply of paper money for the duration of the Napoleonic Wars and beyond—changed the structure of constraints dramatically, eventually resulting in both higher inflation and lower share values. In general, the conversion of banks of issue from private firms to public or semipublic monetary authorities had the effect of undermining the strict enforcement of convertibility rules, transforming former real gold standards everywhere into pseudo gold standards that ended up being no more credible than the more recent pegged exchange rate regime discussed previously (Selgin 2015a).

While the historical gold standard depended on a combination of profit incentives in the gold mining industry and strict convertibility

of paper money into gold, Hayek (1978) envisions a system in which unrestricted competition among both private and public issuers of inconvertible (or fiat) paper money are compelled by considerations of profit and loss to regulate their currencies so as to stabilize their purchasing power, lest their failure to do so should cause them to lose market share to rival issuers. Although intriguing, Hayek's scenario is entirely hypothetical. Moreover, as Lawrence White (1999: 227–39) and others have shown, it is far from clear that profit considerations alone would always suffice to rule out the possibility that an issuer might prefer the one-time gain from hyperinflating to the long-run profits to be had by supplying a currency of stable purchasing power.

Robust Contract-Enforced Monetary Rules

Besides being strictly enforced, a real monetary rule must also be “robust.” That is, it must be chosen so that its strict enforcement is not likely to be a cause of such regret as might lead to its frequent revision or abandonment.

A strictly enforced monetary rule might become a cause for regret for either of two reasons. Most obviously, the rule might be one whose strict enforcement occasionally leads to economic distress that a different rule, or monetary discretion, might easily have avoided. Somewhat less obviously, the rule's strict enforcement might result in frequent punishment or dismissal of monetary authorities who have in fact acted in good faith, using the best available information.

I shall say relatively little concerning the relative merits of alternative rules with respect to the first of these potential causes of regret, as the topic is already the subject of a vast literature, and one that includes some of the other contributions to this volume. Instead, my concern is mainly with the other possible cause of regret that a robust rule ought to avoid. What sort of rules can we reasonably expect a central banker to abide by, assuming that he or she is subject to sanctions when the rule is violated?⁹ The question is crucial because no amount of sanctions can suffice to guarantee strict adherence to a rule that even the most competent central banker cannot avoid breaking.

If one is to answer the question, it is useful to distinguish three sorts of macroeconomic variables: (1) variables that the central bank controls more-or-less directly; (2) variables whose long-run values it can control only indirectly and, therefore, imperfectly; and (3) variables over which it exercises no long-run influence. Call these variables “instruments,” “nominal control variables,” and “real variables,” respectively.

A robust monetary rule, in the sense of one that is bound to be adhered to provided it is enforced with sufficient stringency, must, in the first place, refer to an objective or target variable the long-run value of which is subject to the central bank's control. That means a rule concerning either an instrument, such as B (the monetary base) or i (the nominal federal funds rate), or a nominal control variable, such as M (any monetary aggregate), P (some measure of the price level), or Py (a measure of nominal income or spending), rather than a real variable like real output, the unemployment rate, or the velocity of money.

But among rules involving nominal target variables, some are more robust, because they are subject to less "control error," than others. The most robust rules, subject to the least control error, involve targets that depend on the fewest weasel variables, where a "weasel variable" is any real variable that can influence the short-run behavior of the target variable.

Consider, for example, three different monetary rules, each calling upon a central bank to stick to a prescribed growth rate for B , M , and P , respectively. The most robust rule is the one that involves the fewest weasel variables—that is, the one that offers a central banker the fewest opportunities to weasel out of trouble if the rule is violated. To see which of the three rules meet that requirement, consider the equation of exchange:

$$(1) \quad MV = Py.$$

Let $M = mB$, where m is the base-money multiplier, a real variable that depends on the banking system reserve ratio and the public's preferred ratio of currency to deposits. Taking natural logarithms gives

$$(2) \quad \ln m + \ln B + \ln V = \ln P + \ln y.$$

If, using (2), we write the target variable for each of the three rules as a function of B , the instrument over which the central bank has complete control, we get

$$(3) \quad \ln B = \ln B,$$

$$(4) \quad \ln M = \ln m + \ln B, \text{ and}$$

$$(5) \quad \ln P = \ln m + \ln B + \ln V - \ln y.$$

Evidently, of the three rules, the one calling for a fixed growth rate for the monetary base is the most robust, as there can be no legitimate

reason for a central banker to fail to adhere to it—and hence no way for him or her to weasel out of trouble if the rule is, in fact, violated. A money-stock growth target, in contrast, appears to involve one weasel variable—the base-money multiplier—but actually involves several, as the multiplier is itself a function of several real variables. An inflation-rate rule, finally, involves the same weasel variables as a money-stock rule, and two more besides—namely, the velocity of money and real output—making it the least robust of the three.

Consider again, for the sake of concreteness, New Zealand's PTA, and forget for the moment the many ifs, mights, and mays, that call to question the likelihood of its ever really being enforced. According to the agreement,

On occasions when the annual rate of inflation is outside the medium-term target range, or when such occasions are projected, the Bank shall explain . . . why such outcomes have occurred, or are projected to occur, and what measures it has taken, or proposes to take, to ensure that inflation outcomes remain consistent with the medium-term target.

Now suppose that the Reserve Bank governor, having allowed New Zealand's inflation rate to exceed the prescribed range, is called upon to offer such explanations, on the understanding that he will be dismissed unless the explanations are fully compelling. It is easy to imagine the governor blaming the error on the Bank's having overestimated New Zealand's real rate of economic growth, or its having underestimated the rate of growth of velocity, or the money multiplier. Moreover, it is easy to see how such mistakes may be entirely innocent, so that dismissing the governor would achieve very little, though it would almost certainly increase the pressure to revise the rule. Accepting the excuses, on the other hand, would risk undermining the rule's credibility.²

²A nominal GDP rule is also less easy for a central banker to weasel out from than a price-level rule, because it does not call on policymakers to anticipate and accommodate changes in output. That is, unlike a strict inflation target, it doesn't require that the central bank be capable of accurately forecasting supply innovations or "shocks." The contrary suggestion that a nominal GDP rule, because it involves targeting Py , requires the central bank to control both P and y , and is therefore harder to enforce than a price-level rule, is based on a crude misunderstanding. A central bank that controls or targets Py actually has an easier, not a harder, task to perform than one that attempts to target P .

Milton Friedman (1962: 242) presumably had similar considerations in mind in claiming that a price-level rule “is the wrong kind of rule because the objectives it specifies are ones that the monetary authorities do not have the clear and direct power to achieve by their own actions.” However, a constant monetary growth rule, which was Friedman’s preferred rule at the time, though better, is itself subject to the same criticism. As Leitzel (2003: 52) notes, “[T]he monetary authorities cannot control the growth rate of a monetary aggregate precisely”; hence, rigorous enforcement of such a rule “would itself be a questionable practice.” Such considerations, together with the collapse of what had previously been regarded as a relatively stable “money demand function” over the course of the 1970s, ultimately led Friedman to favor a monetary base rule—that is, a rule involving no weasel variables.

The disadvantage of a base rule is of course that, although its strict enforcement may never be a cause of regret stemming from the necessity of punishing well-meaning and competent central bankers, it would almost certainly be a recipe for regret concerning avoidable economic distress. For it is all too easy to imagine occasions in which a strictly enforced base rule would prove inconsistent with a relatively stable level of overall spending, and, hence, with the avoidance of macroeconomic disturbances.

Certain rules can, however, avoid both sorts of regret, making them particularly robust. An example is the monetary rule proposed by McCallum (1987), a simplified version of which might be written as

$$(6) B_t = k + \lambda (X^* - X_{t-1}),$$

where $X (= \ln P + \ln y)$ is the nominal GDP (NGDP) growth rate, X^* is the target rate, and k is the base growth rate estimated to be consistent with achieving the long-run NGDP growth rate target. Because it calls for a particular pattern of adjustments to the monetary base, McCallum’s rule, like Friedman’s monetary base growth rule, is one that the monetary authorities cannot possibly violate unintentionally. But instead of calling for the base to grow at a constant rate, McCallum’s rule calls upon the authorities to adjust the base in response to perceived changes in nominal spending (Py), with the ultimate objective of maintaining a stable level or growth rate of such spending—a goal much more likely to avoid macroeconomic disorder. In the case of such a “feedback rule,” the authority is subject to sanctions, not for failing to achieve the desired spending

target—the feedback rule itself, if properly designed, sees to that—but for failing to adjust the monetary base according to the prescribed feedback rule.

My discussion of robust monetary rules will recall for many the debate some years ago concerning target versus instrument rules for monetary policy. In that debate, a monetary instrument was defined just as I have defined it, that is, as “a variable the central bank administers or controls so closely that control error can be ignored” (Froyen and Guender 2012: 101). However, participants in that debate (for example, Svensson 2005) understood a “robust rule” to be one that minimized some postulated policy loss function. That definition conforms to mine only to the extent that it favors rules limiting the incidence of potentially avoidable (and therefore regrettable) economic distress. The targets versus instruments literature ignored entirely the second potential sort of regret—that stemming from having to punish innocent central bankers. Consequently, and not surprisingly, that literature concluded that target rules were more robust than instrument rules, including instrument rules involving feedback from some ultimately desired target.

Enforcement by Design

A monetary rule can be said to be enforced by design, rather than by contract, when the monetary system itself automatically implements the rule, without need for an authority that might fail to comply with it, and therefore without any need for sanctions. Enforcement by design eliminates the possibility of either unintentional rule violations or intentional ones resulting from political pressure and like influences. As Leitzel (2003: 50) notes, “A fixed rule that is implemented automatically, like a machine, eliminates this incentive for politicking. Machines are notoriously difficult to persuade, being immune to the blandishments of reason, love, or money.” Because a monetary rule enforced by design does not rely on sanctions, such a rule is necessarily robust to the extent that there is no question of its not being properly enforced. Such a rule may however be a cause of avoidable distress that could put its sustainability in doubt, thereby undermining its credibility.

Officially dollarized monetary systems are the only prominent examples today of monetary arrangements involving rules enforced by design. By employing a foreign nation’s paper currency as their

own circulating means of payment, often without establishing any monetary authority of their own, dollarized nations effectively commit themselves to the equivalent of a fixed exchange rate rule, while depriving themselves of any immediate means for modifying or abandoning the rule. Such arrangements are examples of what Schuler (2007) regards as genuinely fixed (as opposed to less-credibly “pegged”) exchange rate regimes. According to my own terminology, they supply a foundation for real rather than pseudo monetary rules.

Orthodox currency boards—arrangements in which a domestic monetary authority issues a distinct domestic currency that is both freely convertible on demand into a “host” foreign currency and fully backed by host foreign currency reserves—also serve to fix rather than merely peg the domestic–host currency exchange rate (Hanke 2002). Because a currency board holds 100 percent foreign-currency reserves, it can never be forced to suspend, and is therefore neither as vulnerable to speculative runs nor as likely to be confronted by them as a conventional pegged-rate system. The persons in charge of the currency board may also lack any power to alter its fixed-rate commitment, which might be embodied in the board’s enabling legislation or even in the national constitution. For these reasons, we might also consider a currency board as an instance of a real monetary rule enforced by design. In any event, it comes much closer to such a rule than an ordinary, central bank based exchange rate commitment, which is no more than a pseudo rule.

Dollarization and currency boards are designed to implement currency convertibility rules. But it is also possible to conceive of monetary arrangements designed to automatically enforce other sorts of rules. A hypothetical possibility of this sort was proposed years ago by Milton Friedman, when he (perhaps somewhat facetiously) suggested replacing the FOMC with a computer programmer so as to regulate the New York Fed’s open-market operations in a manner guaranteed to keep the money stock growing at a prespecified rate. Importantly, the success of such a scheme rests no less on the elimination of the FOMC—or any other body capable of either reprogramming the computer or overriding its instructions—than on the adequacy of the computer program itself.

Although Bitcoin as yet doesn’t quite qualify as money—that is, as a generally accepted medium of exchange—a monetary regime using Bitcoin’s blockchain technology, whether based on Bitcoin or some

other cyberrcurrency, would represent a variation on Friedman's computer-controlled open-market purchases, and one having the decisive advantage of relying on an open-source software that is highly tamper resistant. In the case of Bitcoin, the software is programmed so that the supply of bitcoins increases at a diminishing rate, eventually leveling-off as the limit of 21 million bitcoins is approached. Because such a quantity rule hardly seems calculated to avoid long-run economic distress stemming from growth and fluctuations in the real demand for money balances, its long-run sustainability as the basis of an actual, national, or international monetary regime, would be quite doubtful. A modified program using the same blockchain technology might, however, provide for more flexible and macroeconomically friendly patterns of money stock adjustment (Selgin 2015b).

An interesting proposal for a monetary rule enforced by design is Scott Sumner's plan for a "market-driven" NGDP targeting regime. According to Sumner (2013: 4), his plan involves "setting up a nominal GDP futures market and then adjusting the monetary base to stabilize nominal GDP futures prices. The market, not central banks, would set the level of the monetary base and short-term interest rates under this sort of policy regime."

To arrive at his market-driven arrangement, Sumner would first establish a contract-based NGDP targeting scheme, in which FOMC members' salaries are tied to the accuracy of their NGDP forecasts (Sumner 2013: 11), with hawks being punished and doves rewarded if NGDP increases too slowly; and doves being punished and hawks rewarded if it rises too quickly. Next, Sumner imagines that FOMC members "vote" by actually taking either long or short positions in NGDP futures contracts, with the Fed offering to buy or sell unlimited quantities of NGDP futures contracts at a fixed price of \$1.0365 per contract (reflecting a 3.65 percent NGDP growth target), while at the same time "linking" its open-market security purchases to NGDP futures market transactions. Finally, he would allow anyone to participate in the NGDP futures market and to thereby influence the Fed's open-market operations.

But while Sumner's proposal, assuming it would work as he suggests, would in a sense make monetary policy and NGDP targeting automatic, it is not clear that it would do so in the crucial sense of ruling out departures from, or even the complete abandonment of,

the proposed rule. For suppose that the Federal Reserve chose to cease buying and selling futures contracts, or to buy and sell them at a different value. Or suppose it modified or severed the “link” connecting its NGDP futures market transactions from its open-market purchases and sales. Are such steps altogether impossible under the proposed system? If so, why? And if not, what is to prevent them from being taken? What, if any, sanctions would be applied, and to whom? If the answer is none, the NGDP futures targeting arrangement, despite its presumed “automaticity,” is, in fact, another instance of a pseudo rather than a real monetary rule.³

Conclusion: A Matter of Degree

In distinguishing between real and pseudo monetary rules, I do not wish to be understood to suggest that these alternatives are separated by a hard and fast line. On the contrary, the line is a very fine one, the difference ultimately being one, not in kind, but in degree to which adherence to a rule is regarded as unbreakable. In fact, there is no such thing as an absolutely unbreakable monetary rule, for monetary arrangements are human creations and there is nothing human beings can create that they cannot also destroy.

Yet, however fine the line between the two may be, the distinction between real and pseudo monetary rules seems to me necessary and important. For unless that distinction is made, the difference between monetary rules and monetary discretion becomes hopelessly blurred, and there can be no reasonable accounting for the relative advantages and shortcomings of the two alternatives.

³Some years ago, Sumner (2009) wrote of his proposal in a manner expressly suggesting that its long-run viability rested, not on either sanctions or other devices serving to guarantee its perpetuation, but solely on the likelihood that it would avoid macroeconomic distress. “Even if the program stabilized 12-month forward NGDP expectations, it might not stabilize longer term NGDP expectations if the public expected the Fed to abandon the policy at some point in the future. However, I don’t see this as a major drawback, as I believe stabilizing 12-month forward NGDP expectations would keep nominal wage rates well behaved, and . . . I regard aggregate nominal wage instability as the key factor behind macroeconomic instability.”

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FRIEDMAN AND THE BERNANKE-TAYLOR DEBATE ON RULES VERSUS CONSTRAINED DISCRETION

Harris Dellas and George S. Tavlas

The debate about rules versus discretion in monetary policy is an old one. It goes back at least to the 1930s, when a group of University of Chicago economists, led by Henry Simons, proposed that the monetary authorities should be bound by a rule that aims to achieve price-level stability.¹ Although for many years that debate was confined to the academic community, it spilled over to the public arena in 1958, when Milton Friedman proposed a money-supply growth rule to the Congressional Joint Economic Committee.²

Recently, the issue of rules versus discretion in monetary policy has been at the heart of a debate between the former Fed chairman,

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¹See Tavlas (2015) and Dellas and Tavlas (2016).

²Friedman (1958) proposed a rule under which a measure of the money supply—comprising currency, commercial banks' reserves, and demand deposits and time deposits of commercial banks—would be increased by 3 to 5 percent a year in order to maintain price-level stability.

Ben Bernanke, who favors what he calls “constrained discretion” in the conduct of monetary policy, and John Taylor, who favors a “rules-based” monetary policy.

In what follows, we address the following question: What would Milton Friedman have thought about the present debate on constrained discretion versus rules-based monetary policy? To shed light on this question, we begin by briefly reviewing the positions of Taylor and Bernanke, respectively, on rules versus discretion. Next, we consider the factors that led Friedman to favor a money-supply growth rule. During the late 1940s and early 1950s, Friedman favored using fiscal policy to effectuate changes in the money supply in order to stabilize output at the full-employment level. However, during the 1950s, his growing realization that the Federal Reserve System was culpable in both initiating the Great Depression with its policy tightening in 1928 and 1929 and deepening the Depression with its policies after 1929, led him to favor a rule that limited discretion. We show that a key factor underlying the rules of both Friedman and Taylor is their common view that monetary policy should aim to reduce uncertainty.

Taylor Rule versus Constrained Discretion

The most popular description of contemporary monetary policy is the Taylor rule (see Taylor 1993). It involves the manipulation of a short-term nominal interest rate—the policy instrument—to achieve a target real interest rate. The rule aims to achieve a predictable and systematic strategy for the policy instrument; it prescribes that the policy rate should be raised when inflation is above a target level or when the output gap is positive (and that the rate should be lowered in the opposite situations). According to Taylor’s original specification of the rule, the nominal interest rate should respond to divergences of observed inflation rates from *target* inflation rates, and of deviations of actual gross domestic product (GDP) from *potential* GDP (that is, the output gap):

$$(1) \quad i_t = \pi_t + r_t^* + \alpha_1(\pi_t - \pi_t^*) + \alpha_2(y_t - \bar{y}_t).$$

In this equation, i_t is the short-term nominal interest rate (e.g., the federal funds rate in the United States; the Bank of England’s base rate in the United Kingdom), π_t is the rate of inflation as measured by the GDP deflator, π_t^* is the desired rate of inflation, r_t^* is the

assumed equilibrium real interest rate, y_t is the logarithm of real GDP, and \bar{y}_t is the logarithm of potential output. If the rule dictates that interest-rate movements are needed to achieve the two policy objectives, the rule's parameters provide guidance on balancing the two objectives and determine the sign and size of the change in the policy instrument. In Taylor's (1993) original presentation of the rule, the real interest rate was set at 2.0, and both α_1 and α_2 were set at 0.5.³

As we will explain, a key factor that differentiates Taylor's monetary-policy framework from that of Friedman is Taylor's use of the output gap in his rule. The inclusion of the output gap in the Taylor rule serves two purposes. First, it helps provide information about present and future inflationary pressures, in addition to the information provided by the variable representing the divergence of observed inflation from targeted inflation. Second, it provides a short-run stabilization role for monetary policy. Taylor (1982: 351) believes that, in the long run, "the economy tends to revert to the natural rate of unemployment," which is the rate that corresponds to potential output. He also believes that in the long run there is no relationship between inflation and deviations of output from potential output (Taylor 1994: 38). An aim of including the output gap in the Taylor rule is to stabilize output in the short run around the level that corresponds to the natural rate of unemployment (Hall and Taylor 1997: 478).

Taylor (2015a) argues that the major advantage of following a rule such as that described in the above equation is that it makes monetary policy transparent and predictable.⁴ The better that people are able to predict the way the monetary authority will act, the better they can plan their consumption and investment decisions, and the more likely they will act the way the monetary authority desires them to act. Taylor also argues that during the late-1960s and the 1970s,

³While it is likely that no central bank explicitly follows such a rule, empirical work on the U.S. economy indicates that a Taylor rule captured movements in the policy rate well after the mid-1980s. See Clarida, Galí, and Gertler (2000). Meltzer (2011) argues that the Fed approximately followed a Taylor rule during the period from 1985 to 2002.

⁴Taylor (2015b) states that "I [do not] want to chain the Fed to an algebraic formula. . . . Having a rules-based policy for your instruments does not mean you mechanically follow a formula. It means you have an explicit strategy for setting the instruments."

a period during which Federal Reserve authorities pursued discretionary policies, the performance of the U.S. economy was characterized by high unemployment and inflation rates. When the Fed moved to a “rule-like” policy, focused on price stability, during the period from 1985 to 2002, economic performance improved greatly. Compared with the 1970s, inflation and nominal interest rates—and their volatilities—fell, the volatility of GDP was cut in half, and the rate of unemployment declined. Cyclical expansions became longer and stronger than during the period from the late-1960s to the mid-1980s, and recessions became shorter and shallower (Taylor 2012: 1023).⁵ However, when the Fed reverted to a more-discretionary monetary policy around 2003, it held the interest rate well below the level implied by a rules-based policy and, thus, sowed the seeds of the subsequent housing-market bubble and financial-market excesses, the financial crisis of 2007–08, and the Great Recession, beginning in 2007 (Taylor 2012).

Bernanke (2015) argues that, while the Taylor rule may provide an apt description of the way monetary policy was made in the past, it should not serve as a guide for the way monetary policy *should* be made. Bernanke raises several problems with the Taylor rule. First, the rule assumes that the relevant measure of inflation— π_t^* in Equation 1—is the change in the GDP deflator. However, the GDP deflator excludes the prices of imports, including imported consumer goods. Federal Reserve authorities, according to Bernanke, have considered that core inflation (which excludes volatile fuel and energy prices) based on the deflator for personal consumption expenditures is the appropriate measure of medium-term inflation. Second, the rule relies on numerical values of coefficients (that is, α_1 and α_2) that may not be reflective of the monetary authorities’ behavior. For example, Bernanke points out that Federal Reserve authorities have, in practice, allowed a greater response of the federal funds rate to the output gap than assumed under the Taylor rule—a coefficient closer to 1.0 rather than to 0.5 as specified under the Taylor rule.⁶ Third, both the output gap, which depends on the level of

⁵Taylor (2012: 1020) characterizes the period from 1980 to 1984, when the Fed had shifted to price stability as the key goal, a “transition” period.

⁶Bernanke (2015: 8) points out that there exist different judgments among policymakers about the numerical value of the coefficient on the term representing the difference between the actual inflation rate and the desired inflation rate.

potential output in addition to the level of output, and the equilibrium real interest rate are unobserved variables and, thus, there is no consensus about their true values. Consequently, they are concepts that are difficult to quantify and, as such, introduce arbitrariness into the conduct of monetary policy. Fourth, measures such as the output gap are often subject to substantial revisions (see Orphanides 2003). The use of such measures in policymaking, therefore, involves considerable judgment on the part of the monetary authorities.

Bernanke's view is that a rules-based policy for instruments is not needed if the monetary authorities set goals for the inflation rate and/or other variables, such as the unemployment rate. In his view, policymaking should consist of doing whatever is needed with the policy instruments to attain the goals. So long as the particular level of the policy instrument—for example, the federal funds rate—can be justified in terms of the policy goals, the monetary authorities need not articulate a specific strategy, a decision rule, or a contingency plan for the instruments. In contrast to a Taylor rule, however, which allows the monetary authorities to smooth out the effects of certain shocks on the economy, under constrained discretion the full response must be undertaken at once. Consequently, attaining any inflationary objective is more costly under constrained discretion (in terms of output sacrificed) than under a Taylor rule (see Rivot 2015: 607).⁷

Friedman: The Path to a Money Supply Rule

Friedman began teaching at the University of Chicago in 1946. At that time, his thinking on monetary policy had been heavily shaped by Henry Simons, who had been Friedman's teacher at Chicago during the early 1930s. Simons believed that the Fed's discretionary policies of the late 1920s and the 1930s had increased uncertainty and exacerbated the business cycle (see Dellas and Tavlas 2016).⁸ To reduce the uncertainty produced by discretionary policy, he argued that

⁷Taylor (2015a: 5) argues that “simply having a specific numerical goal or objective is not a rule for the instruments of policy; it is not a strategy; it ends up being all tactics.”

⁸Simons did not believe, however, that the Fed had initiated the Great Depression. He attributed the Great Depression to a fall of confidence, triggered by the October 1929 stock-market crash.

monetary policy should follow a rule aimed at stabilizing the wholesale price index (Simons 1936). Simons also perceived that open-market operations and changes in the discount rate are ineffective stabilization tools. How then should the price-level stabilization rule be implemented? Simons's answer was that fiscal policy should be used to implement desired changes in the money supply. Specifically, budget deficits would be used to increase the supply of money and budget surpluses would be used to decrease the money supply as needed with the aim of keeping the price level stable in the short term. Such a rule, Simons believed, would be simple and easily understood, and it would reduce policy uncertainty. Over the course of the business cycle, he also believed, the budget should be balanced (Simons 1942: 196).

Friedman's policy views as of the late 1940s were similar to those of Simons. Like Simons, Friedman believed that open-market operations are an ineffective stabilization tool.⁹ He also believed that fiscal policy should be conducted so as to change the supply of money as appropriate in order to stabilize aggregate demand and balance the budget at full employment (Friedman 1948). Thus, the quantity of money would vary counter-cyclically, increasing during recessions and falling during cyclical expansions. On average, the budget would be balanced over the cycle (Friedman 1948).

The basis of Friedman's conversion from a Simons-type rule, under which fiscal measures would be used to generate changes in the money supply with the aim of attaining full employment, to a rule under which the Fed would use open-market operations to target a constant growth rate of the money supply was his ability and proclivity to apply statistical analysis to economic data. The turning point in Friedman's conversion came in 1948, the year in which he began his collaboration with Anna Schwartz.¹⁰ The statistical approach that Friedman used to underpin his work with

⁹In fact, during the late 1940s Friedman believed that open-market operations should be abolished.

¹⁰In a 2001 interview, Friedman stated: "Then [in 1948] I got involved in the statistical analysis of the role of money, and the relation between money and money income. I came to the conclusion that this [fiscal] policy rule was more complicated than necessary and that you really didn't need to worry too much about what was happening on the fiscal end, that you should concentrate on just keeping the money supply rising at a constant rate. That conclusion was, I'm sure, the result of the empirical evidence" (Taylor 2001: 119).

Schwartz was the application of correlation analysis to a wide array of data to develop quantitative and qualitative evidence. This evidence led to the formulation of broad hypotheses and informal testing based on data other than those used to derive the hypotheses. By the late 1950s, Friedman and Schwartz had drawn the following conclusions.

- In the long run, there is a strong empirical relationship between changes in money and changes in prices, with changes in the former typically preceding changes in the latter. While this relationship, in and of itself, need not tell us anything about direction of influence, the variety of monetary arrangements—for example, the gold standard, flexible exchange rates, regimes with and without a central bank—over which this relationship holds suggests that changes in money are a necessary and sufficient condition for substantial changes in prices.
- There is no clear-cut relationship between changes in prices and changes in output. Economic growth depends on such factors as the growth of knowledge and technical skills, the growth rate of the population, and the growth of capital. On average, during the period from 1867 to 1960, the annual growth of output averaged a little more than 3 percent.
- The relationship among money, output, and prices is much more complicated within the cycle than over the long run. Within the cycle, this relationship is subject to long and variable lags. Historically, discretionary monetary policy that aimed to smooth the cycle served instead to amplify the cycle.
- The Federal Reserve's monetary stance contributed to the Great Depression in two ways. First, the Fed precipitated the Great Depression in 1929 by pursuing a tight monetary policy from early 1928. Second, from the end of 1930, the Fed permitted the Depression to deepen when a series of bank failures led to a liquidity crisis and the Fed failed to provide sufficient liquidity to enable the banks to meet the demands of their customers. By allowing the money supply to fall by over a third between 1929 and 1933, the Fed bore the major responsibility for both the onset and the depth of the Depression.

Friedman's recognition of the Fed's culpability in both precipitating and deepening the Great Depression played a central role in his

conversion to a money-supply rule, which, since it ties the monetary authorities to an instrument (the money supply), provides less discretion than a Simons-type price-level rule, which ties the authorities to the policy goal (the price level). Friedman's conversion, however, took several years to develop. A key influence contributing to that process was Friedman's correspondence during the early 1950s with Clark Warburton.¹¹

During the course of 1951, Warburton and Friedman carried out a correspondence about the Fed's role in deepening the Great Depression because of the central bank's failure to provide sufficient liquidity to the banking system and, thus, its failure to prevent four major banking panics during the period from 1930 to 1933. In a letter dated August 6, 1951, Warburton wrote to Friedman that the reason underlying the Fed's inept policies was the "incompetence" of Fed officials:

It is apparent that you do not realize the background of my charge that the difficulties of the 1930s were due to incompetence on the part of central bank officials rather than to a defect in the banking and monetary structure. That charge is based on the simple but obvious fact that in the early 1930s the Federal Reserve authorities acted as though they knew nothing about the principles of currency management. . . . [The] failure to handle the Federal Reserve System in conformity with [the principles of currency management] in the 1930s fully warrants a charge of sheer incompetence, based presumably on ignorance [Warburton 1951].

Friedman, in his reply to Warburton, dated September 3, 1951, wrote that he agreed with Warburton's evaluation of the Fed's performance during the early 1930s. However, Friedman also made it clear that he disagreed with Warburton's assessment that the underlying factor of the Fed's performance was the incompetence of Fed officials. Specifically, Friedman argued that, regardless of the

¹¹Warburton (1896–1976) was an empirical economist who spent his career at the Federal Deposit Insurance Corporation. His empirical work led him to believe that money-supply instability was a major source of business fluctuations, including the Great Depression. For an assessment of Warburton's contributions, see Bordo and Schwartz (1979).

competence of the officials, in the absence of monetary policy rules, the officials would have been subjected to political pressures:

Our difference of opinion is on the conclusions we draw from this period. You interpret it as a product of ignorance and incompetence and, in effect, say “throw the rascals out” and put in competent and wise people. For the moment let me grant first, that the failure is attributable solely to ignorance and incompetence, and the competent and wise people in charge would run the system so that it would avoid past failures and no longer contribute to instability. What is the likelihood that competent and wise people will be chosen, or that if chosen, they will be allowed to continue in charge? Is it a pure accident that the system was in the hands of incompetent and ignorant people for 40 years? Wisdom and competence involves readiness to do the opposite of what everyone else is doing, which is hardly the way to win friends and influence people [Friedman 1951a].

In that same letter, Friedman introduced the idea of a monetary rule based on a constant growth rate for the money supply:

But let me beg these questions and assume for the moment that wise and competent people are put in charge and that they behave according to the “correct” rules. The system would not be harmful as in the past. But what positive merits would the system have as compared with making the “correct” rule mandatory, by which I mean keeping the present general structure but legislatively instructing the managers to keep the total quantity of money (or of member bank reserves) constant (or growing at x per cent a year) [Friedman 1951a].

In an unpublished 1951 memorandum, “The Role of the Monetary and Banking System in the Business Cycle,” Friedman argued that there was evidence to support the “exceedingly tentative” hypothesis that the Fed had caused the Great Depression to deepen during the early 1930s. That hypothesis, he believed, “requires expansion and testing” (Friedman 1951b: 3). At that time, Friedman did *not* consider the hypothesis that the Fed had initiated the Depression with its policies in 1928 and 1929. He continued to advocate a rule under which fiscal policy would be used to effectuate changes in the money supply in order to stabilize output at full employment.

By 1956, Friedman's views had undergone further change. In an unpublished 1956 memorandum, "Monetary Policy, Domestic and International," the evidence that he had accumulated in his work with Schwartz led Friedman to believe "that there can be little question that the [economic] decline from 1931 to 1933 was produced entirely by the Federal Reserve's reaction in the fall of 1931 to England's going off the gold standard" (Friedman 1956: 3). He also put forward the hypothesis that the Fed may have *initiated* the Great Depression. In light of his growing awareness of the consequences of discretionary monetary policy, in that same document, he considered, for the first time, a *specific* money supply rule under which the money supply should be increased by 4 percent a year.

By the late 1950s and early 1960s, empirical evidence had convinced Friedman that a policy rule would have avoided the "excessive" mistakes made by the monetary authorities in the past, including the collapse of money from 1929 to 1933 (Friedman 1960: 92).¹² A policy rule, under which the money supply increased by between 3 to 5 percent annually, he argued, would eliminate "the danger of instability and uncertainty of policy" (Friedman 1960: 85). In contrast, discretion had in the past led to "continual and unpredictable shifts in . . . policy as the persons and attitudes dominating the authorities had changed" (Friedman 1960: 93), while exempting the authorities of any criteria from which to judge their performance and leaving them vulnerable to political pressures (Friedman 1960: 85). Also, in marked contrast to both Simons's proposal and his own earlier proposal, Friedman (1960: 90) argued that the implementation of his money supply proposal has a further advantage; "it would largely separate the monetary problem from the fiscal [problem]."

Friedman and the Bernanke-Taylor Debate

We now turn to the central question addressed in this article: What would Friedman have thought about the Bernanke-Taylor debate? We believe that the following factors are important to consider.

- First, Friedman, and Simons before him, was fully aware of the limitations of simple rules. Nevertheless, both economists

¹²As mentioned above, Friedman first publicly presented his money supply rule at a congressional committee in 1958 (see Friedman 1958).

wanted to minimize the damage that had been historically inflicted by discretion.

- Second, Friedman did not believe that a policy rule would be a magic bullet. A rule would not eliminate mild economic fluctuations, but it “would almost certainly rule out . . . rapid and sizeable fluctuations” (Friedman 1960: 92).
- Third, Friedman thought that, in the long run, monetary policy can control the inflation rate but not the unemployment rate. The latter variable, he believed, is determined by real forces, the long-run level of which cannot be altered by monetary policy.
- Fourth, Friedman, like Taylor, believed that the goals of monetary policy should be “a reasonably stable economy in the short run and a reasonably stable price level in the long run” (Friedman 1959: 136). Moreover, Friedman was not, in principle, opposed to the use of a measure of the output-gap variable in monetary-policy formation. He also believed that monetary policy should take account of the present state of the economy. In this connection, he was critical of monetary policy during the high-inflation 1980s because he believed that it brought down inflation too quickly and, thus, produced a larger-than-necessary increase in the unemployment rate (Nelson 2008: 97).
- Fifth, Friedman (1960: 91) stated that he was “open to other rules” that could become more suitable than a money supply rule should the understanding of the economy be improved. In the 1990s, he acknowledged that the understanding of the economy had indeed improved since the 1960s and said that he had been surprised by the success with which that knowledge had been used by the monetary authorities since the mid-1980s (see Nelson 2008: 103).¹³
- Sixth, Friedman (1960: 84) recognized that there is a fairly fine line between what we now call constrained discretion—assigning a general goal in advance to the monetary authorities and allowing them to achieve that goal—and a policy based on rules: “The general goal alone limits somewhat the discretion of the authorities and the powers assigned to them to do so to an

¹³As noted above, the Taylor rule accurately captured movements in the U.S. economy during the period from the mid-1980s until the early 2000s.

even greater extent; and reasonable rules are hardly capable of being written that do not leave some measure of discretion.” Yet, for the reasons explained above, the contrast between rules and discretion, he believed, was both marked and important.¹⁴

Friedman would have had two concerns with a Taylor rule. First, that rule assumes that we possess knowledge about the structure and functioning of the economy—that we may not, in fact, possess. Like Bernanke, Friedman would likely have been skeptical about a rule that relies on concepts such as the equilibrium real rate of interest and potential output, and the structural parameters linking those variables to the economy. Since measures of those variables involve judgment, feedback rules based on those measures introduce an element of discretion into policymaking. Second, the lack of knowledge about the effects of fine-tuning could lead to the possibility of policy being destabilizing in practice. In other words, the long and variable lags associated with monetary policy mean that counter-cyclical monetary policy can be a *source* of shocks since, for example, the effects of a policy tightening aimed at restraining aggregate demand and reducing inflation might not kick in until the contradictory phase of the business cycle, amplifying the downturn.

Nevertheless, both Friedman’s money supply rule and the Taylor rule share a number of important characteristics.

1. Both rules are simple and easy to understand. Therefore, they aim to make monetary policy transparent and predictable.
2. Both rules target a policy instrument—a monetary aggregate in the case of the Friedman rule and the policy interest rate in the case of the Taylor rule—limiting discretion.
3. In marked contrast to constrained discretion, both rules exclude reliance on perceptions and interpretations about future economic variables to shape the conduct of monetary policy. By excluding such perceptions and interpretations about future variables from policy formation, both rules further limit discretion.
4. By limiting the amount of discretion, both rules also contain the potential political influence that can be exerted on the

¹⁴Similarly, Taylor (2012: 1018) stated that “the distinction between rules and discretion is more a matter of degree.”

monetary authorities;¹⁵ it is easier to influence policy formation if the monetary authorities exercise judgment than it is if they are bound by a rule.

5. Both rules limit the possibility that monetary policy may fall prey to Warburton's "incompetent" monetary authorities or to the influence of fads in economic thinking.
6. Both rules draw a clear separation of monetary policy from fiscal policy, thus further insulating the monetary authorities from political pressures.
7. Both rules clearly place price stability at the heart of monetary policy. Friedman (1960: 91) specifically proposed his rule for the following reason: "a rate of increase [of the money supply] of 3 to 5 percent per year might be expected to correspond with a roughly stable price level." The Taylor rule explicitly targets a low and stable inflation rate.

The underlying element common to each of these characteristics is the recognition of the need to reduce both policy uncertainty and the effects of negative policy shocks. For example, simple and easy-to-understand rules reduce uncertainty about the implementation and the goals of monetary policy.¹⁶ Similarly, excluding reliance on perceptions and/or interpretations of future economic variables reduces uncertainty since it reduces the importance of the issue whether the judgments of economic agents about the course of future variables correspond to the judgments of the monetary authorities. Insulating monetary policymaking from political pressures likewise reduces uncertainty about that policy. The specific goal of price-level stability reduces the informational uncertainty produced by price volatility. Taylor (1993: 6) argues that, "economic theory shows that things would be better if there is more certainty about the conduct of monetary policy." Friedman (1960: 86) wrote that

¹⁵Friedman (1960: 85) argued that reliance on discretion leads to "continual exposure of the authorities to political and economic pressures." Taylor (2012: 1024) argued that "[rules] help policymakers avoid pressures from special interest groups and instead take actions consistent with long-run goals."

¹⁶As Orphanides (2015: 10) put it: "In the presence of uncertainty, it may be virtually impossible for an outside observer to distinguish when a discretionary decision represents a deviation from good practice . . . and when it reflects sound judgment, incorporating efficiently information the policymaker may possess that may not be available to the outside observer."

“experience suggests that eliminating the . . . uncertainty of policy is far more urgent than preserving flexibility.”

What, then, would Friedman have thought about a Taylor rule? We believe that a strong case can be made that Friedman would have become supportive of such a rule for the following reasons. First, for the reasons enumerated above, Friedman’s primary objective in advocating a money growth rule was to reduce uncertainty in policy-making and the possibility of negative policy shocks. The Taylor rule has the same objective. Second, during the 1980s and 1990s, Friedman became increasingly aware of the difficulties of targeting a single monetary aggregate; he recognized that financial changes had blurred the differences among different kinds of monetary aggregates and, thus, increased the tendency for alternative aggregates to give mixed signals (Nelson 2008: 103). In a 2003 interview, he stated: “The use of [the] quantity of money has not been a success. I am not sure I would as of today push it as hard as I once did” (Friedman 2003). Third, as Nelson (2008: 103) points out, during the 1990s, Friedman acknowledged that, since the mid-1980s, the monetary authorities had been successful in stabilizing the economy. As mentioned above, during the period from the mid-1980s until 2003, the Fed’s policy was captured by the Taylor rule.

If our interpretation—that Friedman would have become supportive of a Taylor rule—is correct, we do not believe that he would have abandoned reliance on monetary aggregates. The Taylor rule would serve to limit discretion in the short term. Nevertheless, over the medium and long terms, the quantity of money continues to provide crucial information about inflation. Therefore, he may have advocated a two-pillar strategy consisting of a Taylor rule supplemented with a medium-term objective price stability in which monetary aggregates play a key role.

What would Friedman have thought about constrained discretion? He might have been favorably impressed with the recent performance of the monetary authorities in their implementation of monetary policy.¹⁷ He would also have recognized, however,

¹⁷We would not exclude the possibility that in recent years monetary authorities have benefited from the policy credibility gained during the 1980s and 1990s. That credibility gain may have helped keep inflation expectations well anchored subsequently.

that the historical record indicates that the favorable performance of one group of monetary authorities, exercising judgment, does not ensure that future authorities will be as capable in their ability and judgment and/or as unconstrained by political pressures in exercising that judgment. In his assessment of “constrained discretion,” we believe that he would likely have called a spade a spade and would have questioned the use of the qualifier “constrained.”

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NUDGING THE FED TOWARD A RULES-BASED POLICY REGIME

Scott Sumner

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.

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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

¹Svensson (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.

²In 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

³Robert 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. . . .

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 permanent—that 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?

⁴In 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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MONETARY POLICY AND THE KNOWLEDGE PROBLEM

Gerald P. O'Driscoll Jr.

The curious task of economics is to demonstrate to men how little they really know about what they imagine they can design.

—F. A. Hayek (1988: 76)

The knowledge problem in economics is most closely associated with Friedrich Hayek, who articulated it in analyzing the role of prices in markets, the socialist calculation debate, and monetary policy. In this article, I summarize and apply Hayek's analysis to contemporary monetary policy debates. I also connect Hayek's work with that of Milton Friedman, who articulated his own version of the knowledge problem in his monetary work. Friedman's views in this area are underappreciated.

Hayek argued that knowledge is inherently dispersed and localized across the population of economic agents. It is not possible to assemble the totality of knowledge existing in society in any one mind or place. Individuals may reveal their localized knowledge by

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their actions, but only if incentivized. Moreover, knowledge is often tacit and cannot be articulated. What the totality of individuals knows far exceeds what any policymaker can know, no matter his or her expertise and wisdom.

Hayek on the Knowledge Problem

Hayek presented his analysis of the knowledge problem in society in the course of what came to be known as the socialist calculation debate (Hayek [1935] 1975a).¹ He developed the argument further in a series of lectures and articles in the 1930s and 1940s. They were made more accessible by being reprinted in one place (Hayek 1948).

Early supporters of socialism supposed they could dispense with economic problems. Some thought of societal resource allocation as an engineering problem. Hayek (1975a: 5) pointed out that engineering problems involve a singleness of purpose. Resource allocation involves competing uses of resources, and accounting for opportunity costs is necessary (Hayek 1975a: 6–7). What is being introduced here is the basic knowledge problem of a diversity of actors with different preferences. The difficulty for socialists wanting to abolish private property and markets was “how in the absence of a pricing system the value of different goods was to be determined” (Hayek 1975a: 27). He supported Mises’ argument that only a system of money prices, including for factors of production, could produce a rational solution to resource allocation. That system necessitated private property, including in capital goods.

Hayek’s essays bookended the 1935 volume. His concluding chapter dealt with various responses to Mises’ original critique. These were the “alternative socialist systems which differ more or less fundamentally from the traditional types against which the criticism was directed” (Hayek 1975a: 202). The debate took many twists and turns, but I will follow the knowledge argument. Hayek reiterated that knowledge is dispersed, and for any variant of central planning, it must somehow become concentrated in one mind or those of a very few experts. Much knowledge is not preexisting, but it is created only

¹The knowledge problem is also known as the coordination problem (O’Driscoll 1977). Notably, there are blogs by each name: www.coordinationproblem.org and www.knowledgeproblem.com.

in the process of adapting to change (Hayek 1975a: 210–11).² “Every passing whim of the consumer is likely to upset the carefully worked out plans” of the central planning authority (Hayek 1975a: 214).

Hayek (1975a: 227) emphasized the importance of disruptive change and the dynamic nature of the economic problem. Economists ignored the importance of change because of “the excessive preoccupation with the conditions of the hypothetical state of stationary equilibrium” (Hayek 1975a: 226). In response to suggestions for marginal cost pricing in a socialist state, Hayek (1975a: 229) argued that “the competitive or necessary cost cannot be known unless there is competition.” What are the assumed “givens” or data of an economic model are information to be discovered in the real world in a competitive process. That is the knowledge problem in a nutshell.

The socialist calculation debate ended inconclusively for many economists, “a draw” as Caldwell (2004: 338) phrased it. But Hayek continued working on the knowledge problem. “Economics and Knowledge,” reprinted in Hayek (1948), was originally a 1936 lecture, published in *Economica* in 1937. It thus follows temporally on the socialist calculation debate, though I will soon connect it logically to a different part of Hayek’s work.

First, Hayek (1948: 34) linked the equilibrium concept to having correct foresight. He also observed that the concept of equilibrium has “a clear meaning only when confined to the analysis of the action of a single person.” Analyzing the interactions of different individuals introduces “a new element of altogether different character” (Hayek 1948: 35). Actions for a single individual are in equilibrium only if they are part of “one plan” (Hayek 1948: 36). We can speak of a state of equilibrium for a moment in time only if the plans of all individuals are “mutually compatible.” Any change in data would upset such equilibrium (Hayek 1948: 41).

In this seminal article, Hayek introduced the concept of equilibrium as plan coordination. To achieve it, the economist must assume perfect foresight or introduce assumptions about learning (Hayek 1948: 42, 45–46). Both moves are fraught with difficulties.

²Hayek dealt here with the narrow issue of an engineer’s acquisition of new technical information. The broader issue of acquisition is taken up from different perspectives in the Austrian economics and human capital literatures. Kirzner (1973) and Schultz (1975) are classics in their respective fields.

Equally important as his equilibrium concept was Hayek's analysis of the "division of knowledge," the fact that the knowledge needed to achieve equilibrium is dispersed among all the individuals in the economy. Equilibrium could be brought about "by deliberate direction only by somebody who possessed the combined knowledge of all those individuals" (Hayek 1948: 51).

I agree with Caldwell (2004: 337) that "Economics and Knowledge" is a "key document," but I don't agree with him that it "marked a change in the direction" of Hayek's thinking. Caldwell elaborates by saying that "Hayek came to have doubts about the ability of static equilibrium theory to capture certain essential features of a free market economy." But Hayek harbored such doubts long before this article, and the article is neither the first nor even the most complete statement of Hayek's views on equilibrium over time. Those descriptions belong to a 1933 lecture, "Price Expectations, Monetary Disturbances, and Malinvestments."

Hayek delivered that lecture in Copenhagen. It was published in German in 1935 and next in French in 1935. It was not available to English speakers until translated and included in Hayek ([1939] 1975b). So Hayek's 1937 article was novel at the time for an English audience.³ But modern researchers should not be confused by the chronology.⁴

Hayek (1975b: 137–38) began by clarifying that he was explaining "dynamic phenomena" —that is, processes that take place over time. He focused on the problem of economic fluctuations, and explored the self-reversing character of expansions financed by money creation. Intertemporal equilibrium entails correspondence between the multiperiod spending plans of consumers with "the separate and independent decisions" of entrepreneurs to supply the desired consumption goods at all relevant future dates. Correspondence among all these plans is what is entailed when economists say that "savings are equal to investments" and there is "an equilibrium rate of interest" (Hayek 1975b: 153–54).

Hayek's analysis presented a challenge for all who would extend the concept of the equilibrium of an individual, or static equilibrium, to

³Hayek ([1939] 1975b: 140n1) refers to Hayek's 1937 article as presenting a "further elaborated and partly revised" discussion of the relationship between equilibrium and foresight.

⁴O'Driscoll (1977: 94, 102) identified the priority and importance of the Copenhagen lecture.

dynamic equilibrium in a world of monetary disturbances and changing expectations. The essay's title reflected the focus on monetary policy. If the achievement of intertemporal equilibrium is a challenge, then so, too, is the implementation of an optimal monetary policy. Hayek's articulation of the knowledge problem called into question demand management or countercyclical monetary policy before those concepts were fully developed. As he stated it in an earlier work, "We must be painfully aware at the present time . . . how little we really know of the forces we are trying to influence by deliberate management; so little indeed that it must remain an open question whether we would try if we knew more" (Hayek [1933] 1966: 23).⁵

Hayek returned many times over the ensuing decades to the knowledge problem. He extended his analysis from monetary policy to economic and social policy. Hayek (1973: 12) observed that "complete rationality of action in the Cartesian sense demands complete knowledge of all the relevant facts." An engineer needs all the data in order to control an engineering process, as does a social engineer. "But the success of action in society depends on more particular facts than anyone can possibly know." The "division of knowledge"—its dispersal throughout society—impedes the exercise of social control.

Added to the problem of localized or dispersed knowledge is the fact that knowledge is often tacit. Individuals have unarticulated knowledge of how to act and adapt to circumstances, but they have no "theory" or explicit understanding why certain behavior "works." It is a distinction famously made by philosopher Gilbert Ryle ([1949] 2002) between "knowing how" and "knowing that." As Caldwell (2004: 337) observed, "The dispersion of such knowledge is a permanent condition of life." The dispersion is permanent because, by its nature, tacit knowledge cannot be articulated and, hence, cannot be conveyed.

Hayek's earliest work on the knowledge problem was in monetary economics and the problem of the formation of intertemporal equilibrium, a problem that appeared almost insurmountable at the time. It is a profound coordination problem among millions of consumers and producers with entrepreneurs at the center of it. To superimpose

⁵Once again, there is a chronology issue. *Monetary Theory and the Trade Cycle* is an English translation of an earlier work published in German, which constituted the theoretical underpinnings of *Prices and Production* and other works. Hayek's works did not appear in English in the order in which they were originally written.

monetary shocks on the process is to put a spanner in the works. To suppose that a monetary authority could counterbalance shocks is to assume that the authority can resolve the knowledge problem. The monetary authority is very much in the same position as the planning authority in a centrally planned economy. The monetary authority must be able to assemble all the dispersed bits of information in an economy to ascertain, much less achieve, a monetary equilibrium. In essence, the problem of implementing an optimal monetary policy is one with the problem of socialist calculation. Implementing optimal monetary policy requires surmounting the knowledge problem, which cannot be done.

Friedman on the Knowledge Problem

It is well known that Friedman believed monetary policy had a more powerful impact on the economy than did fiscal policy. His empirical work, and that of his students, led him to conclude: “There is extraordinary empirical stability and regularity to such magnitudes as income velocity that cannot but impress anyone who works extensively with monetary data” (Friedman 1956: 21). According to that and similar statements, a simple version of Friedman’s monetarism emerged.

Velocity is more stable than the fiscal multiplier; thus, monetary policy is more effective at stabilizing macroeconomic variables than is fiscal policy. Such an interpretation is an impoverished view of Friedman’s position.

I don’t believe it was anyone’s intent to present this simplified view as the whole of monetarism—and certainly not Friedman’s. It may have been an unintended consequence of the empirical work done at the Research Department of the St. Louis Federal Reserve Bank, and especially the pioneering article by Andersen and Jordan (1968). They did indeed run a horse race between monetary and fiscal variables to explain changes in the growth rates of nominal GDP. The St. Louis Fed research played an important role in the acceptance of monetarism. Nelson (2015: 297–303) assesses the research and the responses.

In a retrospective, Jordan (1986: 8) found it “ironic that the ‘St. Louis equation’ unintentionally strengthened the views of the public policymakers who wanted to ‘manage’ monetary policy to achieve different economic results.” He noted that the use of his research for

activist policy was “neither intended nor anticipated by us.” Indeed, the purpose of the 1968 article was quite the opposite.

Friedman (1962) discussed the argument over rules versus discretion in monetary policy. With monetary discretion, “The wrong decision is likely to be made in a large fraction of cases because the decision-makers are examining only a limited area and not taking into account the cumulative consequences of the policy as a whole.” By contrast, “If a general rule is adopted for a group of cases as a bundle,” the rule has “favorable effects on people’s attitudes and beliefs and expectations” (Friedman 1962: 53). Today, we would say that a rule anchors people’s expectations.⁶

Friedman factored the knowledge problem into his condemnation of discretionary monetary policy conducted by an independent central bank. He described it as “a bad system” for two interrelated reasons. First, it is bad “for believers in freedom” to give a few men “such power without an effective check by the body politic.” Second, “mistakes, excusable or not, cannot be avoided” in such a system (Friedman 1962: 50). Unavoidable errors are an essential feature of discretionary policy. In this early statement of his position, such risks can be reduced by adherence to a rule. Reliance on rules in the face of ineluctable uncertainty is what most closely links Friedman to Hayek in monetary economics.⁷

Friedman’s 1967 presidential address at the American Economic Association meeting advanced his position on the knowledge problem for a wide professional audience. On the question of what monetary policy can accomplish, he first presents a negative proposition: “Monetary policy can prevent money itself from being a major source of economic disturbance.” His second proposition is a positive statement: “Monetary policy [should] provide a stable background for the economy” (Friedman 1968: 12–13). Neither statement suggests a view that monetary policy is an appropriate tool for activist, macroeconomic stabilization. Indeed, he quickly rejected such a view.

Friedman allows for the ability of monetary policy to offset “major disturbances” (known exogenous shocks) such as high fiscal deficits

⁶Friedman’s statement is Humean in tone, which links him to Hayek philosophically. It embodies a rule utilitarian argument. On Hayek and Hume, see O’Driscoll (2015a).

⁷Friedman (1962: 11) is the only citation to Hayek in that work, and it is for the latter’s “emphasis on economic freedom as a means toward political freedom.”

and wars. He is not sanguine about a monetary authority's ability even in the case of large, known shocks. But he cautions against attempts to offset minor disturbances because "We simply do not know enough." He also cautions for policy humility: "The best is likely to be the enemy of the good. Experience suggests that the path of wisdom is to use monetary policy explicitly to offset other disturbances only when they offer 'a clear and present danger'" (Friedman 1968: 14).

The knowledge problem led Friedman (1968: 17) to a simple monetary rule that fixed the growth rate of a monetary aggregate, which he first proposed in 1960, that "would provide a monetary climate favorable to the effective operation of those basic forces of enterprise, ingenuity, invention, hard work, and thrift that are the true springs of economic growth. That is the most that we can ask from monetary policy at our present stage of knowledge."

Friedman's concern with the knowledge problem and his adoption of policy rules as a solution to it predates his presidential speech and the other cited works. "Friedman was already advocating rules . . . before his monetarist theoretical position came to fruition. But Friedman's case for rules did rely on a strong theoretical motivation: in particular, the possibility that stabilization policies might give rise to destabilization of the economy" (Nelson 2015: 204).

That concern goes back at least to his 1947 review essay of Abba Lerner's *Economics of Control*. Also, in 1948, Friedman coined the "long and variable lags" phrase. He continued developing the idea of "destabilizing stabilization policy" in other papers (Nelson 2015: 204). The focus on the knowledge problem goes far back in Friedman's work, again predating monetarism itself.

Though not his last, "The Role of Monetary Policy" is an authoritative statement of Friedman's view of the subject. The argument is fundamentally about knowledge and its limitations. He viewed monetary policy institutionally, and monetary institutions as a background condition. The "true springs of economic growth" lay elsewhere. The argument relies not at all on the relative stability of velocity. Indeed, tellingly, neither "velocity" nor its counterpart—the demand for money—appear in the text.

The knowledge problem was not as all pervasive in Friedman's work as it was in Hayek's. With Hayek, it pervades the entire corpus of his work from early work on monetary theory through the socialist calculation debate, the articles on prices and competition, the work

on political theory, and especially the later work on law and liberty. It is likely that the argument on the necessity of rules for an uncertain world in Hayek (1960) and Hayek (1973) influenced as many economists today as did the earlier works on economics.

Friedman never fully resolved the tension between two arguments: one for the efficacy of monetary policy and one for a monetary rule. First, he argued for the relative stability of velocity over the fiscal multiplier. That made monetary policy powerful. The argument for the efficacy of monetary policy assumes knowledge about the structure of the economy.

Second, he invoked the knowledge problem in support of a monetary rule. That is a statement of the economist's constitutional ignorance of the economy's structure.

The first argument supports a monetary rule, especially if deviations in velocity from trend are unpredictable. The second argument makes the stronger case for rules over discretion.

The profession at large accepted Friedman's argument for the efficacy of monetary policy, but not his argument for a monetary rule. The profession rejected or just overlooked Friedman's analysis of the knowledge problem. In effect, the profession has accepted what I term the impoverished view of Friedman's position.

There are two reasons for this outcome. First, as noted, Friedman did not consistently emphasize the knowledge problem. Friedman's intellectual biographer, Edward Nelson, notes that there is a general problem in interpreting Friedman. "Friedman wrote prolifically—and yet nothing that consolidated his views into a single definitive statement" (Nelson 2015: 13).

Second, Friedman was not generally given to theorizing for its own sake. He developed a theoretical argument only as far as needed to make an empirical argument or conduct an empirical test. Consequently, Friedman's argument was not as fully developed as Hayek's.

Nonetheless, a full reading of Friedman puts the knowledge problem at the center of his work on monetary policy. Friedman and Hayek belong in the same monetary tradition in so far as they both took the problem seriously. Their congruence on this important issue has been overlooked in part because they disagreed fundamentally on what constitutes the appropriate monetary rule. Friedman advocated a rule of steady money growth. Hayek rejected that for a number of reasons (Ebenstein 2001: 277–78; and Caldwell 2004: 297–98n11).

After entertaining a number of options over the years, including free banking and 100 percent reserve banking, Hayek opted for competitive currencies (Hayek [1937] 1971, 1976).

I have focused on the contributions of Hayek and Friedman. Other monetary economists have emphasized the importance of uncertainty in a manner congruent with the Hayek/Friedman analysis. Karl Brunner and Allan Meltzer are notable. Meltzer (2015) reprises their contribution. Meltzer (2015: 4) notes that “uncertainty in the sense of Knight and Keynes” was central to their monetary theory and analysis of monetary policy. Axel Leijonhufvud must also certainly be cited for his work on information and coordination (Leijonhufvud 1981). And, though not a monetary economist (though he wrote about money), I must cite the work of Armen Alchian for whom uncertainty was a fundamental element in every economic problem. Benjamin (2006) contains seminal Alchian contributions. On the knowledge problem generally, Sowell (1996) represents a seminal contribution. All these figures had an association with UCLA, which is not surprising. UCLA in that era was where Chicago and Vienna intersected, and the UCLA tradition drew from both schools.

Knowledge Today

The work of John B. Taylor (2009) and others continues the Hayek/Friedman tradition in monetary economics today. The literature on nominal GDP targeting is outwardly rule based. McCallum (2015) has argued, however, that looks can be deceiving. Depending on how the rule is specified, one can end up with a policy that looks more like discretion.

Many economists who advocate a monetary rule do so based on purely technical arguments. These, in essence, conflate Friedman’s two separate arguments in support of a monetary rule. If one were to go back to Friedman, it would be to Friedman (1968).

Hayek provides an even firmer foundation. And one need not go back to his early writings. His later work, particularly Hayek (1973), provides his fullest statement of the case for employing rules in social policy (broadly conceived). He analyzed the process by which an order becomes emergent.

By “order” we shall throughout describe a state of affairs in which a multiplicity of elements of various kinds are so related

to each other that we may learn from our acquaintance with some spatial or temporal parts of the whole to form expectations concerning the rest, or at least expectations which have a good chance of proving correct [Hayek 1973: 36].

Hayek substituted the concept of order for the more stringent, and unattainable concept of equilibrium. There is “order” if individuals can orient themselves to each other and form expectations with a tolerable degree of certainty as to what others will do. Individuals will be coordinated with respect to patterns, and make inferences about what is unobserved.

O’Driscoll and Rizzo (2015: 130) provide an example. Two professors meet regularly to discuss a book they are writing jointly. They are coordinated with respect to the typical features of their meetings, such as time and place. They know that they will discuss the broad themes of the book, and perhaps even a particular set of them. They cannot know or predict the exact content of their discussions, however. Those will be the unique and unpredictable features.

The plans of [professors] A and B are coordinated, therefore, in the sense that each will come into the office on the proper day and at the proper time, but they are not coordinated in the sense that each has planned what to say to the other. There is an open-endedness to their plans that allows for spontaneity or novelty. This is pattern coordination.

Hayek used the term “pattern prediction,” while O’Driscoll and Rizzo used “pattern coordination.” The concept is the same. The future cannot be predicted or forecast, though we can form expectations on the basis of recurrent patterns. There will always be an element of surprise, however. There will be features of such an economic order that would not exist in a full, intertemporal general equilibrium model.

For example, in the face of uncertain demand, firms will hold inventories to minimize the costs of transitory or unanticipated shifts in demand. Constant repricing would be more costly than the costs of holding inventories. As Alchian ([1969] 2006: 58) noted, “Inventories economize on costs of information. Inventories may appear to be idle, excess, or unemployed resources, but they can be interpreted as an economical use of resources.” These economic conventions are adaptations to a world in which perfect plan coordination (“equilibrium”) is impossible. What would be waste in a general equilibrium model is adaptive behavior in a world of uncertainty and partial knowledge.

What then can we say about achieving monetary order? First, it must be rule based. Actors can orient to each other if they are following rules. Each actor is unable to predict precisely the actions of all other actors with whom he interacts. If he knows they are following rules, however, he can narrow the scope of uncertainty. To take a nonmonetary example, if there is a strong rule of law applicable to all, the purchaser of a product from a stranger faces a reduced risk of a fraudulent transaction.

If monetary policy is rule bound, then expectations can be more readily formed. Today, Federal Reserve officials attempt to anchor expectations without a rule. They do so by “forward guidance.” The problem with forward guidance is that it is a statement about what officials believe today, not what they will do tomorrow. Forward guidance is a nonbinding commitment, which is data driven. Absent a binding rule, policymakers will make repeated journeys down the road to time inconsistency (Kydland and Prescott 1977). Not surprisingly, the forward guidance on when the FOMC will raise short-term interest rates has changed numerous times. In the process, monetary policymakers have generated increased volatility in financial markets. Forward guidance is producing the opposite of its intended result. By contrast, a credible rule would reduce uncertainty and volatility.

Second, the complexity of the world suggests simple rules.⁸ Rules are effectively ways to reduce the information requirements of a complex coordination problem. Rule complexity would defeat the purpose of having rules. The more complex the phenomena, the stronger the case is for simple rules.

The Hayekian analysis of the emergence of order confirms Friedman’s intuition for a simple monetary rule. I am not suggesting that the analysis ratifies Friedman’s precise choice of a rule. That would be paradoxical, since Hayek famously disagreed with Friedman on that point. I am simply arguing that a Hayekian analysis buttresses the case for rule-governed behavior in monetary policy. And it does so based on an intellectually rigorous analysis of the role played by rules in an uncertain world. Understanding the knowledge problem is critical in the debate over monetary reform. Evolving a monetary order is more than a problem of technical economics.

The argument for a monetary rule is ultimately the same as that for the rule of law (O’Driscoll 2012). One can always construct an

⁸I am consciously borrowing the title, if not the argument, of Epstein (1995).

example in which it would be “better” to suspend legal rules in order to effect a better outcome in a particular case. The problem with this attitude is that soon you would have no rule. More to the point for this article, we do not in fact have the knowledge of all the consequences of suspending a rule in discretionary fashion. The knowledge assumed in the constructed example is not given in the real world (Friedman 1962: 51–53).

Some public choice theorists have made money into a quasi-constitutional issue and even used the term “monetary constitution.” White, Vanberg, and Kohler (2015) revive that tradition. Money as a constitutional issue was perhaps first articulated by Ludwig von Mises, who influenced some of the public choice theorists. Mises (1971: 414) described “the idea of sound money . . . as an instrument for the protection of civil liberties against despotic inroads on the part of government. Ideologically it belongs in the same class with political constitutions and bills of rights.” Mises carried the argument over monetary policy from the merely technical to the political.

Both Hayek and Friedman argued that monetary discretion was a danger to both political and economic liberty. In *Capitalism and Freedom*, Friedman (1962: 50) described monetary discretion as “a bad system . . . because it gives a few men such power without any effective check by the body politic—this is the key argument against an “independent” central bank.” In volume 1 of *Law, Legislation, and Liberty*, Hayek (1973: 56) argued that “freedom can be preserved only by following principles and is destroyed by following expediency.”

Conclusion

The knowledge problem in society is an idea most closely associated with Hayek, who analyzed it extensively in different contexts over a period of more than five decades. He developed a comprehensive theory of the production and use of knowledge in society. He emphasized that knowledge is inherently dispersed and localized, and cannot be concentrated in one mind or the minds of a few experts.

Hayek first analyzed the knowledge problem in presenting his theory of monetary disturbances, expectations formation, and malinvestments. He advanced the theory later in his work about political and legal theory and about the organization of society. Some of his later work about rules and order appears to have influenced contemporary economic theorists.

In this article, I have emphasized the importance of the arguments about knowledge and decisionmaking articulated by Hayek and later by Friedman in the context of monetary policy. The idea of optimal monetary policy is problematic in a world of dispersed information. The consequence of the knowledge problem for monetary policy is encapsulated in the Hayek quote at the beginning of this article. Hayek and Friedman agreed that we know too little to design an optimal monetary policy. We can achieve monetary order but may have neither order nor equilibrium if we try for more. A monetary rule facilitates the emergence of a monetary order. The argument for a monetary rule has gained increasing acceptance among monetary economists today. Rep. Kevin Brady (R-Tex.) has proposed the creation of a Centennial Monetary Commission. The commission would examine alternative monetary regimes and make recommendations. In the last Congress, the “Federal Reserve Accountability and Transparency Act of 2014” (H.R. 5018) was introduced to mandate the Federal Reserve adopt a rule (the Taylor rule or an alternative). And O’Driscoll (2015b) advocated the creation of a private committee to study and make recommendations for monetary reform. So there is today the prospect for adopting a monetary rule. What is unresolved is the choice of a particular rule. That will require a great deal of additional analysis.

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NEEDED: A FEDERAL RESERVE EXIT FROM PREFERENTIAL CREDIT ALLOCATION

Lawrence H. White

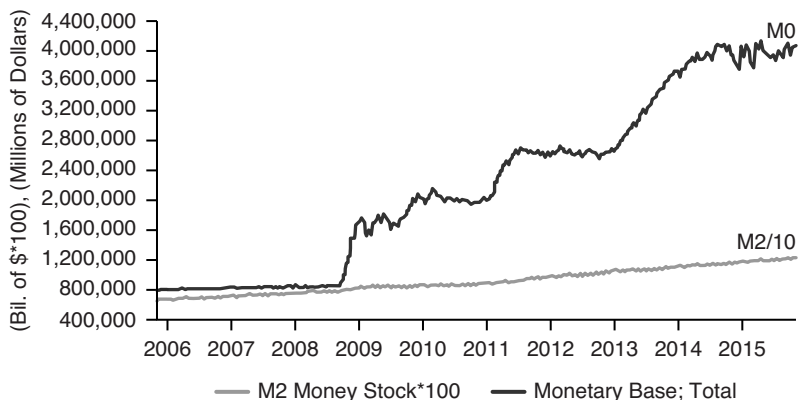
In September 2008, the Federal Reserve initiated a series of quantitative easing (QE) programs that dramatically transformed the Fed's balance sheet—in size, liability mix, and asset mix. The “exit strategy” questions now facing the Fed, and the dollar-using public who are its captive customers, are when and how to reverse those transformations.

On the liability side of the Fed's balance sheet, QE swelled the stock of base money (the subset of the Fed's liabilities consisting of currency held by the nonbank public plus depository institutions' reserves) more than four-fold. Contrasting October 2015 to August 2008, the base rose to \$4.06 trillion from \$0.85 trillion. The mix of Fed liabilities shifted as approximately \$2.6 trillion of the \$3.2 trillion in new base money was added to the reserve balances of depository institutions (the other \$0.6 trillion was added to currency held by the public). Total bank reserves have grown more than 50-fold, to \$2.7 trillion from a mere \$0.05 trillion. Only a tiny share of the added reserve holdings (about \$0.1 trillion) are accounted for by the growth in required reserves accompanying growth in commercial bank deposits held by the public; the bulk are voluntarily held as excess reserves (balances over and above legally required reserves against deposits). Excess reserves have risen to \$2.5 trillion and 62 percent

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FIGURE 1
 THE FED GREATLY EXPANDED THE MONETARY BASE (M0)
 BUT KEPT M2 ON ITS PRE-CRISIS PATH



of the monetary base, from only \$0.002 trillion and close to zero percent (about two-tenths of 1 percent) pre-QE.¹

While the QE programs accelerated the monetary base (hereafter M0) at an unprecedented rate, Figure 1 shows that they did not accelerate the quantity of money held by the public as measured by the standard broad-money aggregate M2 (currency in circulation plus all bank deposits). During the pre-QE decade of September 1998–September 2008, the Fed expanded M0 at a compound rate of 5.99 percent per annum. The expansion rate jumped to 23.69 percent per annum during September 2008–September 2015. The growth rate of M2 has fluctuated a bit but hardly changed over the longer term: 6.3 percent per annum in the pre-QE decade and 6.6 percent since the beginning of QE. The fact that M2 has hardly budged from its established long-term path indicates that *quantitative easing was not a change in monetary policy*, in the sense that it was not used to alter the path of the standard broad monetary aggregate in a sustained way.²

¹Figures are from the St. Louis Fed’s FRED database, series BOGMBASEM, TOTRESNS, REQRESNS, EXCSRENS, and author’s calculations based on those figures.

²The growth rate of the alternative broad aggregate MZM meanwhile fell to 6.4 percent from 8.7 percent.

The growth rate of the M1 component of M2 (currency plus only checking deposits) did rise faster, to 11.5 percent per annum from 3.0 percent. But because M2 as a whole did not grow faster, this only indicates that households have reduced the share of their total bank deposits in savings (non-M1) accounts and increased the share in checking accounts. This shift can be explained primarily by households responding to a collapse in the spread between savings and checking account interest rates, both rates falling to near zero. The national average rate on three-month CDs, for example, tumbled to 16 basis points in September 2015 from 359 in September 2008, while the rate on interest checking declined far less, to 4 basis points from 20.³

Why didn't M2 grow faster? As money-and-banking textbooks tell us, the growth rate of M2 mirrors the growth of M0 when the commercial banking system sheds excess reserves by banks making loans and securities purchases such that system deposit liabilities grow in proportion to system reserves. After September 2008, however, banks began sitting on the additional reserves the Fed was creating. They did so largely because the Fed almost simultaneously—and not coincidentally—began paying interest on reserves in early October 2008. With a higher reward for holding reserves, banks began holding greater reserves in excess of legal requirements, which meant that the system began creating fewer deposit dollars per reserve dollar. The ratio of excess reserves to deposits rose from a fraction of 1 percent in September 2008, before QE began, to 24 percent today. This enabled M2 to continue along its pre-QE path despite the huge increase in M0.

The initiation of interest on excess reserves (hereafter IOER) and QE at the same time was no accident. The Fed chose to start paying IOER in order to neutralize the flood of excess reserves that QE1 and other Fed lending programs were creating. Fed spokesmen have at times described the rationale for initiating IOER as a move to counteract downward pressure on the federal funds rate (the overnight interest rate at which banks lend reserves to one another) from excess reserves (Dr. Econ 2013). Instead of trying to get rid of excess reserves by lending them and in the process driving the fed funds rate too low, banks would now be happy to hold the reserves.

³Figures from FRED and Bankrate.com. See McAndrews, Morgan, and Vickery (2012), who regress M2 and M1 on the one-year Treasury note rate among other variables.

This is a curious account given that the fed funds rate fell to near-zero anyway. A better explanation begins by noting that IOER, by getting banks to hold more reserves, has allowed the Fed to greatly expand its assets and consequently M0, while keeping M2 from ballooning. The combination of QE with IOER enables the Fed to finance a hugely expanded portfolio of assets without inflationary consequences, essentially by borrowing from the banking system. Without IOER, purchasing assets by expanding M0 also expands M2, which has inflationary consequences. At times, the Board of Governors has been almost frank about its policy, as for example in its original press release on October 6, 2008:

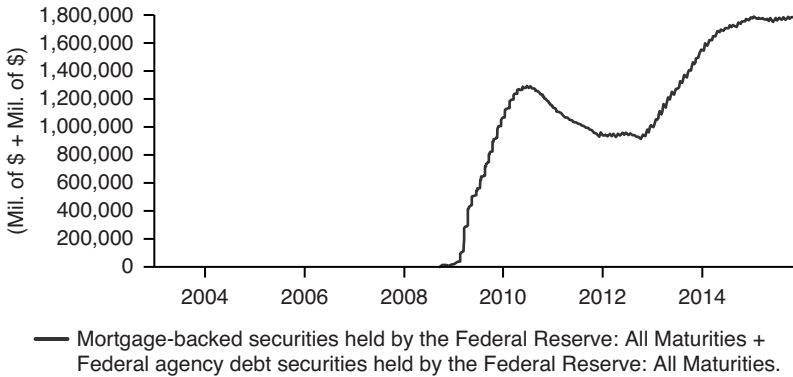
The payment of interest on excess reserves will permit the Federal Reserve to expand its balance sheet as necessary to provide the liquidity necessary to support financial stability while implementing the monetary policy that is appropriate in light of the System's macroeconomic objectives of maximum employment and price stability [Board of Governors 2008].

That is to say, it permits the Fed to expand its balance sheet as desired without corresponding expansion in M2 and the price level.

The Fed has also introduced another policy tool to allow it to keep an expanded balance sheet without corresponding expansion of monetary aggregates. In 2010, it began testing its Term Deposit Facility, whereby the Fed *borrow*s back reserve money from commercial banks for 21 days, paying the IOER rate plus 3 basis points. The term deposits are not counted as reserves, so M0 shrinks even though total Fed liabilities and the Fed's asset portfolio do not. In tests of the facility, the Fed has sterilized up to \$400 billion this way.

If not for monetary expansion, for what purpose did the Fed deem base expansion desirable? Why was the Fed so keen on purchasing trillions in assets? The reference in the above-quoted statement to providing liquidity is a red herring. The Fed could have provided all the liquidity it wanted simply by acquiring more of the same assets it already held, short- and medium-term Treasuries. Instead, as Figure 2 indicates, the Fed purchased and is now holding \$1.8 trillion in mortgage-backed securities (MBS) and housing agency debt securities (Fannie Mae, Freddie Mac, and the Federal Home Loan Banks), a drastic change from its near-zero holdings of such securities before 2008. These holdings can be seen only as part

FIGURE 2
 FEDERAL RESERVE SYSTEM HOLDINGS OF MBS PLUS
 FEDERAL AGENCY (FANNIE MAE, FREDDIE MAC, AND
 FEDERAL HOME LOAN BANKS) DEBT SECURITIES



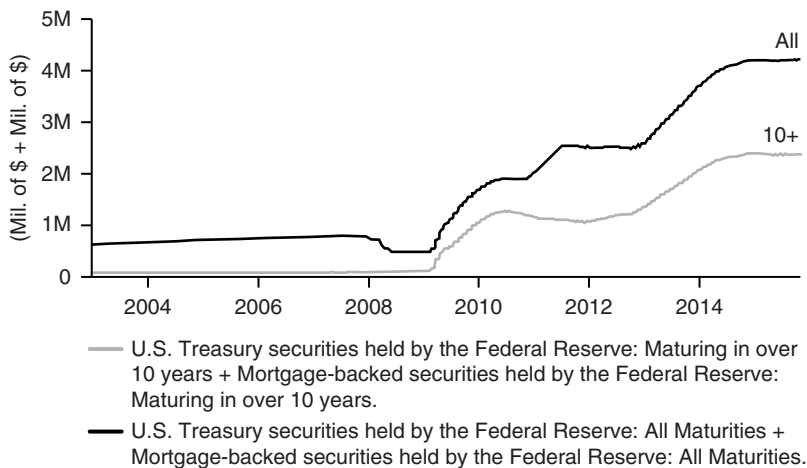
of an effort to raise MBS prices and cheapen housing finance relative to finance for other investments.

The bulk of the mortgage-backed securities the Fed holds have maturities of longer than 10 years. The Fed also purchased trillions in longer-term Treasuries (see Figure 3), again discarding its previous policy of concentrating on short- and medium-term Treasuries, in an effort to raise long-term bond prices and lower long-term interest rates relative to short rates, again to favor housing finance. By holding down longer-term Treasury rates, it hopes to hold down 15-year and 30-year mortgage rates. The Board of Governors' own website account of its "maturity extension program" puts it this way:

By reducing the supply of longer-term Treasury securities in the market, this action should put downward pressure on longer-term interest rates, including rates on financial assets that investors consider to be close substitutes for longer-term Treasury securities. . . . In response to the lower Treasury yields, interest rates on a range of instruments including home mortgages, corporate bonds, and loans to households and businesses will also likely be lower [Board of Governors 2013].⁴

⁴Loans to households and businesses, contrary to the suggestion made in the passage quoted, are seldom for 10 or more years at a fixed interest rate, so their rates are *unlikely* to be lowered much.

FIGURE 3
FEDERAL RESERVE SYSTEM HOLDINGS OF ALL SECURITIES
AND OF SECURITIES WITH MATURITIES OF 10+ YEARS

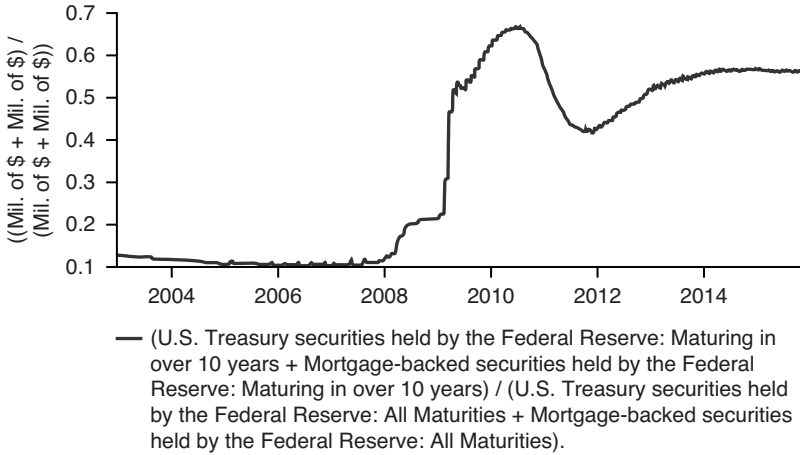


The Fed currently holds \$2.4 trillion in securities maturing in 10+ years, more than half of its entire \$4.2 trillion portfolio. As Figure 4 shows, using the same data as Figure 3 but in share-of-portfolio terms rather than dollar amounts, the share of the Fed's portfolio in such long-term securities was only about 10 percent at the start of 2008.

There is also an unstated fiscal effect, intended or not, from the Fed's move to longer maturities: the Fed enjoys higher interest earnings at the long end of the yield curve, which benefits the Treasury as the Fed rebates more dollars to the Treasury.⁵ For other financial institutions, borrowing short and lending long (without hedging the duration gap) is a risky strategy that endangers solvency, but the Fed's insolvency risk is almost a nonissue. The Fed's "liabilities" never have to be repaid in something it can't create ad lib, and even the interest rate it pays on reserves is discretionary and could be cut to zero tomorrow (although, to be sure, the Fed does not want to cut the IOER rate given the inflationary

⁵This was quickly noticed by Willem Buiter (2009), who referred to Ben Bernanke as "the man who allowed the Fed to be turned into an off-budget, off-balance sheet subsidiary of the U.S. Treasury."

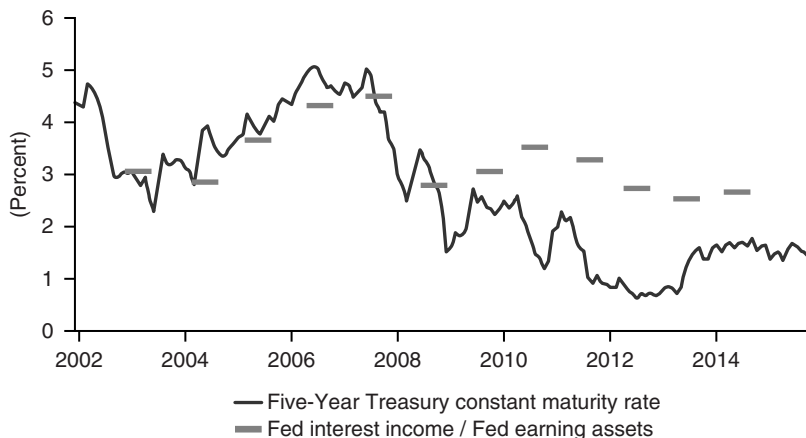
FIGURE 4
SHARE OF THE FED'S SECURITIES PORTFOLIO WITH
MATURITIES OF 10+ YEARS



consequences). The Fed, by enlarging its duration gap, does increase the risk that it would become insolvent on a mark-to-market basis should market interest rate rise sharply, but the Fed does not use mark-to-market accounting. As a San Francisco Fed official (Rudebusch 2011) explained when critics first began raising the concern: “The Fed values its securities at acquisition cost and registers capital gains and losses only when securities are sold. Such historical-cost accounting is . . . consistent with the buy-and-hold securities strategy the Fed has traditionally followed.” Even a technically insolvent Fed could easily cover its payroll expenses from its interest income.

The Fed's *Annual Report* shows that it received \$116.6 billion in interest income during 2014, for a 2.76 percent return on its \$4.22 trillion average asset portfolio. If, instead, the Fed had held its entire portfolio in one-year Treasuries yielding 12 basis points, its interest income would have been only \$5.1 billion, not enough to cover its \$6.9 billion in interest payments on bank reserves plus its operating expenses of \$1.9 billion. Its transfer to the Treasury, instead of \$96.9 billion, would have been negative. For five-year Treasuries, the yield during 2014 averaged about 164 basis points. The corresponding interest income from a Fed portfolio entirely of five-year Treasuries would have been \$69.2 billion, some \$47.4 billion shy of its

FIGURE 5
 BY LENGTHENING ITS PORTFOLIO AFTER 2009,
 THE FED KEPT ITS AVERAGE YIELD ABOVE THE DECLINING
 FIVE-YEAR T-BOND RATE



actual interest income.⁶ The actual median maturity of the Fed’s securities throughout 2014 was more than 10 years.⁷ Figure 5 shows how the realized return on the Fed’s portfolio roughly tracked the five-year bond rate up to 2008 but has risen well above it since then, indicating that the Fed has moved toward the higher yields available at the long end of the yield curve. Yields on 10-year Treasuries during 2014 were slightly below the 2.76 percent return that the Fed received. The Fed’s realized portfolio rate of return matched the yield on a Treasury bond of about 11 years maturity.

The combination of QE + IOER, not a monetary policy, is best understood as a preferential credit allocation policy. Elsewhere (White 2015b), I have tried to spell out why allowing the Fed to conduct a preferential credit allocation policy is a bad idea. To summarize: credit allocation policy is a kind of central planning in which Federal Reserve officials, risking not their own money but that of

⁶The 2014 asset portfolio size is calculated as the simple mean of the figures reported on H.4.1 releases for Reserve Bank Credit at the beginning and end of 2014. The yield figures are the arithmetic means of monthly one-year and five-year Treasury constant maturity rates over the course of the year. Interest income and payments are from the Fed’s 2014 Annual Report.

⁷Federal Reserve H.4.1 weekly releases, Table 2.

taxpayers, substitute their judgment for the financial market's about the right prices of various securities and the proper shares of the flow of funds that should go to specific segments of the financial market. When the Fed directs a larger share of credit to one favored sector (like housing), more promising sectors get smaller shares, a waste of scarce loanable funds on lower-payoff investments. Fed-directed allocation of funds to a declining industry throws good resources after bad. An increase in political credit allocation reduces economic growth not only by creating deadweight loss in this way, but by incentivizing socially unproductive lobbying efforts to be among the favored credit recipients.⁸ Especially if the Fed allocates funds to rescuing particular firms, it creates tremendous moral hazard and an environment ripe for cronyism.⁹

The importance of an exit strategy from the Fed's currently anomalous balance sheet is not only for the sake of ending an abnormal monetary policy, then, but also for the sake of ending an abnormal, inefficient, and dangerous credit allocation policy.

Monetary Policy Normalization

Seen in this light, the Fed's talk about "normalizing monetary policy" deliberately evades the equally important issue of ending preferential credit allocation. Ben Bernanke declared in June 2013 that "a strong majority now expects that the Committee will not sell agency mortgage-backed securities during the process of normalizing monetary policy."¹⁰ Chairwoman Yellen (2014) has similarly spoken about normalization only in terms of a return to fed funds targeting:

As was the case before the crisis, the Committee intends to adjust the stance of monetary policy during normalization,

⁸For example, in 2015, lobbyists for the Commonwealth of Puerto Rico promoted the idea that since the Federal Reserve has used its discretion to buy bad assets and save firms in the housing finance industry in the name of systemic stability, it could now use its discretion to buy up Puerto Rican bonds or otherwise extend credit to help Puerto Rico restructure its debt in the name of systemic stability (see Capitol Forum 2015, Jansen 2015).

⁹Thus Buiter (2009) offered a second apt indictment of Ben Bernanke: "He has, however, apparently decided to go down in history as the Federal Reserve chairman who presided over the creation of the biggest moral hazard machine ever."

¹⁰Quoted by Hummel (2014), who aptly comments that "these developments highlight the extent to which quantitative easing is converting the Fed into a financial central planner."

primarily through actions that influence the level of the federal funds rate. . . . The primary tool for moving the federal funds rate in to the target range will be the rate of interest paid on excess reserves or IOER. . . . The committee intends to use an overnight reverse repurchase agreement facility which . . . will help ensure that the federal funds rate remains in the target range.

She affirmed that the Fed's normalization plan does not include an end to the Fed's attempt to favor housing finance: "The Committee does not anticipate selling agency mortgage backed securities as part of the normalization process." The minutes of FOMC meetings during 2015 consistently repeated language to the same effect: "The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction."

Yellen's reference to the FOMC's intention to use overnight reverse repurchase agreements alludes to a technical problem that the Fed faces in trying to return to pre-2008 fed funds targeting practices without reversing its QE asset purchases. The fed funds market for overnight loans of base money between financial institutions isn't what it was. Commercial banks awash with excess reserves do not need to borrow more for liquidity purposes. And they are not keen to lend reserves at anything less than the interest rate they currently receive from the Fed for holding them. Over the last four years, the effective daily fed funds rate has ranged between 4 and 19 basis points (it was 12 at the end of October 2015), whereas the IOER rate has consistently been above that range at 25 basis points. The volume of fed funds on loan in September and October 2015 was approximately \$50 billion, only one-eighth of the \$400 billion volume in September 2008.¹¹ Alfonso, Entz, and LeSueur (2013) find that Federal Home Loan Banks, not eligible for IOER, have done three-fourths to five-sixths of the shrunken volume of lending since IOER began. They speculate that the marginal borrowers hold the borrowed funds in their accounts at the Fed, earning the difference between IOER rate and the fed funds rate. If so, this suggests that the effective fed funds rate tracks below the IOER rate by the transaction cost (10 basis points or so) of carrying out the operation. With

¹¹FRED series FRPACBW027NBOG, Fed Funds and Reverse RPs with Banks, All Commercial Banks.

a basically horizontal demand curve, the low volume transacted reflects the limited supply from the Home Loan Banks.

In circumstances of excess reserve abundance, it isn't clear that raising the fed funds rate, assuming it can be done just by raising the IOER rate, would be relevant at the margin for broader credit market conditions. The Fed tacitly recognizes this problem when it proposes to conduct reverse repo transactions (selling securities with an agreement to repurchase the next day at a higher price, shrinking M0 overnight), and Term Deposit Facility borrowings from the banks, to make reserves scarcer. It is not known how large these transactions will need to be to make excess reserves scarce enough for commercial banks to start wanting to borrow appreciable sums at the fed funds rate. If they need to be \$2 trillion each night, say, that would involve relatively large transaction costs for the Fed.

The Fed's expressed preference for making reserves scarce by borrowing them back in large volumes, rather than simply selling off assets once and for all, shows again how devoted it is to maintaining its swollen portfolio of MBS.

What to Do

As Jeffrey Hummel (2014) notes, there is a "real danger" that the Fed feels "no real need to normalize its balance sheet and therefore may not do so." In that case, to remove the Fed from preferential credit allocation, Congress would have to require it to normalize. Declarations by FOMC officials that they will act according to self-adopted "guidelines" are not time consistent. Fed leadership will find ample good reasons to use preferential credit allocation when the time comes to offset weakening in housing finance or other perceived threats to financial stability. To paraphrase what Buitter (2009) has said about a former Treasury official and moral hazard, Fed officials address the issue of undoing the Fed's huge holdings of mortgage-backed securities only when they feel the need to defend their continued preferential credit allocation by declaring that "now is not the time to worry about it." On the contrary, the moment when sticking to a principle seems difficult is exactly the time to worry about the long-run consequences of breaching it.¹²

A straightforward way to separate the Fed from preferential credit allocation among sectors of the private economy, without major

¹²As I have argued at greater length (White 2010).

changes to the institutional status quo, is to require the Fed to hold only U.S. Treasury obligations on its balance sheet, as recommended by Marvin Goodfriend (2014). An alternative, as discussed by George Selgin (2012: 321), is to allow the Fed to purchase non-Treasury securities only according to prescribed “objective criteria, such as issuers’ (risk-adjusted) capital and private-agency security ratings.” The Fed’s purchases of mortgage-backed securities would have been barred by any reasonable set of such criteria.

A more thoroughgoing reform would be to alter the institutional status quo so as to end the Federal Reserve System and return its useful functions to the private sector. In previous work (White 2011, 2013, 2015a, 2015b), I have made the case for alternative arrangements based on a commodity standard with free banking.

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THE NEW MONETARY FRAMEWORK

Jerry L. Jordan

Do the policy actions of monetary authorities actually affect economic activity? We know that time and other resources are expended, but what can we observe about the results of such efforts?

In answering this question, it is helpful to begin with an account of how monetary authorities in discretionary, fiat currency regimes are traditionally thought to influence economic activity. Here, every college course in intermediate monetary theory tells essentially the same story. A nation's money supply comprises two distinct components: paper currency and deposits at banking organizations. The former was the largest component in earlier times, but the latter has come to dominate in recent decades—at least in most countries. The deposits in banks are subject to minimum reserve requirements, and the total deposit liabilities of banks constitute some multiple of reserve balances (that is, vault cash plus deposits at the central bank). The banking system as a whole is thus “reserve constrained,” which means that, unless the central bank provides more reserves, there is an upper limit to the total deposits that may be held by individuals and businesses. By extension, if currency outstanding increases, and the central bank fails to add to the total supply of reserves available to private banks, then there has to be a corresponding contraction of deposit money. These reserve constraints have historically meant that, for better or worse, monetary authorities have the power to control the nation's money supply, and, in so doing, affect economic activity.

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However, this traditional account no longer holds true. The commercial banking system has ceased to be reserve constrained, and this means that *monetary authority actions to change the size of the central bank balance sheet do not affect the nation's money supply*. Now, instead of being constrained by the amount of reserves supplied by central banks, banking companies are constrained by the supply of earning assets that are available to them. And it is the supply of these earning assets that, subject to capital constraints, determines banks' aggregate deposit liabilities.

What implications does this shift have? Brunner and Meltzer (1972: 973) suggested that while it was possible for inflation or deflation to occur without changes in the monetary base, most inflations were, in practice, the result of base money expansion. That conclusion reflected the fact that the banking system was reserve constrained, so that increases in the stock of money were limited in the absence of expansion of the central bank balance sheet. However, in today's world of massive excess reserves in the banking system, the same model used by Brunner and Meltzer suggests that money creation has become a function of loan demand and the securities on offer to banks.

The new college textbook for intermediate monetary theory explaining all this has not yet been written, but when it is, it will not say that the monetary authorities control the "supply of money" and estimate the "demand for money," the objective being to prevent either an excess supply (which would cause inflation), or an excess demand (which would trigger a recession). That theoretical framework is broken—at least for now—in such a way that the monetary authorities can no longer formulate policy actions intended to influence aggregate economic activity by expanding or contracting the central bank balance sheet.

Interest Rates and Monetary Stimulus

The intermediate college course on monetary theory also offers an alternative theoretical avenue for influencing the economy—the level of *nominal* market interest rates. The basic idea is that when interest rates are lower, people borrow more to consume and invest, and when interest rates are higher, people will borrow less for consumption and investment. The big economic debate—and empirical contest—has been about the degree to which people understand the

inflation premium in nominal interest rates, as well as the before- and after-tax interest expense they will bear. The economic argument is that if people think in terms of interest rates that are adjusted for anticipated inflation and/or taxation, observed market interest rates are higher than the “real” interest that affects consumer and investor decisions.

One hypothesis is that central bank “zero-interest-rate-policy” (ZIRP) works by pushing down bond yields so that investors are driven into equities in search of higher returns. Consequently higher valuations in equity markets then create a “wealth effect,” wherein stockholders decide to increase consumption spending. Presumably, greater consumption demand will, in turn, give potential investors more confidence to forge ahead with capacity expansions and new projects.

However, this model only makes sense in a closed economy. In an open, global economic system, there is no reason to expect that increased investment and output will be domestic—even if aggregate consumer spending does respond to stock prices. This is especially so in a context of tax and regulatory policies hostile to capital formation. And surely no policymaker would argue that the best way to promote prosperity via monetary policy is to drive the trade deficit ever higher as imports outpace export growth.

Whatever the theoretical arguments, and regardless of the evidence of most of the past century, the near-zero interest rates we have seen in recent years have shown no correlation with domestically produced consumption by households, or with domestic investment activity in the private sector. In fact, an argument can be made that the low interest rate environment has reduced the demand for bank credit while increasing the demand for earning assets by non-bank lenders such as mutual funds, pension funds, and insurance companies (Jordan 2014). Hence, the liabilities of banks (i.e., demand deposits) have grown more slowly than they otherwise might have. In other words, the “low interest rates are expansionary” view conflicts with the “slow money growth is contractionary” view of the channels by which monetary authorities influence the economy.

Central Banks and Economic Growth

Another contribution to this debate about the influence of monetary authorities on the economy comes from the “market monetarists,” who

argue that central banks should focus their policy actions on achieving a target growth rate for nominal GDP that is consistent with their objectives for inflation and real economic growth. This claim, however, is the “assume we have a can opener” approach to economics. Monetary authorities once had several tools in their policy bag—reserve requirements, discount rates, interest ceilings, open market purchases and sales—that might be employed to achieve any objective they chose. But what tools do they have today to influence the pace of nominal GDP growth? What instructions can the monetary authorities give to their trading desk to achieve a faster or slower growth of nominal GDP? None!

The notions behind monetary and fiscal stimulus are, first, that that economic growth comes from getting consumers to spend or businesses to invest, and, second, that this can be brought about by government actions designed to “stimulate demand.” But that is not how growth happens. A couple of hundred years ago, Adam Smith would have laughed at the idea that consumers’ wants are satiated and must be “stimulated” by government, or that investors don’t foresee opportunities to enhance profit without the government hyping demand for something—and rightly so.

In fact, growth (i.e., rising standards of living) happens when there are opportunities for real cost reductions. Put simply, when innovations cause the information and transactions costs of doing something to decline, people do more of the now-lower-priced thing. The demand was always there. It was never necessary for either monetary or fiscal authorities of government to “promote demand” for something. Wants are insatiable. If the cost of a weekend fly-around-Mars drops dramatically, the amount demanded will rise. The notion that government can or should do something to stimulate demand is, at best, obsolete.

Monetary Policy and the Politics of Wealth Sharing

Economic progress comes from reducing the sand in the gears. Often that sand is natural—information and transaction costs, for example. In modern societies, however, many such costs are artificial, created by collusive behavior between private interests, who want to protect their turf, and government officials, who want campaign contributions. Erecting and maintaining barriers to entry from potential competitors generates more political contributions than do promises

to reduce such barriers. During the last half of the 20th century, burgeoning licensing and certification requirements created new obstacles to competition, so that innovations, new business startups, and real cost reductions slowed in many industries and sectors.

Meanwhile, political parties competed to build coalitions of voters by promising to transfer to them part of someone else's paychecks—either now or in the future. Eventually, even highly efficient and effective tax systems are no longer able to generate the collections necessary to fulfill all such promises, and political choices become unavoidable. In this dynamic, modern central banks have been part of the problem, not part of any lasting solution.

In the United States in the 1960s, promises made to individuals and households, together with rising government expenditures for the military, began to outrun tax revenues at an accelerating rate. Instead of reining in spending, the Johnson administration and then the Nixon administration cut the U.S. central bank loose from its specie anchor in three steps. First, the "London Gold Pool" was suspended; then the "gold window" was closed while the "gold cover" of U.S. currency was removed by Congress; finally, the commitment to redeem foreign-held dollars for gold was eliminated in 1973. These steps freed the central bank from any institutionalized discipline in the creation of new currency and bank reserves, and in turn removed any need for fiscal discipline. The result was accelerating inflation—the form of taxation favored by politicians for at least a couple of thousand years.

In this respect, the U.S. experience in the 1960s and 1970s was no different from that of other developed and developing countries with central banks and a monopoly national currency. Political promises of other people's money eventually added up to more than the tax system could generate, central banks were called upon to make up the difference with additional new money creation, and the ensuing inflation resulted in devaluation or depreciation of the currency. In the end, voters had been suckered into accepting nominal money units in exchange for their votes, but found the money they received did not buy as much as it had previously. They were the victims of an unholy alliance between fiscal and monetary authorities under the sway of politicians.

The recent experience of Greece is instructive. Even with a booming economy in the 1950s and 1960s, the Greek tax system did not collect enough revenue to fund all the promises politicians were

making to voters. So the country's national currency was devalued in the early 1970s and depreciated continuously for a couple more decades until the drachma was replaced by the euro. Once Greek politicians realized they could sell euro-denominated bonds to foreign investors in order to fund the promises they had made to voters, a frenzy of vote buying led to a national debt much larger than any tax system could service. Because inflation and devaluation were not possible once the Greek central bank was deprived of its power to create new money, default on the foreign-owned Greek government bonds became unavoidable.

Ironically, the absence of a national currency—and a central bank able to create more of it—had in Greece's case allowed politicians to dig a debt hole much larger than had previously been possible. This was because foreign buyers of Greek euro bonds knew that the creator of euros—the European Central Bank (ECB)—would be pressured by governments of lender countries in the eurozone to create the additional euros needed by the Greek treasury to make the interest payments to the non-Greek banks and other lenders that owned the Greek debt.

Of course, the holders of Greek government bonds do not care whether the euros necessary to pay them back with interest come from the ECB or loans from other governments to the Greek government. However, some of those other countries have very large debts of their own, so issuing even more bonds in order to finance loans (or gifts) to the Greek government was a nonstarter. The moral of this story is that effective discipline in the fiscal decisions made by politicians cannot and will not be achieved as long as there are central banks empowered to create more of the money that politicians have promised to deliver.

All bonds issued by governments and all “entitlement” promises made by governments to voters are claims on future tax collections. Historical experience has been that such government-created claims on the tax system will always grow to exceed potential future tax receipts. Yet this experience of central banking and monopoly currency appears to have had no lasting effect on the propensities of politicians to promise potential voters that, if elected/re-elected, he/she will vote to transfer other taxpayers' money to his/her supporters. In almost all democracies, the “politics of wealth sharing” has come to dominate the “politics of wealth creation.” The reason is simple. No single elected representative or group of elected

representatives has much, if any, influence over the pace at which an economy creates wealth. Any promise that newly created national wealth will benefit any one voter or even group of voters is simply not credible. However, even a single elected representative can facilitate a transfer of existing wealth to particular voters or constituents. A group of politicians, organized as a coalition or political party, can arrange this transfer of wealth on a much larger scale.

When it inevitably turns out that the aggregate of such promises exceeds the amount available for redistribution, no recipient group will voluntarily forgo their claims to other people's money. There are, of course, those rare politicians who campaign on promises to reduce some beneficiary groups' payments from government, but they are rarely elected (or reelected). And even in office, they often find themselves powerless to actually carry out their agenda.

All of this was understood very well by James Madison as he drafted the U.S. Constitution to replace the failed Articles of Confederation. The decision that the country's money should be backed by gold and silver was deliberately intended to impose fiscal discipline; since the amount of money in circulation was limited by available precious metals to back the currency, current expenditures of government, and promises of payments in the future, had to be limited to tax collections. Even when the Federal Reserve banks were created in 1914, the currency issued by these new "bankers' banks" was defined in terms of a weight of gold. *There was no provision in the Federal Reserve Act for discretionary monetary policy.*

Sadly, the United States' on-again/off-again efforts to anchor the value of the dollar to a specified weight of gold came to an end as the first six decades of U.S. central banking drew to a close. The next phase included efforts to achieve monetary discipline within the decisionmaking bodies of the monetary authority, sometimes under pressure from congressional oversight.

Learning and Unlearning from Experience

The past four decades of discretionary monetary management have been mixed, to say the least. The first decade saw soaring inflation and simultaneous increases in unemployment—contrary to widespread economic opinion at that time, there was no apparent tradeoff to exploit. With politicians and central bankers mugged by this unfortunate reality, cold-turkey monetary policy was

accompanied by tax reductions and regulatory reforms, which in turn unleashed unexploited supply-side opportunities. Prosperity flourished without monetary actions to stimulate consumption and investment demand.

The second and third of the past four decades supported the view that monetary discipline was a necessary condition—and perhaps even a sufficient condition—for fiscal discipline. The era of the “bond-market vigilantes” dissuaded politicians from incurring budgetary deficits to fund their promises to voters, and the alternative of raising tax rates was constrained by the political process.

Meanwhile, the explosion of e-commerce and the surprisingly large productivity increases throughout the economy in the 1990s helped to continuously drive the measured unemployment rate below the level at which trade-off theorists claimed that inflation would begin to surface. Instead of questioning the validity of their model, these theorists simply kept revising down where they thought the noninflationary rate of unemployment might be encountered. The puncturing of the dot-com bubble cut short this experiment, so the model was not successfully rejected by actual experience.

By the fourth decade of managing a purely fiat currency, politicians were gaining experience in the use of mandates and government guarantees to compete for voter support. There were few dissents from the view that it was the government’s job to promote home ownership. The credit standards for obtaining mortgages and other qualifications for purchasing houses were lowered, and government agencies guaranteed that investors in securities backed by home mortgages would not face losses. In that episode, the stated objectives included promoting home ownership as a good thing in itself, with any wealth effects caused by rising house prices a secondary objective. Nevertheless, the phenomenon of “mortgage equity withdrawals”—refinancing as house prices rose—generated a few trillion dollars for households to spend on consumption, driving the consumption-spending share of national output to historic record levels.

The ensuing collapse of house prices would ordinarily have been accompanied by an associated drop in the consumption share of GDP. However, the political process kicked in, and government issued massive amounts of debt in an effort to sustain aggregate demand at the “bubblenomics” levels. Any notion of fiscal discipline

was abandoned quite quickly, and with little political objection. Decades of shrinking the outstanding national debt relative to the productive potential of the economy were reversed in just a few years of political panic. The decoupling of fiscal actions from the monetary regime raised concerns that the “fiscal dominance hypothesis”—namely, that monetary policy is ultimately a fiscal instrument in a world of unanchored fiat currency—had reemerged.

Given the inability of the political process to rapidly reestablish fiscal discipline and begin to reverse the excesses of 2008–09, the widely held view was that it was only a matter of *when* the subordination of monetary to fiscal policy would show up in the form of taxation by way of inflation. For their part, monetary managers began to publicly lament that the inflation rates in the United States and other major economies were *too low*, and that policy should aim to create higher inflation. Two decades earlier, no central banker or minister of finance would have dared to suggest that inflation rates were too low and needed to be nudged higher. However, the bond market vigilantes of the 1990s were, by now, nowhere in sight. As the first decade of the new millennium drew to a close, monetary authorities around the world vowed to take strong actions in pursuit of the faster erosion of their currencies. It wasn’t just fiscal discipline that had been abandoned; ideas and theories about monetary discipline were shoved into a corner too.

Two lines of thinking drove this rush to monetary pump priming. The first was that the Great Depression of the 1930s could have been prevented if only the central bank had expanded its balance sheet sufficiently. Contemporary monetary authorities vowed not to make that mistake again. Second, the idea that there was a tradeoff between inflation and employment, which could be exploited by policymakers, reemerged. While such notions had been badly damaged by the experience of the 1990s, they returned as the dominant view among policymakers only a decade later. “Pedal-to-the-metal” monetary actions were defended on the grounds that there would be plenty of time to ease off of monetary stimulus as the rate of unemployment moved down toward the nonaccelerating-inflation threshold.

An unanticipated development was that while the unemployment rate did in fact decline, this was not because of stronger labor demand and rising employment, but rather because of an

unprecedented decline in the labor force participation rate. Even adherents to the trade-off model struggled to explain how they would know when a low reported unemployment rate would trigger higher inflation, given that any increase in the demand for labor could be met by several million people *returning* to the labor market. Clearly, the tradeoff theory holds that if labor force participation rates were already high, and monetary stimulus promoted even more demand for labor, wages would rise more rapidly, and that would be one component of faster inflation. However, with the labor force participation rate falling to a 38-year low, even if monetary actions succeeded in promoting greater labor demand, wouldn't the response simply be increases in labor supply? How can rising "wage-push" be expected to emerge and help produce higher consumer inflation if there is no excess demand for labor? Ultimately, the tradeoff model proved to be unreliable when the labor force participation rate was high; why should policymakers rely on it when the participation rate is severely depressed?

A companion theory about *economic slack* as a factor in assessing potential inflationary pressures suffers similar weaknesses. The idea is that an economy has a long-run sustainable potential output that derives from working age population, labor productivity, the pace of technological innovation, and other factors. If current actual output is below the estimated potential, according to this theory, inflationary price and wage pressures are expected to be minimal. It is therefore safe for policymakers to stimulate consumption and investment demand so as to drive actual output closer to potential. Of course, the actual pursuit of such a strategy raises all kinds of knowledge problems, even in the best of circumstances. Moreover, in a global economy, the notion that there can be economy-wide capacity constraints does not fit reality. Except for some nontradable goods and services, sourcing of both final goods and inputs to production occurs in a global marketplace. Any estimate of *domestic* capacity is therefore useless in assessing potential price pressures.

Monetary Decoupling

One thing central banks *can* control is the size of their balance sheets. However, as we have already seen, recent efforts to increase

the pace of consumer inflation have not been successful. Some, no doubt, will argue that an even larger bond-buying program is called for in order to get the job done. An alternative conjecture is that the central bank balance sheet is simply unconnected to economic activity in the national economy. Quite obviously, the various measures of the nation's money supply have not responded to the enormous increase in the volume of central bank money. Moreover, the prevailing (worldwide) low interest rates can be explained by factors other than central bank bond buying (Walker 2016).

Superficially, it seems that central bank purchases of large quantities of any asset ought to bid up the price and (in the case of bonds) lower the current yield. However, a central bank is not like other portfolio managers. Central banks acquire additional financial assets by creating liabilities (more fundamentally, by creating money out of thin air)—not by selling other assets. In an important sense, large-scale asset purchases (LSAP) by central banks involve a form of liability swap within consolidated government accounts—the duration, or maturity structure, of outstanding government liabilities is shortened by LSAP.

It is important to be clear that central bank purchases of government bonds have different effects than purchases of private assets such as mortgage-backed securities. While both reduce the outstanding stock of earning assets available to commercial banks and other investors, only the acquisition of private assets shifts potential default risk to taxpayers. Central bank acquisition of Treasury bonds can be thought of as merely “early retirement” of one form of outstanding national debt. Suppose, by way of illustration, that U.S. Treasury bonds were “callable,” as many corporate bonds are. Let's assume that the Treasury chose to issue \$1 trillion of very short-term securities at near zero interest rates and then “called” for early redemption a corresponding amount of long-term debt. While total debt would remain unchanged, both the duration and the interest burden of the debt would be altered; lower-cost, short-term liabilities were issued in order to redeem higher-cost, longer-term debt.

Because (net) interest income earned by Federal Reserve Banks on their holdings of securities is returned to the Treasury, the effect of central bank purchases of Treasury bonds—matched by interest-bearing liabilities (that is, interest paid on reserve deposits)—is not different, analytically, from what would happen if a bureau of the Treasury financed the purchase of long-term bonds by issuing

short-term bills.¹ Consolidation of the Treasury and central bank's balance sheets would cancel out the bonds held as assets by Federal Reserve Banks, while the interest-bearing liabilities of the Federal Reserve Banks would show up as part of the government's outstanding debt. The composition of government debt is altered in exactly the same way as would be the case if the longer-term bonds had been retired via issuance of short-term bills.

This transformation is important in modern financial markets, which use "riskless" government debt as collateral for many types of transactions. When the availability of securities that can be used for collateral declines, there is a "tightening" of conditions in the greater financial intermediary system. In other words, LSAP by a central bank emits a contractionary impulse through the financial system.²

Williamson (2015) argues that the use of high-quality "riskless" securities as collateral in financial markets declined for several reasons following the financial crisis of 2008. Prior to that time, U.S. government and European sovereign debt were viewed as riskless, as were the obligations of U.S. government-sponsored enterprises (GSEs) such as Fannie Mae and Freddie Mac. Some privately issued mortgage-backed securities (MBS) were also considered safe enough to use as collateral. Of course, it turned out that the GSEs failed and had to be nationalized, that the MBS market seized up, and that some European countries found themselves on the brink of default.

¹A peculiarity of U.S. national income accounting is that in the government's budget, the line for interest expense on the national debt includes the amount paid to the Federal Reserve Banks as interest on the bonds held in the central bank's portfolio. When the central bank returns the net interest earned to the Treasury, it is reported as part of "corporate profits." The reason is that the Federal Reserve Banks are technically private corporations. The effect of these accounting entries is to overstate the net interest expense on the national debt and to overstate corporate profits. In 2014, the Federal Reserve Banks' income (and the amount returned to the Treasury) exceeded \$100 billion.

²See Williamson (2015:10): "A Taylor-rule central banker may be convinced that lowering the central bank's nominal interest rate target will increase inflation. This can lead to a situation in which the central banker becomes permanently trapped in ZIRP. With the nominal interest rate at zero for a long period of time, inflation is low, and the central banker reasons that maintaining ZIRP will eventually increase the inflation rate. But this never happens and, as long as the central banker adheres to a sufficiently aggressive Taylor rule, ZIRP will continue forever, and the central bank will fall short of its inflation target indefinitely. This idea seems to fit nicely with the recent observed behavior of the world's central banks."

Those developments resulted in a sharp decline in the stock of assets deemed to be of sufficiently high quality to serve as collateral in financial transactions. Taken in combination with these developments, the large-scale purchase of U.S. Treasury securities by the central bank, while intended to inject a form of monetary stimulus, had the unintended effect of further tightening the functioning of capital markets. For this reason alone, quantitative easing (QE) was a mistake.

Unfortunately, reversing QE at this point would also have adverse effects. So what can the Federal Reserve do? For one thing, the current portfolio of mortgage-backed securities can be held to maturity and not replaced. That would gradually shrink the central bank balance sheet by over \$1.7 trillion. This would still leave a very large quantity of excess reserve balances on which the depositors are earning interest, but much more needs to be understood about the demand for such interest-bearing deposits before we conclude that they should shrink back to pre-crisis levels.

Much attention has been paid to the size and composition of the Federal Reserve's \$4.5 trillion of assets—and with good reason. But not nearly enough focus has been placed on the liabilities. In recent years, the cash assets of foreign banks have exceeded the cash assets of large domestic banks. By some estimates, approximately half of the interest-bearing reserve balances at Federal Reserve banks are held by foreign banking entities (including branches and subsidiaries) operating in the United States. These cash assets have constituted as much as half of the total dollar assets of these foreign companies. The current large amount of foreign-owned, dollar-denominated deposits held by banking companies may partly reflect foreign governments' supervisory requirements for liquidity. To some extent, they also reflect the very large increase in these foreign companies' dollar liabilities. Compared with 2007, for example, the deposits of foreign banking companies operating in the United States were up by almost 50 percent in 2014.

It is important to note that increased demand for Federal Reserve deposits does not appear to reflect the availability of interest on reserves (IOR). After an initial jump in deposits during the crisis period of 2008–09, dollar deposits in 2011 were not much different than they had been in 2007. What's more, we know that the foreign owners of U.S. currency—the other major liability of the U.S. central bank—do not receive interest. It is estimated that more than half of the \$1.3 trillion of Federal Reserve notes outstanding are

foreign held. That means that a majority of each of the two major categories of Federal Reserve Bank liabilities—deposits and currency—are owned by foreigners. These estimates do not count foreign individual and business holdings of dollar-denominated deposits at commercial banks and money market funds, and of course do not count other holdings of dollar-denominated financial assets and real properties. Nevertheless, the fact that foreign banks' U.S. currency holdings, as well as deposits at Federal Reserve Banks, total almost \$2 trillion reveals an enormous global demand for high-quality money.

At present, it would not be possible to assert the existence of either an excess supply of, or an excess demand for, dollars. Of course, dollar currency held by foreigners, like currency held by domestic residents, constitutes an interest-free loan to the U.S. Treasury. Since late 2008, the deposits held by foreign banks at the Federal Reserve have been earning 25 basis points, so that "loan" is no longer interest free.³ However, because the assets acquired by the Federal Reserve banks have all been longer term and higher yielding, the net interest expense of the U.S. Treasury has gone down as a result of this large amount of foreign-owned dollar deposits.

Some countries have formally "dollarized," but far more people around the world have "spontaneously dollarized." Clearly, where it is not effectively prohibited and punished, people choose currency competition. They want high-confidence money, especially during times of political turmoil. One conclusion has to be that the United States has provided a public benefit to the rest of the world. At the same time, U.S. taxpayers have benefited from very large foreign holding of dollars—and here we are referring only to currency and to dollar deposits of foreign banks at the Federal Reserve.

No Exit

Any analysis, however preliminary, suggesting that LSAP actually had a contractionary effect during the period of quantitative easing must be taken seriously. Certainly, the cessation of such transactions was desirable; the principle of "do no harm" applies to central banks as well as to doctors. Nevertheless, the problem of formulating an "exit

³In December 2016, the monetary authorities announced an increase in the interest on reserve balances to 50 basis points.

strategy” remains. Some believe that the central bank balance sheet should shrink back to pre-QE levels, and that reserve requirements should once again become binding on commercial bank deposit creation. But that is simply not going to happen. The past practice of conducting daily open market operations in order to closely control the overnight interbank lending rate—the federal funds rate—is not going to resume. Central bank purchases and sales of securities in the “open market” can no longer be policymakers’ primary tool.

Their new tools—administering the interest rate paid on reserve deposits and auctioning “reverse repurchase agreements” (RRP)—have not been tested in an accelerating inflation environment. No matter how aggressively utilized, neither has any direct effect on money creation. The former (IOR) can be viewed simply as central bank borrowing *from* private banks, while the latter (RRP) is central bank borrowing from GSEs and money market firms. In theory, market interest rates would be influenced by the rate the central bank offers for such borrowings. If higher rates paid by monetary authorities cause other interest rates to be higher, businesses and households will curtail some credit-financed purchases, aggregate demand for output will be moderated, and inflationary pressures will be mitigated—or so the theory goes.

This theory depends on several assumptions, however. Monetary policymakers must have considerable knowledge about the impact of their actions on other interest rates; about the lags involved before businesses and households respond to rising rates; and about whether and how much *real* interest rates—rather than just nominal rates—are changing. As there is no historical experience employing these tools, there is no basis for assessing their effectiveness. Central banks have demonstrably failed to achieve their objective of higher inflation during the past five years; their tools to contain any inflation that emerges are untested.

The risk posed by the enormous central bank balance sheet is that the willingness of commercial banks to hold idle balances (even those earning some administered rate of interest) will decline. Of course, while any individual commercial bank can take actions to reduce its holdings of “excess” reserves, the banking system as a whole cannot do so. Without a corresponding reduction in the securities held by the central bank as assets, “excess” reserves can decline only if they become “required” reserves. This suggests two possibilities: *either* Congress can authorize a substantial increase in administered reserve

requirement ratios; *or* an extraordinary increase in reservable deposit liabilities of commercial banks absorbs the excess. The second option would certainly involve a hyperinflationary increase in the money supply. What are the odds of that?

Commercial bank deposit liabilities are now a function of the supply of earning assets—both domestic and foreign—offered to commercial banks. In other words, the quantity of “inside money” created by the banking system depends on the demand for bank loans and the aggregate supply of government bonds, mortgage-backed-securities, and other suitable instruments available for acquisition by banks. A forecast of deposit growth—and the money supply—must be derived from a forecast of the supply of (and yields on) earning assets offered to the banking system. That includes forecasts of government budget deficits that must be financed, as well as the prices of commercial and residential real estate against which mortgage securities can be created. The knowledge necessary to make confident forecasts cannot be obtained from historical experience.

Conclusion

For several years, major central banks have pronounced that the objective of massive quantitative easing was to raise the inflation rate. That objective has not been achieved despite the quadrupling (in the case of the United States) of the central bank balance sheet. Because commercial banks are no longer reserve constrained, the historical linkage between the central bank balance sheet (the monetary base) and the outstanding money supply has been broken. Changes in the size and composition of the central bank’s assets and liabilities are thus unrelated to the amount of money in circulation. Without the ability to influence the supply of money, central bank open market operations have no influence on the rate of inflation. Announced changes in the federal funds rate therefore have no implications for economic activity, or the rate of inflation.

If inflation should emerge, central banks will have no tools for countering the pace at which the purchasing power of money declines. In the early stages of past periods of accelerating inflation, central banks mistakenly expanded their balance sheets as they “leaned against” the trend of rising nominal interest rates, failing to see that an “inflation premium” was being incorporated by both

lenders and borrowers. In other words, monetary authorities' policy actions were "accommodative" of rising prices. For the foreseeable future, however, no such accommodation will be necessary. Ballooning central bank balance sheets are more than sufficient to fuel extreme rates of inflation without further debt monetization. This is not a forecast that inflation will in fact occur. It simply is a statement of the new reality: whether or not there is inflation is unrelated to anything central banks do or do not do.

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DOES THE FEDERAL RESERVE KNOW WHAT IT'S DOING?

Alex J. Pollock

The Federal Reserve is the most financially dangerous institution in the world. It represents tremendous systemic risk—more systemic financial and economic risk than anybody else. Fed actions designed to manipulate the world's dominant fiat currency, based on the debatable theories and guesses of a committee of economists, can create runaway consumer price and asset inflation, force negative real returns on people's savings, reduce real wages, stoke disastrous financial bubbles that lead to financial collapses, distort markets and resource allocation, and in general create financial instability. The Fed has done or is doing all of these things—ironically enough—in the name of pursuing stability. But whatever its intentions, does the Fed actually know what it is doing? Clearly, it hasn't in the past, and it is exceptionally dubious in principle that it ever can. Since that is true, how can anybody think the Fed should be an independent power?

Foolish Hopes

How different are the real results of discretionary central banking from the fond, indeed foolish, hopes that prevailed at the time of the

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Fed's founding. A highly competent man, the then-Secretary of the Treasury, William G. McAdoo (who was, under the original Federal Reserve Act, also the Chairman of the Federal Reserve Board) announced the establishment of the Federal Reserve Banks with remarkable rhetoric, expressing the completely unrealistic expectations of the time (U.S. Treasury 1914).

"The opening of these banks marks a new era in the history of business and finance in this country," he proclaimed. The Federal Reserve Banks "will give such stability to the banking business that the extreme fluctuations in interest rates and available credits which have characterized banking in the past will be destroyed permanently." Nice idea. "The whole country is to be congratulated," said McAdoo, "upon this final step in an achievement which promises such incalculable benefits to the American people."

It was certainly unwise to promise that the United States had taken the final step and had *permanently* destroyed financial instability. This was a prime example of the dream world that Woodrow Wilson and company imported from the theorists of the German Empire: the notion of government based on the superior knowledge of independent experts that bypasses the messy, contentious, and undisciplined world of democratic legislative politics.

It is hardly necessary to say how it turned out. First came the runaway inflation of the First World War and its aftermath, then the depression of 1921. The 1920s saw a gigantic boom, followed by a depression in the early 1930s, which was renewed in 1937. Then the Fed financed the Second World War by buying government debt, thereby setting the stage for the ensuing postwar inflation. After the boom of the 1950s, the United States returned to financial instability: two credit crunches and a decade of dollar crises in the 1960s, the collapse of the dollar in 1971, more runaway inflation in the 1970s, double-digit interest rates and a huge bust in the 1980s, a series of international financial crises in the 1990s, the boom and bust of the 2000s, and now zero nominal and negative real interest rates that pillage savers and reinflate dangerous asset price bubbles.

What a record—giving "such stability to the banking business" indeed! Yet, after 101 years of experience, unrealistic expectations of what the Fed can do are widespread, and unrealistic faith in the Fed's knowledge and competence remains common.

An Independent Price-Fixing Committee

It is easy to explain why the Fed consistently disappoints expectations and fails its believers. Put simply, the Fed is an ongoing attempt at central planning and price fixing by committee. Like all such efforts, it is doomed to recurring failure by the inescapable problem of insufficient knowledge—as has been conclusively demonstrated by F. A. Hayek (1945). The Fed, like all central planners, is faced with virtually infinite complexity and massive uncertainty. The future is inherently uncertain; what is really happening in the present is significantly uncertain. Of course, the Fed doesn't and can't know what the right price (that is, the right interest rate) is.

In fact, the Fed is just as bad at foreseeing the economic and financial future as everybody else. This includes the inability to foresee what the results of its own actions will be. Though it employs hundreds of economists and can have all the computers it wants to run complicated models, its forecasting record shares the poor performance of economic forecasts generally. As Brendan Brown (2015) writes, economists “in the 1960s thought Keynesian economics had eliminated the business cycle only to be ridiculed by the 1969–70 and 1973–75 downturns. A generation later enthusiasts of The Great Moderation believed they had all but killed the business cycle only to be dumbfounded by the 2007–09 great recession.”

Economist Paul Samuelson (U.S. House of Representatives 1964: 51) once told Congress that “the founders of the Federal Reserve really didn't know what they were doing.” It is certain that those founders could not have expected, and indeed could not have imagined in their wildest dreams, what their creation would become over the course of a century. They would have been astonished to behold a central bank that is formally committed to perpetual inflation and intent on producing it; that has no link of any kind to a gold standard; that thinks it is supposed to, and presumes it is capable of, “managing the economy”; that invests vast amounts in real estate mortgages; that has chairmen who achieve media star status; that wields authority as a unitary central bank, not a federal system of regional banks; and that has been taken over by academic economists.

Of course, institutions change over time. Since the Fed cannot operate on knowledge of the future—that being impossible—it has to rely on academic theories. Its theories and accompanying ideology

change over time. Now, for example, it is deeply committed to the “target” of inflation at 2 percent per year forever—a target it made up. At that rate, average prices will quintuple in the course of an expected lifetime. With a straight face, the Fed claims this is “price stability.” Section 2 (a) of the Federal Reserve Act of 1913 instructs the Fed to pursue “stable prices,” not a stable rate of inflation. But if the Fed wants to indulge itself in such newspeak, who is to stop it? The Fed has set out in recent years to create asset price inflation in the hopes of a “wealth effect.” Asset price inflations, as we know, have a way of ending badly. But if the Fed wants to inflate asset prices, who is to stop it? Who is the Fed’s boss?

In spite of the hopelessness of central planning and price fixing by committee, in spite of the massive risk the Fed creates for everyone else, in spite of the Fed’s ineluctable lack of the requisite knowledge, Fed officials and supporters endlessly prate that the Fed has to be “independent.” In other words, it does not have and should not have a boss.

One of the most remarkable developments in modern public opinion is the widely held faith in the Federal Reserve. This odd faith results in a great many otherwise intelligent people, including (and perhaps *especially*) professional economists, ardently maintaining that the Fed has to be an independent, virtually sovereign fiefdom, free to carry out whatever monetary experiments it wants without supervision from Congress or anybody else.

These promoters of Fed independence, including of course the Fed itself, share a common, unspoken, and mistaken central assumption: that the Fed is competent to have the unchecked power of manipulating money and credit—or, in a more grandiose version, of “managing the economy.” Although in fact neither the Fed nor anybody else has the knowledge to do this, it is assumed that the Fed knows what the results will be of, for example, monetizing over \$4 trillion in long-term bonds and mortgages. But the Fed does not know what it is really doing—rather, it is flying by the seat of its pants, a state of affairs only papered over with calculations from models, staff reports, and speeches for the Federal Open Market Committee minutes.

There is no evidence that the Fed has the superior economic knowledge it would need to be competent to exercise its enormous, unchecked power, and a lot of evidence to show that it does not. Believers in the Fed’s special competence are operating purely on a credo: “I believe in a committee of economists manipulating money

according to unreliable forecasts and debatable and changing theories.”

Accountability

The arguments for Fed independence seldom or never consider how the Fed should be *accountable*. Every part of a democratic government should be accountable. No part of a democratic government, let alone one with such immense power and riskiness as the Fed, should be free of checks and balances and free of any serious accountability. To whom should the Fed be accountable? To its creator, the legislature. This is true no matter how much the Fed longs to be free of Congress, no matter how much it thinks that the mere elected representatives of the people can never understand the mysteries of its high calling. Naturally, every bureaucrat's dream is to be free without having to bother with the legislature. But this dream should never be granted. Democratic accountability must qualify whatever “independence” the Fed might have. If accountability takes away independence, so be it.

At various times in its history, especially during major wars, the Fed has been entirely subservient to the Treasury Department—that is, to the executive branch. In these times, the Fed devoted itself to loyally financing the government's deficit as directed. But at all times, the Fed remains the creature of Congress—which may, if the political stars align, rewrite the Federal Reserve Act, and in so doing redirect, restructure, or even abolish the Fed.

Should the Fed be independent? The House Banking Committee reviewed in detail “The Federal Reserve System after Fifty Years” in 1964. This was in a Congress and committee controlled by the Democratic Party. Here is what they thought (U.S. House of Representatives 1964: 20, 31–32):

- “An independent central bank is essentially undemocratic.”
- “Americans have been against ideas and institutions which smack of government by philosopher kings.”
- “Our democratic tradition alone will be enough to make many thoughtful people demand a politically accountable central bank.”
- “To the extent that the Board operates autonomously, it would seem to run contrary to another principle of our constitutional order—that of the accountability of power.”

In my view, all these points are correct. They are consistent with how Marriner Eccles, at that point the Fed chairman, once began testimony to Congress: “I am speaking for the Board of Governors of the Federal Reserve System, an agency of Congress” (Eccles 1947: 1455).

The points above are also consistent with what Alfred Hayes, then-president of the Federal Reserve Bank of New York, told the Banking Committee during the 1964 hearings (U.S. House of Representatives 1964: 17): “Obviously, the Congress which set us up has the authority and should review our actions at any time they want to, and in any way they want to.” That’s right—“obviously.” The Fed is a creature of Congress, and accountable to it.

But exactly *how* should the Fed be reviewed and held accountable to Congress for its ongoing actions, for the theories and political preferences behind those actions, for the tradeoffs it makes (between borrowers and savers, for example), and for the results of its actions, whether intended or otherwise? At present, that is not clear. The Fed’s Humphrey–Hawkins appearances, the product of a 1978 attempt to make the central bank more accountable, certainly do not achieve accountability. They are mere media events that do not serve to hold the Fed accountable for its mistakes. “Central banks have a well-developed resistance to accepting responsibility, because much of their influence depends on the appearance of infallibility,” as Howard Davies (2015: 27) has observed.

However, Senator Richard Shelby’s proposed “Financial Regulatory Improvement Act,” which was approved by the Senate Banking Committee in 2015, is currently pending in the Senate. One of the principal objectives of this bill is “to improve accountability.” Among its most important provisions are those contained in Section 501, which deal with new approaches to the Fed’s “Reports to Congress.”¹ This section would require the Fed’s Open Market Committee to make substantive quarterly reports to the two congressional banking committees addressing its policy decisions, reasoning, monetary policy rules, strategy, economic analysis and forecasts, and, as appropriate, discussion of dissenting opinions. The serious and grown-up discussion it intends seems to me a very good idea. Could it work?

¹See Financial Regulatory Improvement Act, S. 1484, 114th Cong. § 501 (2015).

An interesting parallel from a financially astute country has recently been provided by Jean-Pierre Danthine, the vice chairman of the Governing Board of the Swiss National Bank (SNB)—Switzerland's central bank. While arguing that the SNB is and should be independent, Danthine (2015) also stressed that “the SNB's independence is far from unlimited.” He pointed out that “Independence goes hand in hand with accountability,” and added, “the SNB is accountable to the Federal Council, the Federal Assembly, and the public for the decisions it takes, the means it chooses and the results it achieves.” In this context, Danthine specified “the annual accountability report submitted to parliament,” as well as “regular meetings with the Federal Council and representatives of the relevant committees of the Federal Assembly.” According to Danthine, this increases transparency, but “transparency is not a goal in itself, but rather a means to achieve accountability.” “It is a fact,” Danthine concluded, that “Switzerland has a well-developed system of checks and balances” for the SNB.

This discussion articulates a rational and desirable goal, which is fully consistent with what is required of the Fed in Senator Shelby's bill. However, we should consider one fundamental change to that piece of proposed legislation.

A New Joint Committee of Congress

Congress as a whole is too big and, on average, too poorly informed about the relevant subjects to effectively oversee the Federal Reserve system. The House Financial Services Committee is also very large, with 60 members, and both congressional banking committees have numerous other difficult areas of jurisdiction, not least being the huge, troublesome, and crisis-prone housing finance sector.

Can the existing committees bring the critical focus, steady attention, and specialized knowledge required to oversee the single greatest source of systemic financial risk in the world? Might not the most critical and most dangerous financial institution there is anywhere deserve its own committee?

I propose that Congress should organize a new joint committee on the Federal Reserve. The Fed would be its sole and crucial jurisdiction. All the reports so reasonably required in Senator Shelby's bill should be made to this joint committee. It should have the power to audit whatever about the Fed it deems appropriate.

This committee should have a relatively small membership, made up of senators and representatives who become very knowledgeable about the Fed, central banking, the inherent risks and uncertainties involved, the international relations of central banks, and all related questions. Like the Senate Select Committee on Intelligence, it should include ex officio members from the leadership, but in this case, from both houses.

“The money question,” as fiery historical debates called it, profoundly affects everything else and can put everything else at risk. It is far too critical to be left to a governmental fiefdom of alleged philosopher-kings. Let us hope that the Congress can achieve a truly accountable Fed.

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LEARNING THE RIGHT LESSONS FROM THE FINANCIAL CRISIS

Kevin Dowd and Martin Hutchinson

More than eight years after the onset of the global financial crisis, there is one thing that ought to be clear to everyone: unconventional monetary policies are not working. We have had three rounds of quantitative easing (QE) and the Fed's balance sheet has increased nearly fivefold from \$825 billion in August 2007 to just over \$4 trillion today; the federal funds rate fell from 5.25 percent to almost zero by December 2008 and has remained there until the 25 basis point increase in December 2015; federal debt has more than doubled to just over \$18 trillion, rising from 61 percent to 101 percent of GDP; vast amounts of public money have been thrown at the banks to keep them afloat; and there has been a huge expansion in financial regulation. To say that the results have been disappointing would be an understatement: output has been sluggish, unemployment has been persistent, bank lending has flatlined, productivity has risen at an unprecedentedly slow rate since 2011, and poverty and inequality have greatly increased.¹ For their part, the banks are still much weaker

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¹Going further, these policies have even managed to defy the Zarnowitz rule—

than they should be, and major banking problems—especially, “too big to fail”—are still unresolved and continue to pose major threats to future financial stability. Seven years of extreme Keynesian policies have failed to produce their intended results. We see similar results in Europe and in Japan. In the latter, this comes after 25 years of such policies.

It is curious that in every discipline except Keynesian macroeconomics, practitioners first consider what caused a problem and then seek a treatment that addressed the cause. If the cause of a medical condition is excess, then the remedy would be moderation or abstinence. However, in Keynesian economics, if the cause is excess spending, then the standard treatment is *even more* spending. Keynesians then wonder why their treatments don't work. To give one example, former U.S. Treasury secretary Larry Summers (2014: 67) recently observed: “It is fair to say that critiques of [recent] macroeconomic policy . . . , almost without exception, suggest that prudential policy was insufficiently prudent, that fiscal policy was excessively expansive, and that monetary policy was excessively loose.” Summers is correct, but he fails to note the irony: that the majority of policymakers *still* advocate insufficiently prudent prudential policy, excessively expansionary fiscal policy, and excessively loose monetary policy. One can only wonder what these policymakers expect to achieve, other than the same result those policies produced last time, on a grander scale.

It is therefore important that we return to first principles and rethink monetary and banking policy. Instead of mindlessly throwing more money and stimulus around, we should consider what caused our current problems and then address those root causes. We would suggest that the causes of our malaise are activist monetary policies on the one hand, and a plethora of government-created incentives for bank risk taking on the other. Both causes are themselves the product of earlier state interventions.

that sharp recessions are followed by sharp recoveries (Zarnowitz 1992). This suggests that these policies have been not so much ineffective as counterproductive, and that the economy would have recovered faster had the policy response been less aggressive.

This diagnosis suggests the following reform program: (1) re-commoditize the dollar, (2) recapitalize banks, (3) restore strong governance in banking, and (4) roll back government interventions in banking. The first two reforms directly address the causes just mentioned—monetary meddling and government-subsidized risk taking—and are intended to get the financial system functioning normally again. The two remaining reforms serve to eradicate the root causes and strengthen the system long term by protecting it against future state intervention.

Recommoditizing the Dollar

The key to monetary reform at the most fundamental level is to establish a robust monetary constitution that would have no place for institutions with the power to undermine the currency; thus, there would be no central bank. However, before we can end the Fed, we must first put the U.S. dollar on a firm footing. The natural way to do that is to re-commoditize it—that is, anchor the value of the dollar to a commodity or commodity bundle.

The obvious reform is to restore the gold standard. In its purest form, a gold standard involves a legal definition of the currency unit as a specified amount of gold. For example, the Gold Standard Act of 1900 defined the dollar as “twenty-five and eight-tenths grains of gold nine-tenths fine.” This definition implies a fixed equilibrium gold price of just over \$20.67 per troy ounce.

The gold standard has much to commend it: it imposes a discipline against the overissue of currency, restrains monetary meddlers, and has a fairly good track record. The main problem, however, is that it makes the price level hostage to the gold market. If the demand for gold rises, then the only way in which the gold market can equilibrate is through a rise in the relative price of gold—that is, a rise in the price of gold against goods and services generally—and this requires a fall in the price level (i.e., deflation). Conversely, if the demand for gold falls or the supply rises, the price level must rise (i.e., inflation must occur) to equilibrate the gold market. The stability of the price level under the gold standard, therefore, depends on the stability of the factors that drive demand and supply in the gold market. Historical evidence suggests that the price level under the gold standard was fairly volatile in the short term but much more stable over the longer term.

We might then ask whether we can improve on the gold standard. Over the years there have been many proposals to do so. Perhaps the most promising—and one of the least known—is the “fixed value of bullion” standard proposed by Aneurin Williams in 1892:

In a country having a circulation . . . made up of paper, and where the government was always prepared to buy or sell bullion for notes at a price, the standard of value might be kept constant by varying from time to time this price, since this would be in effect to vary the number of grains of gold in the standard unit of money. . . . If gold appreciated [relative to the price level], the number of grains given or taken for a unit of paper money would be reduced: the mint-price of gold bullion raised. If gold depreciated, the number of grains given or taken for the note would be increased: the mint-price of gold bullion lowered [Williams 1892: 280].

Thus, the proposal, which admittedly lacks operational details, is that the system respond to shocks in the relative price of gold by changing the gold content of the dollar, instead of letting the whole adjustment fall on the price level, as would occur under a true gold standard. The gold content of the dollar becomes a shock absorber.

We would emphasize, too, that the Williams system is only one example from a broader family of similar systems.² We can imagine even better systems that would deliver greater price-level stability.

Having thus restored the convertibility of currency, the next step is to liberalize its issue by removing any Federal Reserve privileges. Any bank would be allowed to issue its own currency, including banknotes. The main restriction would be one designed to guard against counterfeit: any notes should be clearly distinguishable from those issued by other banks. Commercial banks would be free to issue notes denominated in U.S. dollars if they wished but those notes would only be receipts against U.S. dollars as legally defined. In other words, a commercial bank one-dollar note might state, “I promise to pay the bearer the sum of one dollar,” as per the conditions governing the redeemability of the dollar note, and respecting the *legal definition of the U.S. dollar as a given amount of gold* at any particular time. There would be no restrictions against the issue of currency denominated in other

²See, for example, Irving Fisher’s “compensated dollar” plan (Fisher 1913).

units of account, nor any restrictions on private currencies. The law would also be changed to allow U.S. courts to enforce contracts made in any currencies freely chosen by those involved.

By this point, the door would be open to private banknotes that would start to circulate at par with Federal Reserve notes. Over time, their market share would rise, as note-issuing banks would be incentivized to promote their own notes over those of rivals, and the Fed's share of the currency market would gradually diminish.

Recapitalize the Banks

Turning now to banking, the first point to appreciate is that the banks are still massively undercapitalized. The root causes of this undercapitalization are the incentives toward excessive risk taking created by various government interventions, including the limited liability statutes, government deposit insurance, the central bank lender of last resort function, and the general expectation that banks can count on being bailed out if they get themselves into trouble. With the exception of limited liability, these interventions are specifically designed to protect the banking system. In fact, however, they are seriously counterproductive: by protecting the banks against the downside consequences of their own decisions, these interventions subsidize risk taking, and the downside is passed on to the taxpayer. Naturally, banks respond to this regime by maximizing the value of the risk-taking subsidy: they increase their leverage and become far too big, with the biggest ones becoming *too big to fail*.

This trend toward weaker banks can be seen in the history of bank capital ratios. In the late 19th century, it was common for banks to have capital ratios of 40 to 50 percent. By the beginning of the recent financial crisis, however, the capital-to-asset ratios of the 10 biggest banks in the United States had fallen to less than 3 percent. The banks were thus chronically weakened, and the authorities—the Federal Reserve, the Federal Deposit Insurance Corporate (FDIC), and even the federal government—became hostage to them. The authorities dared not let weak banks fail for fear of the consequences. It is essential, therefore, that this dependence be ended, with viable banks made to stand on their own feet, and weak ones eliminated.

Accordingly, the most pressing task is to recapitalize the banking system: the required minimum capital standards need to be much higher and much less gameable than they currently are. To this end,

we suggest that the United States impose a minimum bank capital ratio of 20 percent, with a further 10 percentage points on top (i.e., a 30 percent minimum) for systemically important financial institutions (SIFIs). We suggest that the numerator and the denominator of the capital ratio be defined as conservatively as possible:

- The numerator should be Common Equity Tier 1 (CET1), defined as tangible common equity plus retained earnings. CET1 capital gives us a conservative measure of the buffer available to absorb losses in a crisis. Broader definitions of capital are not appropriate because they include items such as deferred tax assets, goodwill, and other intangible assets that cannot be deployed in a crisis.
- The denominator should be the bank's total exposure or total amount at risk. This consists of total assets plus the additional exposures buried in off-balance-sheet positions—including securitizations, guarantees, and other commitments. It is important that these be estimated prudently, with no allowances made for hedging or correlation offsets, as these can be unreliable. The objective is to estimate the total amount that can be lost under worst-case assumptions.

Note that this capital ratio makes no use of risk weights or even risk models, both of which are essentially useless (Dowd 2014). It is precisely these features that undermine the Basel bank capital regulations, which, despite their stated intent to the contrary, have long since become means by which bankers decapitalize their own banks and pass much of the cost of their risk taking onto the taxpayer. One might add that the Basel system is insanely wedded to risk weights and risk models, because it is captured by the banking industry, which uses it to game the system. There is therefore no point in the United States arguing the issue as a topic for future Basel reform. Instead, the United States should simply withdraw from the Basel system and impose the above rules unilaterally on banks operating within its own territory.

A high capital requirement would have a number of beneficial effects:

- First, by forcing banks to bear the downside consequences of their actions, it would greatly reduce moral hazard, significantly curb risk taking, and thereby make the financial system much stronger. We can also think of higher capital requirements as

greatly reducing the value of the government-created risk-taking subsidy.

- Second, shareholders would be more exposed to downside risks, which would strengthen the incentive of bank shareholders to ensure that senior management—who ultimately account to them—behave more responsibly. This, in turn, would help strengthen the governance structures of banks.
- Third, since the new capital regime would dispense with the arbitrary risk weights that permeate the Basel system, it would help correct the distorted lending incentives that Basel has created. Most notably, Basel attaches a zero risk weight to sovereign debt, a 50 percent risk weight to mortgage debt, and a 100 percent risk weight to corporate debt. Those risk weights artificially encourage banks to buy government, and to a lesser extent mortgage, debt in preference to corporate debt. Abandoning risk weights would remove those distortions and lead to more balanced bank portfolios with a greater emphasis on corporate lending. The distortions created by the very low risk weights attached to securitizations and model-based risk estimates would also be removed.
- Fourth, the use of the total exposure measure in the denominator of the capital ratio would mean that different positions would attract different capital requirements in proportion to the amounts at risk. This would serve to penalize risky positions and help drive out much of the toxicity that still exists in banks' on- and off-balance-sheet positions.

For its part, the supplementary SIFI capital requirement would provide additional insurance against the possibility of a big bank failure, as well as reducing the damage when such an event does occur. Big banks would have an incentive to slim down or break themselves up in order to avoid the higher SIFI capital requirement; smaller banks would be discouraged from becoming megabanks themselves. The bankers concerned might object that this additional requirement would help to make their banks uncompetitive. They would be right: the underlying objective here is precisely to make the antisocial, too-big-to-fail business model unsustainable. We want to squeeze the megabanks so that they shrink, get rid of their toxic positions, simplify themselves, and become manageable again. That way, they cease to be threats to the financial system and taxpayers.

We would also emphasize that high capital requirements should be imposed as soon as possible. As Admati and Hellwig (2013a: 169) point out:

It is actually best for the financial system and for the economy if problems in banking are addressed speedily and forcefully. If bank equity is low, it is important to rebuild that equity quickly. It is also important to recognize hidden insolvencies and to close zombie banks. If handled properly, the quick strengthening of banks is possible and beneficial, and the unintended consequences are much less costly than the unintended consequences of delay. This is true even if the economy is hurting.

The need for speed arises in part because zombie banks would have both the opportunity and the incentive to waste even more public money, but also because their ongoing weakness would continue to hamper economic recovery.³

A natural question is why have a 20–30 percent minimum capital requirement? There are no magic numbers, but we want a minimum capital requirement that is high enough to remove the overwhelming part of the moral hazard that currently infects the banking system. We also want a requirement that is much higher than what we have at present. As John Cochrane (2013) put it: the capital requirement should be high enough that banks will never be bailed out again.

In this context, many experts have recommended minimum capital-to-total asset ratios that are much greater than those called for under current Basel rules. In an important letter to the *Financial Times* in 2010, no less than 20 experts recommended a minimum ratio of equity-to-total assets of at least 15 percent (Admati et al. 2010), and some of these wanted minimum requirements that are much higher. In addition, John Allison (2014) and Allan Meltzer (2012) have called for minimum capital-to-asset ratios of at least 15 percent; Admati and Hellwig recommended a minimum “at least of the order of 20–30 percent”; Eugene Fama and Simon Johnson recommended a minimum of 40–50 percent (see Admati and

³The damage caused by excessive regulatory forbearance has been a recurring theme in U.S. history (see, e.g., Salsman 1990) and is also a key factor in Japan’s poor economic performance since the Japanese asset bubble burst in 1990.

Hellwig 2013a: 179, 308, 311); and Cochrane (2013) and Thomas Mayer⁴ have advocated 100 percent.

The minimum capital requirement would be enforced by a simple rule: banks would not be permitted to make any distributions of dividends, or to pay any bonuses, until they met the above capital requirements.⁵

All banks with capital ratios below the minimum would then be pressured to produce credible capital plans so that they could resume distributions. They would have three ways to rebuild their capital: increase retained earnings, shrink assets, and/or issue more equity. The first two options, which banks would be forced to do anyway, would be slow, and given the pressure to resume distributions as soon as possible, it is difficult to see how most banks could avoid the need for a share issue to speed up the recapitalization process. The stock market would value a bank's shares in line with its perception of each bank's future profitability. A bank that is perceived to have good prospects would obtain good prices for its shares and should be able to recapitalize easily and quickly. On the other hand, a bank that is perceived to have poor prospects would experience difficulty selling its shares. At best, they would trade for low prices and recapitalization would be a slow process dependent on the accumulation of retained earnings and asset sales. At worst, the market might perceive the bank to be insolvent, in which case it would not be able to raise any new capital at all. The stock market reaction to a bank's share offering would provide a very useful signal of the bank's financial health.

Strong banks would be revealed to be strong and could recapitalize quickly; weak banks would be revealed to be weak, and the weakest would head toward extinction via takeover or failure. In the interim period, there would be a mass sale of banking assets and superfluous operations, which would depress the market for those

⁴Personal discussion.

⁵In the period since the onset of the financial crisis, the Federal Reserve has caved to bank pressure in allowing the banks to make dividend payments and stock repurchases, which undermine the Fed's own attempts to recapitalize the banking system. The amounts involved have been very substantial. For example, from the third quarter of 2007 through the height of the crisis, the largest 19 U.S. banks paid shareholders almost \$80 billion; in fact, about half the money the government invested in the banks during the crisis went straight out the back door to shareholders (Admati 2012).

things and ensure that bank managements repositioned themselves with the most rigorous regard for what was actually profitable. In particular, capital- and risk- thirsty investment banking operations would be closed down or sold to brokerage operations without banking licenses or deposits from the public.

There then arises the delicate question of what to do if some banks are revealed to be very weak, even insolvent. This is very likely to occur: some of the big banks (e.g., Bank of America, Citi, and Deutsche) have high leverage, major problems, and vast off-balance-sheet positions. Indeed, we cannot rule out the possibility that imposing higher capital standards would reveal the hitherto hidden weakness of major banks, thereby triggering a major crisis. However, we can also well imagine a renewed financial crisis being triggered by other factors, such as a rise in interest rates.

So what should be done in such circumstances? It would make no sense to keep weak banks afloat at public expense; nor should the authorities respond as they did in 2007–08, with a series of panicked late-night deals of (at best) dubious legality. Instead, the authorities should be required by law to close distressed banks in an orderly fashion—possibly after a temporary period of public ownership to preserve orderly markets—with losses allocated according to existing seniority structures and viable units sold off to competitors. It should also be mandatory that senior management prepare living wills⁶ and be made personally liable for any losses that might fall on taxpayers, which would almost certainly bankrupt them if their banks failed. Criminal investigations should also be opened so that any criminal behavior can be uncovered and punished. Ultimately, we need to give bankers the right incentives. By way of contrast, the current system imposes vast, random fines upon the banks, in some cases for minor violations that were not illegal at the time they were “committed.” This is a scam that punishes the wrong people: bank managements make it through unscathed, but shareholders don’t get the returns they have earned.

⁶The downside with existing provisions for living wills is that bankers might be tempted to booby-trap them in order to blackmail the authorities in the heat of a crisis. To make living wills useful, it is therefore essential that bankers be suitably incentivized: they should be made strictly (and potentially criminally) liable for any losses that might arise if something nasty “unexpectedly” crawls out of the woodwork.

Naturally, the imposition of higher capital requirements would cause the bankers to howl like hyenas, as it would greatly diminish their pay. Indeed, bankers have been very effective in fighting off attempts to impose serious increases in capital requirements by spreading a number of self-serving misconceptions—the real purpose of which is to defend their subsidized risk taking. This suggests that even the modest increases mandated under Basel III would be an enormous imposition to be resisted at all costs (Admati and Hellwig 2013a, 2013b). These misconceptions have seriously distorted public discussion and done much to block the reforms needed to get the banking system working properly again. We should consider a few of them.

The first misconception is that the banks are already adequately capitalized as they have capital ratios higher than Basel requires: the eight biggest SIFI banks, the ones that really matter, had an average ratio of capital to risk-weighted assets of almost 13 percent at the end of 2014. However, these capital ratios are meaningless; their Basel adequacy only serves to demonstrate the inadequacy of Basel itself. The ratios that matter are the *leverage ratios*, which for the same banks, at the same time, were 7.26 percent using U.S. Generally Accepted Accounting Principles (GAAP), and just over 5 percent using International Financial Reporting Standards (IFRS) (FDIC 2015). The latter are more reliable because of stricter rules applied to netting, but IFRS also has many problems and is far from perfect, not least because of its vulnerability to gaming. What's more, no current accounting standards even remotely address the issues raised by enormous off-balance-sheet positions or allow you to determine whether a bank is really solvent or not. The much-lauded rebuilding of American banks' balance sheets is greatly exaggerated.

The second misconception is that higher capital requirements would increase banks' costs. However, if this argument were correct, it would apply to nonbank corporations as well, and we would expect them to be equally highly leveraged in order to take advantage of the "cheapness" of debt. Instead, most nonbank corporations have capital ratios of over 50 percent. Some don't borrow at all. In reality, equity actually helps reduce the costs associated with potential distress and bankruptcy, and the same benefits apply to banks as to other corporations.

There is, nonetheless, one case where higher capital is costly—at least to bank shareholders. When the government intervenes to cover banks' downside risk, capital becomes expensive to the

bank's shareholders: the higher the bank's capital level, the more of the risk subsidy they forgo, because higher capital reduces the cost to third parties of their risk-taking excesses. When bankers complain that capital is expensive, they consider only the costs to shareholders and themselves and do not take into account the costs of their risk taking to the economy.

In fact, the social cost of higher equity is *zero*. To quote Admati and Hellwig (2013a: 130):

A bank exposing the public to risks is similar to an oil tanker going close to the coast or a chemical company exposing the environment to the risk that toxic fluid might contaminate the soil and groundwater or an adjacent river. Like oil companies or chemical companies that take too much risk, banks that are far too fragile endanger and potentially harm the public.

But unlike the case of safety risks posed by oil or chemical companies, higher bank safety standards can be achieved at no social cost, merely by requiring that banks issue more equity. This, in turn, can be achieved by reshuffling paper claims between banks and their investors.

Another of the banks' false, scaremongering arguments is that high minimum capital requirements would restrict bank lending and hinder economic growth. To give just one example: Josef Ackermann, the then-CEO of Deutsche Bank, claimed in 2009 that higher capital requirements "would restrict [banks'] ability to provide loans to the rest of the economy" and that "this reduces growth and has negative effects for all" (quoted in Admati et al. 2014: 42). The nonsense of such claims can be seen by noting that they imply that further increasing banks' leverage must be a good thing, notwithstanding the fact that excessive leverage was a key contributing factor to the financial crisis, and that ongoing bank weakness—weakness associated with too much leverage—is still impeding economic recovery.

One also encounters claims, based on a confusion of capital with reserves that mixes up the two sides of a bank's balance sheet, that higher capital requirements would restrict bank lending. To give two examples:

Think of [capital] as an expanded rainy day fund. When used efficiently, a dollar of capital on reserve allows a bank to put ten dollars to work as expanded economic activity. The new

Basel rules would demand that banks would maintain more dollars on reserve for the same amount of business, or more capital for no new economic work [Abernathy 2012].

Higher capital requirements would require the building up of a buffer of idle resources that are not otherwise engaged in the production of goods and services [Greenspan 2011].

These statements come from experts who should know better. Such statements would be correct if they applied to requirements for higher cash reserves, but are false as they apply to requirements for higher equity capital. Capital requirements constrain how banks *obtain* their funds but do not constrain how they *use* them, whereas reserve requirements constrain how banks use their funds but do not constrain how they obtain them.

In fact, evidence suggests that high levels of capital actually support lending. To quote former Bank of England Governor Mervyn King (2013):

Those who argue that requiring higher levels of capital will necessarily restrict lending are wrong. The reverse is true. It is insufficient capital that restricts lending. That is why some of our weaker banks are shrinking their balance sheets. Capital supports lending and provides resilience. And, without a resilient banking system, it will be difficult to sustain a recovery.

Then there is the “the time is not right” bugbear, which is merely an excuse to kick the can down the road:

From the bankers’ perspective, the time is never ripe to increase equity requirements or to impose any other regulation. As for the regulators, when the industry is doing poorly, they worry that an increase in equity requirements might cause a credit crunch and harm the economy [and never mind that excessive forbearance only makes the problem worse]. When the industry is doing well, no one sees a need to do anything [Admati and Hellwig 2013a: 171].

Last but not least, there is the “level playing field” excuse—a claim that higher capital requirements would disadvantage “our” banking industry relative to overseas competition. U.S. bankers make this claim against competition from Europe; British bankers make it

against competition from the United States and Europe; and European bankers make it against competition from the United States and Britain. In other words, everyone makes it against everyone else. This argument is false because it presumes that higher capital is costly, and we know that it is not. It is also false because it ignores the point that higher capital supports a more resilient banking sector. On the other hand, the “level playing field” excuse is a good one to give impressionable local politicians who don’t know any better.

Restore Strong Governance in Banking

We need to restore strong governance in banking. The key to achieving this is to reestablish strong personal liability on the part of the major decisionmakers with the bank—namely, senior bank management, including board members. More precisely, bank directors should be subject to unlimited strict personal liability for any losses that lead their banks to become bankrupt. This would effectively mean that the bankruptcy of the bank would entail the personal bankruptcy of its senior management. The strict liability provision would strip them of any excuses: if it happened on their watch, they would be automatically liable, without any need to prove dereliction of duty on the part of any particular director. These liability rules would encourage senior bankers to take a much greater interest in risk management and shut down high risk operations that could rebound on them personally.

There is also the question of whether there should be extended liability for bank shareholders. In the United States, double liability for bank shareholders was common until the 1930s and made for conservative banking and low bank leverage. Extended liability provided reassurance to clients—both depositors and borrowers—and greatly reduced the moral hazards associated with the separation of ownership and control. The net effect was to greatly strengthen corporate governance in banking and ensure a tight grip on risk taking. It didn’t always work: even under unlimited liability, the unfortunate Overend and Gurney shareholders of 1866 subscribed £10 toward their £100 shares—and were then called upon to put up the other £90 after the bank defaulted.

Going further, the default liability structure for bank shareholders should be *unlimited* liability. Recall that American investment banks were all unlimited liability partnerships a generation ago. The last to convert into a limited liability company was Goldman Sachs in 1986.

It is also worth noting that just over a century ago, J. P. Morgan preferred to use the unlimited liability model despite the fact that he could have incorporated—precisely because of the reassurance that unlimited liability gave his clients. With each deal he made, he put all his personal wealth on the line.

It is also widely recognized that the conversion of the unlimited liability investment bank partnerships into corporations was a major factor promoting greater risk taking and leverage. Describing the first such conversion—that of Salomon Brothers—Michael Lewis writes:

John Gutfreund [Saloman's CEO] had done violence to the Wall Street social order—and got himself dubbed the King of Wall Street—when, in 1981, he'd turned Salomon Brothers from a private partnership into Wall Street's first public corporation. He ignored the outrage of Salomon's retired partners. . . . He and the other partners not only made a quick killing; they transferred the ultimate financial risk from themselves to their shareholders. . . . But from that moment, the Wall Street firm became a black box. The shareholders who financed the risk taking had no real understanding of what the risk takers were doing, and, as the risk taking grew ever more complex, their understanding diminished [Lewis 2010: 257–58].

These conversions then led to an increased focus on return on equity, much greater risk taking, and a major deterioration in the quality of corporate governance—all of which were highly predictable.

Of course, unlimited liability has its downsides: if a bank goes bankrupt, it can ruin its shareholders; it also discourages investors at the margin, who would expose themselves to losses beyond their investment; and it makes share trading difficult, because other shareholders would want to verify and approve new shareholders. However, one could argue that this is all to the good, because unlimited liability creates exactly the right incentives: if we want the guardians of our money to guard it as carefully as if it were their own, then unlimited liability is the natural choice. Recall, also, that Adam Smith ([1776] 1976: 741) was famously critical of the limited liability company: “The directors of such companies . . . being the managers of other people's money than their own, it cannot well be expected that they should watch over it with the same anxious vigilance. . . . Negligence and profusion must always prevail . . . in the management of such a company.”

Moreover, limited liability is not a natural market outcome, but rather the product of government intervention after a vexed controversy—during which the free-market advocates of the time raised exactly the points that we are making here (see Campbell and Griffin 2006: 61–62).

Roll Back Government Interventions in Banking

The costs of financial regulation cannot be reliably quantified, but one thing is for sure: they are truly enormous. John Allison likes to point out that if you asked bankers whether they would prefer to eliminate taxes or eliminate regulation, the answer would be a no-brainer: regulation. He also notes that about 25 percent of a bank's personnel cost relates to regulations alone (Allison 2014: 351).

Crews (2014) estimates the cost of federal regulation to be just over \$1.8 trillion, or 11 percent of GDP. Of that, the cost of economic and financial regulation makes up the thick end of half a trillion dollars. There can therefore be no doubt that regulation is a huge and growing drag on the economy. Most of it should simply be swept away: in the banking area, this would entail the repeal of a whole range of legislation, including Dodd-Frank, Sarbanes-Oxley, the Community Reinvestment Act, and Truth in Lending.

We also need to eliminate the various government-sponsored enterprises (GSEs) set up to interfere with the banking system, which have each promoted excessive risk taking. The first target would be Fannie Mae and Freddie Mac. These entities have absolutely no useful role to play in the economy, have done enormous damage to the U.S. housing market, and were key contributors to the global financial crisis. They should be shut down forthwith before they do any more damage.

The next target would be the FDIC, the very existence of which serves to encourage excessive risk taking by protecting bankers against many of the adverse consequences of bank failure. In particular, the FDIC removes any incentive depositors have to monitor their banks as they otherwise would; bankers respond by lowering their lending standards, taking more aggressive risks, and running down their capital. Reforms here would entail:

- The establishment of a program to phase out deposit insurance: this might involve a gradual reduction in the amounts covered—currently \$250,000 in standard cases—combined

with the introduction of and gradual increase in depositor coin-
surance, up to the point where FDIC insurance is eliminated.

- A gradual reduction and eventual phasing out of the FDIC's role in examining and supervising banks: such functions would no longer be necessary once strong governance structures had been reestablished, and banks had been recapitalized and then adjusted their business models to root out excessive risk taking.
- Reforms to provide for low-cost means of enforcing consumer protection: these might involve private arbitration mechanisms or ombudsmen procedures, as are used in many other countries.
- Reforms to privatize decisions about when banks should go into bankruptcy and how such institutions should be resolved: such issues should be left to the private sector as is standard in other industries. A major benefit of such reforms is that they would eliminate the current biases—the incentives toward excessive forbearance—that exist when such decisions are left with regulatory agencies that are subject to capture by political or industry interests.

The third and most difficult reform is to roll back the most troublesome GSE of all—the Federal Reserve. The initial steps would entail implementation planning for the reforms suggested here (e.g., to recommoditize the dollar), as well as contingency planning for plausible adverse events such as a rise in interest rates, the failure of a SIFI, or a renewed financial crisis.⁷ We then need a series of programs to carry out the following important tasks:⁸

- Roll back and ultimately abolish the Fed's supervisory and regulatory roles, and eliminate ancillary programs such as the Fed's Comprehensive Capital Assessment Review “stress tests.”
- Privatize the Fed's payment system, FedWire.

⁷This contingency planning should consider the possibility of another financial emergency and should include a program to keep the banking system as a whole operating at a basic level to prevent widespread economic collapse, fast-track bankruptcy processes to resolve problem banks and, where possible, return them to operation as quickly as possible, a prohibition of cronyist “sweetheart deals” for individual banks, and provisions to hold senior bankers to account.

⁸There are other tasks of lesser importance, which nevertheless still need doing. These include, for example, transferring the Fed's statistical operations to the U.S. Bureau of Statistics.

- End the Fed's lender of last resort function, and close down its discount window: last resort and discount window lending would then be left to the private sector.
- Close down the Fed's foreign exchange desk and the New York Fed's open market operations.
- Close the Consumer Financial Protection Bureau, or, failing that, transfer it to the Commerce Department where Congress can oversee it.
- Transfer the Fed's government debt management responsibilities to the Treasury.
- End the Fed's role as a bankers' bank by, for example, spinning off the Fed's deposit-taking functions to a separate voluntary-membership bankers' bank entity whose only function would be to hold and manage banks' deposits.
- Wind down and eventually phase out Federal Reserve currency: the only currency in circulation would then be that issued by regular commercial banks.
- Clean up and wind down the Fed's balance sheet: this task is probably best carried out by spinning off the Fed's asset portfolio into a separate runoff company, whose sole purpose would be to run down its asset portfolio at minimum cost to the taxpayer. Given the size of the Fed's balance sheet, this process would likely take a considerable amount of time and lead to a prolonged period of depressed asset prices and associated higher interest rates. It is likely to end up being very costly to the taxpayer whatever happens.
- Shut down the Federal Reserve Board. Individual Federal Reserve banks would then be free to continue to operate but would be stripped of any privileges or public policy responsibilities. It would be up to their member banks to decide upon their future.

The final regulatory rollback would be to phase out capital adequacy regulation. Such regulation would no longer be necessary once government-created incentives to excessive risk taking had been eliminated. The determination of banks' capital ratios could then be left to the banks themselves operating under the discipline of the free market. Banks that ran their capital ratios too low would then be subject to punishment by the market: they would lose confidence and market share, and so forth; *in extremis*, they would eventually be run

out of business and should be allowed to fail as would be the case with badly run firms in any free market.

Conclusion

Central bankers have printed trillions in new base money, brought interest rates to zero (or even below), and thrown trillions at banks in subsidies with no noticeable positive effects. Yet, central bankers are considering more monetary stimulus. It appears that they have learned all the wrong lessons from the crisis. The central lesson they drew was that if a policy doesn't have the desired effects, then they should keep trying it again and again but on ever-greater scales. The lessons they should have drawn are that "stimulus"—whether in the form of QE, ZIRP, or NIRP—is counterproductive.

As far as the banking system is concerned, they convinced themselves that they had no choice but to bail the banks out; instead, they failed to realize that what was needed was a major structuring in which the zombies would have been shut down, the remaining banks recapitalized (and *not* at public expense), and the banks' governance structures overhauled to make the bankers personally liable for any losses they make.

The task ahead is to get both groups to unlearn these lessons: central bankers need to return to their senses, and commercial bankers need to be made to understand that the ongoing party of excessive risk taking at public expense is over; and, in turn, will only happen when the party *really* is over.

The four reforms discussed in this article—recommoditizing the dollar, recapitalizing the banks, restoring strong governance in banking, and rolling back government interventions in banking—can lead the way to a more robust financial system and strong economic growth. To implement a positive reform program, however, will require leaders who have both an understanding of the lessons learned from the financial crisis and the courage to act on them.

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PERMAZERO

James Bullard

It is a pleasure to be here today to discuss this important conference topic, “Rethinking Monetary Policy.” The financial crisis of 2007–09 and its aftermath turned monetary economics and policy-making on its head and called into question many of the conventional views held before the crisis. One of the most popular and enduring views in all of monetary economics since the 1970s, and indeed since the 1940s, has been that a nominal interest rate peg is poor monetary policy, and that attempts to pursue such a policy would lead to ruin. Yet, post-crisis U.S. monetary policy could be interpreted as exactly that—an interest rate peg—and an extreme one at that, since the policy rate has remained near zero for nearly seven years. In this talk, I will summarize some recent academic work on the idea of a stable interest rate peg and what its implications may be for current monetary policy choices. I will argue that a stable interest rate peg is a realistic theoretical possibility; that it has some mild empirical support based on a cursory look at the data; and that, should we find ourselves in a persistent state of low nominal interest rates and low inflation, some of our fundamental assumptions about how U.S. monetary policy works may have to be altered.

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James Bullard is President and CEO of the Federal Reserve Bank of St. Louis. This article is based on his keynote address at the Cato Institute’s 33rd Annual Monetary Conference, “Rethinking Monetary Policy,” Washington, November 12, 2015. The views expressed are the author’s and do not necessarily reflect the views of others on the Federal Open Market Committee. He thanks his staff for helpful comments.

My Current Policy Recommendations

Let me begin by describing briefly my current monetary policy recommendations. Those of you who have followed my commentary during 2015 know that I have been an advocate of ending the Federal Open Market Committee's (FOMC's) near-zero nominal interest rate policy. My case has been straightforward. Essentially, I have argued that while the Committee's goals have been met, the Committee's policy settings remain as extreme as they have been at any time since the recession ended in 2009.

With respect to these goals, the current unemployment rate of 5 percent is statistically indistinguishable from the Committee's view of the equilibrium long-run rate of unemployment. In addition, the current year-over-year inflation rate, while low, reflects an outsized oil price shock that occurred during 2014. A measure that tries to control for this effect, the Dallas Fed's trimmed mean inflation rate, measured year-over-year, is currently running at 1.7 percent, just 30 basis points below the FOMC's inflation target of 2 percent. By these measures, the Committee's goals have been met.

On the other hand, the Committee's policy settings remain far from normal. The policy rate remains near zero, and the balance sheet is very large relative to its pre-crisis levels. In the past, the Committee has acted to normalize policy well before goals have been completely met.

A simple and prudent approach to current policy is to move the policy settings closer to normal levels now that the goals of policy have been attained. There is no reason to continue to experiment with extreme policy settings.

Implicit in my argument is a desire to return to the 1984–2007 U.S. macroeconomic equilibrium, which involved relatively good monetary policy, relatively long economic expansions, and a higher nominal interest rate than we have today. Part of the nature of that equilibrium was a monetary policy that was relatively well understood by both financial market participants and monetary policy-makers. We gained much experience with the equilibrium over this time period, and we think we know how it works, in part because it has been studied extensively from both a theoretical and empirical perspective.

Rethinking Monetary Policy

Nevertheless, as the topic of this conference is “Rethinking Monetary Policy,” I plan to devote the bulk of my remarks not to the return to the standard macroeconomic equilibrium that I recommend, but to the possibility that such a return is not achieved, despite the Committee’s best efforts to engineer such an outcome for the U.S. economy.

We have, after all, been at the zero lower bound in the United States for seven years. In addition, the FOMC has repeatedly stressed that any policy rate increase in coming quarters and years will likely be more gradual than either the 1994 cycle or the 2004–06 cycle. In short, the FOMC is already committed to a very low nominal interest rate environment over the forecast horizon of two to three years. Perhaps short-term nominal rates will simply be low during this period, or perhaps the economy will encounter a negative shock that will propel policy back toward the zero lower bound.

Our experience is not unique. In Japan, the policy rate has not been higher than 50 basis points for two decades, and in the euro-zone, the policy rate looks set to remain near zero at least through September 2016.

The thrust of this talk is to suppose, for the sake of argument, that the zero interest rate policy (ZIRP) or near-ZIRP remains a persistent feature of the U.S. economy. How should we think about monetary stabilization policy in such an environment? What sorts of considerations should be paramount? Should we expect slow growth? Will we continue to have low inflation, or will inflation rise? Would we be at more risk of financial asset price volatility? What types of concrete policy decisions could be made to cope with such an environment? Would it require a rethinking of U.S. monetary policy?

I will provide tentative answers to all of these questions. But first, I want to argue that it may indeed be possible to converge to an equilibrium at the zero lower bound, and that this situation has some surprising consequences. Chief among these consequences is that the policy itself may put downward pressure on inflation in the medium and long term, rather than upward pressure as conventionally thought. This is a simple consequence of the Fisher equation having to hold in concert with monetary neutrality. I will now turn to developing this point.

Permazero

Most analyses of U.S. monetary policy since the crisis of 2007–09 have suggested that ZIRP in the United States is a temporary affair, one that was part of an important set of policy actions designed to mitigate a particularly large shock to the U.S. economy. But how temporary is it?

We have been at the zero lower bound for nearly seven years. This is well beyond an ordinary business cycle time. Normally, we would think of a shock hitting the economy, with the effects of that shock largely wearing off well within a seven-year time span. What are the consequences of spending such a long time with the policy rate at one value? Arguably, it is an interest rate peg.

In the 1970s and 1980s, the typical reply to this question was that an interest rate peg was poor policy. Trying to keep the nominal policy rate unnaturally low for too long a period would ultimately be inflationary, and indeed, this was widely viewed as a large part of the problem leading to global inflation during this era.¹ Indeed, during the past six years, I have warned along with many others that the Committee's ZIRP has put the U.S. economy at considerable risk of future inflation. In fact, my monetarist background urges me to continue to make this warning right now!

In any case, after seven years, one might want to consider other models. One important possibility is that the 1970s were an era when U.S. monetary policy was not very credible with respect to fighting inflation, whereas the 2000s were an era when U.S. monetary policy had already earned a lot of credibility for keeping inflation low and stable. One way to interpret this is to say that market expectations of future inflation today move to stay in line with the FOMC's desired policy rate instead of becoming "unanchored" as they did in the 1970s. In particular, this would mean that a low nominal interest rate peg, far from being a harbinger of runaway inflation, would instead dictate medium- and longer-run low inflation outcomes.

This theme is sometimes labeled "neo-Fisherian," because it emphasizes that the Fisher equation holds in virtually all modern macroeconomic models. The Fisher equation states that the nominal interest rate can be decomposed into a real interest rate component

¹See, for instance, Sargent and Wallace (1975) for an argument that an interest rate peg is associated with price level indeterminacy.

and an expected inflation component. If we view the real interest rate as determined by supply and demand conditions in the private sector, then a permanent nominal interest rate peg would also pin down the long-run rate of inflation. The Fisher equation implies, among other things, that the monetary authority cannot choose the long-run value of the nominal policy interest rate separately from the long-run value of inflation.

This Fisher effect is well known and is not likely to be disputed in macroeconomic circles. However, how long before this Fisher effect sets in? Over what time period can the monetary authority maintain an interest rate peg before the peg itself begins to pull inflation expectations in a direction consistent with the peg? Is seven years a sufficient length of time? How about 20 years, as in Japan?

Cochrane's Analysis

A new paper by Cochrane (2015) provides an interesting analysis of this issue in the context of the most canonical of modern macroeconomic models, the linearized three-equation New Keynesian model.² I will not provide any details of the model here, but for those who are unfamiliar with it, I will briefly describe its essential ingredients. The key friction in the model is that prices are sticky, meaning that they do not adjust immediately in response to supply and demand conditions. Households and firms solve optimization problems taking the friction as given. The policymaker controls a one-period nominal interest rate, and through this channel can have temporary effects on real output and inflation. The Fisher equation holds at all times. The model can be described by three simple equations that depend on expectations of future real output, future inflation, and future monetary policy. The spirit of Cochrane's analysis is to suggest that neo-Fisherian effects are part of even the most ordinary of macroeconomic models used to inform current monetary policy.

Cochrane (2015) uses a solution technique for the model due to Werning (2012). We can think of the economy as continuing from the distant past to the distant future. The policymaker chooses the short-term nominal interest rate sequence, and, given this sequence,

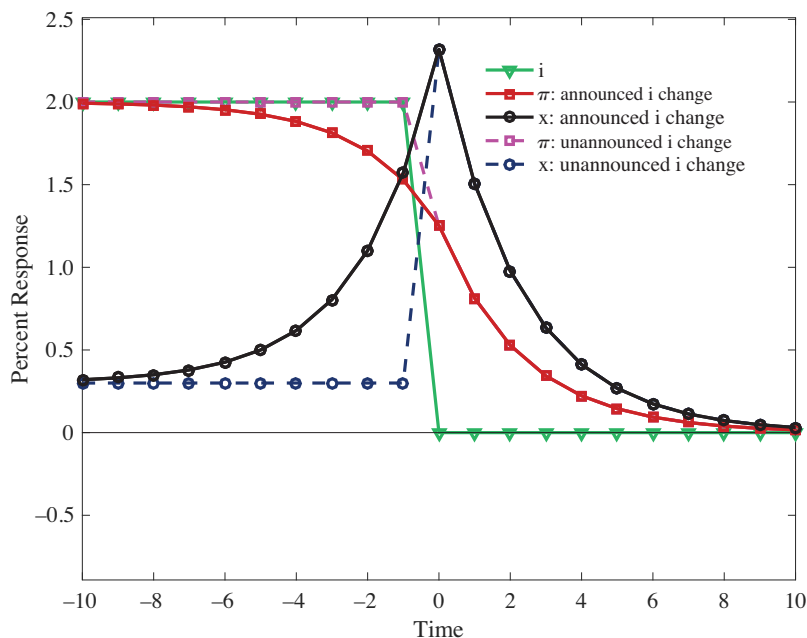
²See Woodford (2003) and Galí (2015).

the model traces out what would happen to the real output gap (x) and inflation (π).

I use Cochrane’s model to trace out the effects on the economy of the following thought experiment. Suppose the economy begins with the nominal interest rate equal to 2 percent, a real interest rate equal to 0 percent (for convenience), and an inflation rate equal to 2 percent. The Fisher equation holds, as it must, so that in the long run the policy rate will equal the inflation rate in this example. The policy-maker then lowers the policy rate by 200 basis points to zero, and leaves it there for a considerable time.

Figure 1 illustrates the effect of such a policy experiment in Cochrane’s (2015) model. The green triangles show the policy rate, which begins at 200 basis points but is lowered to zero at date 0. If the policy move is anticipated, as many actual policy moves are, then the effects on inflation are described by the red squares, and the effects on the real output gap are given by the black circles. If the

FIGURE 1
THE POLICY RATE FALLS 200 BASIS POINTS



SOURCE: Adapted from Cochrane (2015).

policy change is completely unanticipated, then the effects on inflation are given by the magenta squares, and the effects on the real output gap are given by the blue circles. In the case of a “surprise” policy move, nothing happens until the date of the move, whereupon the inflation and real output gap variables jump to the path they would have been on, had the policy change been known in advance. For our purposes here, it does not matter that much if we focus on an anticipated or an unanticipated policy change.

Instead, I want to focus on the right-hand side of this picture, after the policy move has occurred. The policymaker has lowered the policy rate to zero, and in response, the real output gap has increased.³ This is one way to gauge the real effects of monetary policy according to the model: a pure change in the policy rate, with no other shocks occurring, would temporarily increase output. This is what the model is designed to do, and if we added more shocks to the model, the policymaker could use this power appropriately to smooth real output over time. Smoother output would be preferred to more volatile output by the households in the model, and thus the model provides a theory of monetary stabilization policy.

But now let us look at inflation in response to the policy change. It falls in response to the policy change, very little at first, but more substantially as the zero interest rate policy continues. After about 2.5 years (10 quarters), at the far right of the chart, the transitory effects of the policy change have nearly completely died out. The real output gap is zero, the policy rate remains at zero, and the inflation rate has fallen to zero. This can be interpreted as a neo-Fisherian result: the policy rate is lowered, and after some transitory dynamics, the inflation rate falls to be consistent with the new interest rate peg.

It is clear from Figure 1 that, should the policymaker simply elect to keep the nominal interest rate at zero for a much longer time, nothing further would happen in this economy. The black, red and green lines would simply remain at zero.

Cochrane’s (2015) analysis, as I have translated it into Figure 1, yields a very different interpretation of current events compared to

³The long-run real output gap in this model is not zero unless the long-run inflation rate is zero, so the initial real output gap on the left-hand side of this picture is somewhat positive. This is not material to the argument here, but it has been discussed extensively in the New Keynesian literature.

conventional wisdom. Conventional descriptions of current monetary policy, including my own description earlier in this very speech, suggest that the Committee's ZIRP is putting upward pressure on inflation, perhaps dangerously so. Figure 1 suggests otherwise.

What's going on? The model does have a Phillips curve in that today's inflation rate does depend in part on today's real output gap. When the policy rate is lowered, the output gap is higher than it otherwise would have been, and this does put upward pressure on inflation in the model.⁴ However, the model also has a Fisher relation, which means that as the real output gap returns to normal (that is, monetary neutrality asserts itself), the inflation rate will have to fall to be consistent with the new level of the nominal interest rate. Another aspect is that the policymaker is viewed as choosing the interest rate sequence, and inflation follows as dictated by the Fisher equation. The policymaker cannot set the nominal interest rate and the inflation target in an inconsistent way.

A few of you may be aware of a closely related analysis by Benhabib, Schmitt-Grohé, and Uribe (2001) that I have championed in discussing dimensions of monetary policy since 2007–09.⁵ In that analysis, the Fisher relation also plays a prominent role, but the analysis is nonlinear and global. Benhabib, Schmitt-Grohé, and Uribe (2001) find two steady states, one of which is associated with a low nominal interest rate and inflation below target. Arguments in this context then center around which of the two steady states is the stable one in a reasonable expectation dynamic ("learning"). Often the argument is that the traditional steady state is the stable one and therefore the one worthy of the most attention from policymakers.⁶ The Cochrane (2015) analysis is of a linear system, and consequently ideas about "getting stuck at the wrong steady state" are not nearly as clear. Rational expectations prevail at all times.⁷

To illustrate that policymakers can reverse their actions in the Cochrane (2015) model, Figure 2 illustrates an alternative policy experiment. This experiment is almost the same as the one described

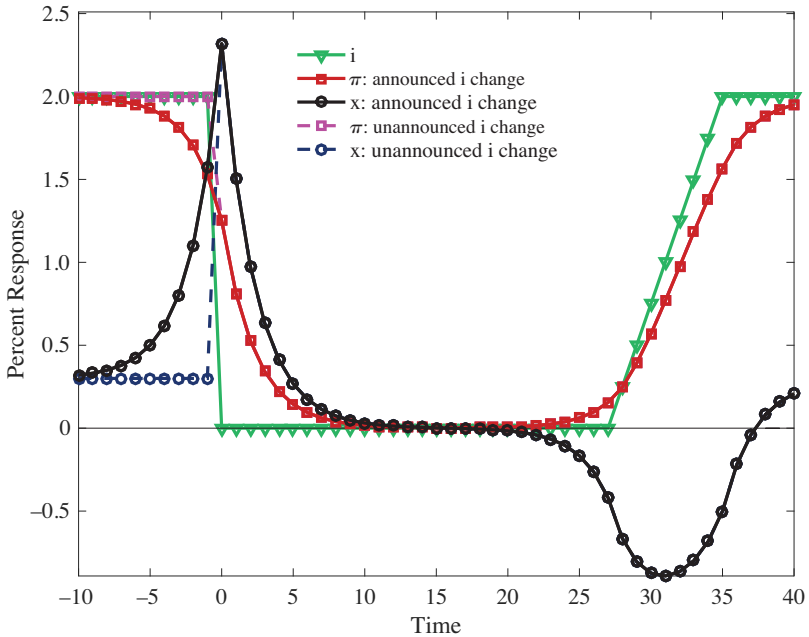
⁴The inflation decline is mitigated by the increase in real activity.

⁵See Bullard (2010) and Bullard (2015).

⁶See Eusepi (2007), Evans (2013), and Benhabib, Evans, and Honkapohja (2014).

⁷García-Schmidt and Woodford (2015) delve into this question and, in particular, consider departures from rational expectations.

FIGURE 2
A GRADUAL POLICY RATE INCREASE



SOURCE: Adapted from Cochrane (2015).

in Figure 1, except that the policymaker chooses the nominal policy rate sequence to remain at zero for seven years before gradually raising the policy rate back to 2 percent.

The left-hand side of Figure 2 simply repeats what is in Figure 1. The middle portion of Figure 2 shows how the case where the policy rate remains near zero simply keeps the inflation rate low and the output gap steady as the effects of the first policy move wear off. The gradual policy rate increase is shown in the right-hand portion of Figure 2 via the green triangles. This policy move is portrayed as being anticipated here, so inflation and the output gap begin to react before the actual date of liftoff. The rising rate environment puts downward pressure on the output gap, reversing the effects of the previous policy rate move. As before, inflation moves in tandem with the policy rate as the Fisher equation asserts itself.

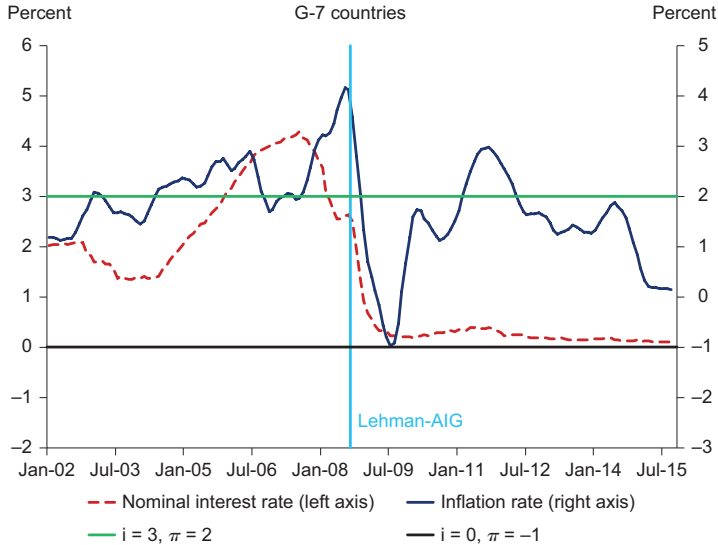
Is this what will actually happen in the U.S. economy? Definitely not, since we are looking here at pure policy effects with no other shocks added to the model. At best, Figures 1 and 2 can illustrate the directions that monetary policy can be expected to push in this particular model, but a more realistic analysis would include additional shocks, and monetary policy would have to react appropriately to those changes in macroeconomic conditions. Still, the key point is that this canonical model has a clear interpretation in neo-Fisherian terms, and that this interpretation is hardly surprising, since the Fisher equation is built into the model.

I have spent a lot of my time with these particular figures because I think they are interesting and can communicate to a wide audience in the monetary policymaking community. But I do want to stress that the New Keynesian model is just one model in a sea of possibilities. In addition, it is a model that was designed to describe the relatively good monetary policy in the United States from 1984 to 2007, without features that turned out to be quite important during the 2007–09 crisis and its aftermath. While I do not have time to emphasize other more novel work here, let me just say that there is important recent work in monetary theory and policy that has tried to explain very low real rates of return on safe assets along with the implications for monetary policy. Andolfatto and Williamson (2015), for instance, think of all consolidated government debt as having value in conducting transactions. Their model has a liquidity premium on government debt under some circumstances, and offers novel interpretations of current policy dilemmas. Caballero and Farhi (2015) similarly study safe asset shortages and suggest important ways that our understanding of the effectiveness of various policies at the zero lower bound would be affected. These are just some examples of interesting work going on outside the relatively narrow New Keynesian framework to try to come to terms with the reality of the post-crisis macroeconomy.

Empirical Evidence

Figures 1 and 2 suggest that low nominal interest rates and low inflation may go hand in hand, at least over relatively long horizons in which the policy rate is kept at a constant level. Over shorter horizons with more policy moves and more shocks, the correlation may not be very high. Policy rates have generally been very low, near zero, continuously in the G-7 economies since the 2007–09 period.

FIGURE 3
G-7 COUNTRIES' AGGREGATED INFLATION AND
POLICY RATES



SOURCE: OECD's *Main Economic Indicators* and author's calculations.
Last observation: September 2015.

Consequently, we may be able to look at the data since 2009 to see to what extent neo-Fisherian effects are exerting themselves in the G-7.⁸

To get at this issue in just one picture, Figure 3 shows the centered five-quarter moving average of the G-7 headline inflation rate and the average, GDP-weighted, G-7 nominal policy rate since 2002. In Figure 3, the inflation rate is the solid line on the right-hand scale, and the GDP-weighted nominal policy rate is the dotted line on the left-hand scale. The horizontal green line is an inflation rate of 2 percent, and the horizontal black line is an inflation rate of negative 1 percent. The vertical line in the middle of Figure 3 marks the Lehman-AIG event. On the left part of Figure 3, interest rates and inflation arguably behaved according to traditional interpretations of New Keynesian theory. On the right half of Figure 3, the nominal policy rate falls to near zero and remains there. Inflation initially falls

⁸For state-of-the-art empirical analysis of the issues discussed here, see Ariuoba and Schorfheide (2015) and Ariuoba, Cuba-Borda, and Schorfheide (2014).

across the G-7, but then impressively returns close to target. In fact, inflation was above target as of the beginning of 2012, about 2.5 years after the end of the recession in the United States. Since then, however, policy rates have remained near zero and inflation has drifted down, to the point where G-7 inflation is around zero today.

Conventional wisdom would have suggested that the zero policy rates in the G-7 were putting upward pressure on inflation during the nearly four years since January 2012, but instead, inflation fell. This could be viewed as consistent with neo-Fisherian effects asserting themselves. Of course, we have to be cautious about carrying such an explanation too far. There have been many other shocks during the past four years, notably a very large oil price shock beginning in the summer of 2014.

Consequences

Let us suppose for the sake of argument that the G-7 economies will spend still more time at or near the zero lower bound. This would occur because either liftoff does not materialize in most or all countries or because additional negative shocks drive those countries that do raise their policy rates back to the zero lower bound. Prudent policymaking suggests that we should at least entertain this as a realistic possibility for the path of G-7 monetary policy in the coming years. What are the consequences of remaining in such a state for a long period of time?⁹

I can think of six consequences, based on the discussion in the earlier part of this speech:

First, consider the near-zero policy rate path illustrated on the right-hand side of Figure 1. In this situation, promising to keep the nominal interest rate sequence at the zero lower bound simply reinforces the equilibrium and does not provide accommodation as in the traditional New Keynesian equilibrium. Nothing happens in response to such promises. Policymakers would have to come to grips with such a situation.

Second, in such a situation, inflation remains persistently below the stated inflation target. The near-zero policy rate is not putting upward pressure on inflation, but is instead through the Fisher

⁹Cochrane (2014) addresses how U.S. monetary policy might operate in a zero policy rate and large balance sheet environment.

equation dictating a rate of inflation lower than the original target. It could be that policymakers do not intend to return to the original equilibrium—that is, they may intend to remain with the near-zero policy rate. In that case, policymakers may wish to lower the inflation target to remain more consistent with the actual inflation outcomes.

Third, longer-run economic growth would still be driven by human capital accumulation and technological progress, as always, but without the accompanying stabilization policy as conventionally practiced from 1984 to 2007. In principle, the economy would still be expected to grow at a pace dictated by fundamentals.¹⁰

Fourth, the celebrated Friedman rule would arguably be achieved, so that household and business cash needs are satiated. In many monetary models, this is a desirable state of affairs.

Fifth, the risk of asset price fluctuations may be high. In the New Keynesian model, the near-zero interest rate policy with little or no response to incoming shocks is associated with equilibrium indeterminacy. This means there are many possible equilibria, all of which are consistent with rational expectations and market clearing. In a nutshell, a lot of things can happen. Many of the possible equilibria are exceptionally volatile. One could interpret this theoretical situation as consistent with the idea that excessive asset price volatility is a risk.

Sixth, and finally, the limits on operating monetary policy through ordinary short-term nominal interest rate adjustment in this situation would surely continue to fire a search for alternative ways to conduct monetary stabilization policy. The favored approach during the past five years within the G-7 economies has been quantitative easing, and there would surely be pressure to use this or related tools.¹¹

Conclusion

During 2015, I have been an advocate of beginning to normalize the policy rate in the United States. My arguments have focused on the idea that the U.S. economy is quite close to normal today based on an unemployment rate of 5 percent, which is essentially at the Committee's estimate of the long-run rate, and inflation net of the

¹⁰Endogenous growth theories that mix long-run growth prospects with monetary policy practice are rare and of dubious empirical validity.

¹¹For some recent arguments concerning the future of monetary policy in a low interest rate environment, see Haldane (2015). For a theoretical analysis of quantitative easing at the zero lower bound, see Boel and Waller (2015).

2014 oil price shock only slightly below the Committee's target. The Committee's policy settings, in contrast, remain as extreme as they have ever been since the 2007–09 crisis. The policy rate remains near zero, and the Fed's balance sheet is more than \$3.5 trillion larger than it was before the crisis. Prudence alone suggests that, since the goals of policy have been met, we should be edging the policy rate and the balance sheet back toward more normal settings.

Implicit in my argument has been a yearning to return to the monetary equilibrium of 1984–2007, which is one around which a great deal of theory and empirical work has been done. We would be returning to a world in which monetary policy is better understood, the effects of policies are more closely calibrated, and private sector expectations can move and adapt to ordinary adjustments of the policy rate.

My current policy views have not changed. But in the spirit of the conference, I have tried to contribute to the topic of "Rethinking Monetary Policy" by focusing on a situation where the nominal policy rate and the inflation rate remain low, either because liftoff does not materialize or because future negative shocks to the economy force a return to the zero interest rate policy. I have illustrated by reference to relatively new research how such a situation could become permanent. In addition, I have suggested several consequences of remaining at such an equilibrium over the long term. It is my hope that my characterizations here will spur further thinking and research on these important topics.

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BOOK REVIEWS

Relic: How Our Constitution Undermines Effective Government— and Why We Need a More Powerful Presidency

William G. Howell and Terry M. Moe
New York: Basic Books, 2016, 256 pp.

There is a grim inevitability to William Howell and Terry Moe's *Relic: How Our Constitution Undermines Effective Government—and Why We Need a More Powerful Presidency*. For many years, indeed since Woodrow Wilson's *Congressional Government* in 1885, people have taken the American Constitution to task for jamming up the works of government. Without the concurrence of the House, Senate, and President, it's virtually impossible to pass a law. In contrast, you don't see gridlock in a parliamentary system.

For most American conservatives, that was just fine. We didn't want "progress"—things were bad enough already. Rather, it was the 20th-century progressives who objected to the separation of powers, which got in the way of the reform legislation they proposed. More recently, however, there's been a reversal of roles, as conservatives have recognized that gridlock has made it almost impossible to repeal laws they hate: our Tax Code, the 1965 Immigration Act, and a host of special-interest laws passed when Democrats controlled all three branches. For their part, the intelligent progressives might recognize that gridlock favors things they like: Obamacare, the EPA, and legislation favoring one part or another of the Democratic constituency.

Most conservatives, in the age of Obama, would remedy this by empowering an impuissant Congress. Obama's willingness to

disregard Congress and rule by ukase has troubled many on the Right, especially when both houses of Congress are controlled by Republicans. Remarkably, Howell and Moe offer a cure for gridlock through a further grant of power to the presidency. What they would give the president would require a constitutional amendment, which is one reason not to pay too much attention to their book. Another reason is that what they propose—fast-track authorization for all policy matters, including budgets and authorizations—would further empower an executive branch already on steroids.

That's not what the Framers wanted, and Howell and Moe's understanding of the Philadelphia debates seems almost entirely derived from the secondary literature in political science. Had they paid more attention to the notes of the debates, they would not have dismissed the delegates' fear of what George Mason called an "elective monarchy," and they might then have thought more carefully before proposing something like that for America. The authors might also have benefited from a greater understanding of comparative constitutional law. They tell us that America is the only presidential system, whereas I count 83 of them. With a greater knowledge of the rest of the world, the authors might also have encountered the persuasive empirical literature suggesting that presidential regimes are bad for liberty.

Presidential systems tend toward tyranny because they concentrate power in one person as the head of state and head of government. Moreover, presidents aren't accountable to Congress the way that prime ministers are accountable to the House of Commons, with their duties to show up at Question Period and run the risk of dismissal through a non-confidence motion. Because of this, presidents in presidential regimes are encouraged to abuse their power and threaten political liberty. The failure of Howell and Moe to acknowledge these findings leaves the reader entirely unpersuaded by their thesis.

In response, those favoring a presidential system may raise the standard of American Exceptionalism. We are exceptional in that we have preserved liberty in spite of our Constitution. But when one considers how the Democrats ran a rock star as president in 2008, and how voters and the media reacted to Obama, one might begin to wonder whether we are really all that different from the less successful presidential countries. There remains, of course, the requirement of an election every four years, but that simply means that we've become what political scientist Theodore J. Lowi condemned as a

“plebiscitary republic with a personal presidency.” And then Argentina suggests the possibility of a wife succeeding a husband, for a 16-year run. Might that even happen here, one wonders?

Howell and Moe correctly blame much that is wrong with congressional legislation on the perverse incentives of individual members of Congress, who seek wastefully to bring pork to their districts. One can’t do anything to cure this, they argue, and thus we need a strong presidential system. But there is a congressional response to minoritarian misbehavior of this kind, and that is to nationalize congressional elections as Newt Gingrich did in 1994. We saw partial efforts to repeat this in the Tea Party congressional elections of 2010 and 2014. That doesn’t require the kind of impossible constitutional amendment the two authors propose, and it wouldn’t threaten political liberty. But neither of these is considered by the two authors.

Howell and Moe dismiss the Constitution as a “relic,” the title of their book. I do not know whether they have seen real relics. I have, and I venerate them, as is proper. I feel the same way about the Constitution, notwithstanding any imaginary amendments I might concoct in my mind.

F. H. Buckley

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Frank: A Life in Politics from the Great Society to Same-Sex Marriage

Barney Frank

New York: Farrar, Straus and Giroux, 2015, 400 pp.

As a social scientist, it is easy to forget that policy is ultimately made by people—real, living human beings participating in real-world institutions. At the center of American public policymaking is Congress, an institution largely populated by forgettable names and faces. Barney Frank is not one of those. His recent book, *Frank*, which takes us from his earliest days in Boston politics to his recent retirement, reminds us why. It also reminds us of the give-and-take process of legislating. Whatever one’s own policy preferences, *Frank* offers a variety of lessons on the congressional process.

Frank is not an academic book, despite its author’s professed academic pretensions. It is, however, a book academics can learn from. Plus, as a book heavy with the author’s infamous wit, it is generally an

enjoyable and humorous read. *Frank* goes a long way toward rebuilding his tarnished reputation, yet is occasionally marred by the congressman's indulgence in partisan rancor, which he admits to being "good at."

Frank is essentially an attempt to explain two trends in American life. The first is the tremendous increase in social acceptance of LGBT individuals. The second is the increase in general public skepticism toward government. While never exactly explaining why, Barney Frank sees these two trends in conflict. For Barney, acceptance of LGBT people is almost synonymous with support for big government, so of course he's puzzled at the diverging trends. He never considers that perhaps both are driven by experience. Greater exposure to LGBT individuals has likely reduced discrimination, while greater exposure to government has perhaps increased skepticism toward it.

The congressman sees the case for big government as a "no brainer." As his primary evidence, Frank cites the federal ban on lead under President Nixon, which he claims resulted in fewer brain-damaged children. Of course, he either ignores or is ignorant of the facts that the federal government for decades promoted the use of lead paint and that, by the time of the 1970s bans, the use of lead paint in new residential construction had already largely ended. Nor does he confront the fact the prevalence of lead paint is far worse in government-run public housing than in comparable private housing. And that's just a single example of Barney's selective reading of the facts to fit a preexisting bias toward government action.

Where the book succeeds is in reminding us that Congressman Frank had a long, noble career reversing government harms. His leadership in redressing the harm done to Japanese Americans under FDR's internment alone outshines the accomplishments of most members of Congress. His work on eliminating the worst homophobic and racist elements of our immigration laws is beyond commendable. His first bill introduced as a state representative was aimed at reducing government involvement in the bedroom by repealing Massachusetts's sodomy law. Congressman Frank has also been a loud and consistent advocate for ending our failed, costly drug war. And of course there are his many efforts at achieving marriage equality. These are just a few of his notable achievements in helping individuals have freer lives.

Of particular interest is that many of these victories were incremental. *Frank* could have easily been subtitled: “In Defense of Political Pragmatism and Compromise.” Frank repeatedly recalls stories where allies accused him of selling out or when he saw allies engaging in strategies that he saw as ineffective, if not counter-productive. One instance, related to the 1993 March on Washington for gay equality, was when Frank talked a group of gay soldiers out of performing a “Rockettes” dance routine, which he believed would have reinforced stereotypes.

These discussions are perhaps the most valuable in the book. Whatever their substance, Barney Frank had a number of legislative victories. Anyone engaged in, or studying, the relationship between government and social change could learn a lot from this book.

Frank also inadvertently makes the case against compromise, at least in the area of financial regulation. I got to know Congressman Frank during my time as a Republican staff member for the Senate Banking Committee, where I primarily handled issues related to mortgage finance and housing, including oversight of Fannie Mae and Freddie Mac. Coincidentally, my time on Capitol Hill began just as Congressman Frank was ascending to the role of lead Democrat on the Financial Services Committee. He readily admits he “had not thought a great deal” about financial markets prior to taking this leadership position.

The later third of *Frank* addresses both the financial crisis and the passing of the Dodd-Frank Act. Two of the author’s objectives are to rebut the arguments that “liberals pushed lenders into making loans that were highly unlikely to be paid” and that “Democrats blocked Republican efforts to rein in Fannie Mae and Freddie Mac.” His argument against the second claim is that Republicans were largely “in charge” during the years leading up the crisis. Bush was in the White House, and Republicans held majorities in both houses of Congress for much of that time.

Those facts are obviously correct. And I can attest that certain Republicans, like Senator Robert Bennett, were as much obstacles to reform as any Democrat. Congressman Frank, however, excuses himself and other Democrats from blame by making the correct observation that many Republicans supported Fannie Mae and Freddie Mac and opposed increased regulation. By Washington standards, everyone’s sin is no one’s sin, yet this offers the public little comfort. Moreover, it ignores the fact that, while many Republicans opposed

strong regulation of Fannie Mae, the only members of Congress that supported bank-like regulation of Fannie Mae were on the Republican side. Congressman Frank admits the he “had been too optimistic” about the financial health of Fannie and Freddie, but then he blames it on the Bush administration’s efforts to increase their housing goals.

In attempting to clear his own name, and those of fellow Democrats, Congressman Frank argues that many Republicans were right there alongside him. Yes, the companies had protectors in both parties, but that does not explain Congressman Frank’s many bold statements about the companies before the crisis. In 2003, for instance, Frank stated that Fannie and Freddie should not be subjected to the same level of safety and soundness practiced by the Office of the Comptroller of the Currency, which regulated, among others, such companies as Citibank. For Frank, even the widely accepted poor supervision of Citibank would have been too much for Fannie and Freddie.

He also claims that “liberals made three separate efforts” to reduce poor mortgage lending. What he fails to mention is that none of these efforts actually addressed the worst drivers of mortgage default: borrower equity (loan-to-value) and borrower credit history. Frank repeatedly whitewashes his role by claiming he was “overly optimistic” about the health of Fannie and Freddie and implying that that is sufficient to explain away his opposition to subjecting Fannie and Freddie to bank-like regulation. Despite the fact that his “roll the dice” comment, said in regard to regulating Fannie Mae and Freddie Mac, comes in the middle of a discussion about safety and soundness, he claims it wasn’t really about safety and soundness. The fact is that Congressman Frank was never really bothered by the potential for a large taxpayer bailout of Fannie and Freddie or by the possibility of their contributing to a boom and bust in the housing market. His creditability would be bolstered by simply being more direct about placing so little weight on financial stability. A constant theme in financial regulation is the tradeoff between stability and expanding the availability of credit. Directly addressing this tradeoff could have added significant insight to the book, as well as to the larger financial stability debate.

What *Frank* does convey, contrary to many Republican claims, and which is completely consistent with my experience, is that Congressman Frank was the not primary obstacle to reform. Understandably, the book focuses on negotiations in the House. But the really tough battles and substance were actually hammered out in

the Senate, and the primary obstacle there was Maryland Senator Paul Sarbanes. The retirement of Senator Sarbanes, who led the Democrats on the Senate Banking Committee, was the only reason that reform of Fannie Mae passed in 2008 rather than earlier. The successful 2008 Fannie Mae reforms, which were supported by Frank, were essentially the reforms proposed by Senator Richard Shelby that Sarbanes had opposed. With Sarbanes retired and Dodd back from his failed presidential campaign, Republicans and Democrats were quickly able to reach agreement. I can personally attest that Congressman Frank was a reasonable and pragmatic part of those negotiations. He didn't advocate protecting the taxpayer, but he was willing to engage in negotiations with others who did.

Frank also discusses negotiations over both the creation of the Troubled Asset Relief Program (TARP) and the passage of the Dodd-Frank Act. Given his prominent role and support of both pieces of legislation, it is not surprising that he speaks of them favorably and is dismissive of any objections. But then, this is not an objective book nor does it pretend to be. Nevertheless, Frank offers a valuable picture of the process. Frank admits, for example, that TARP was generally embraced because of the lack of any obvious alternative. And Frank's criticism of Senator Richard Shelby's objection to TARP was that Shelby had not offered any alternative. This might seem odd if it were not such a common perspective on legislative matters. The bias for action over reflection in Congress is on full display here.

Given the ever-growing number of financial crisis and reform memoirs, including a book-length coverage of the passage of Dodd-Frank by Robert Kaiser, one could reasonably inquire whether there's anything left to add from Dodd-Frank's supporters. Frank's narrative is largely consistent with Kaiser's, but since Barney Frank and his staff were some of Kaiser's primary sources, anything else would have been surprising. But Frank, as an author of Dodd-Frank, does give his views on its intents and limitations. While this doesn't exactly constitute legislative history, it does help inform the objectives of Dodd-Frank, and many have argued that Dodd-Frank might not quite work out as promised. Accordingly, Frank's assertions, while providing context and background as to legislative intent, should be taken with several large grains of salt.

Now back to the issue of compromise. If there's one word that is an accurate description of our financial regulatory system, it is "compromised." We have neither the Wild West imagined by some on the

Left nor a well-run, comprehensive regulatory system. What we do have are massive guarantees, creating considerable moral hazard, combined with regulators more intent on making cheap credit widely available than they are on achieving stability. I would submit that either a completely free market or completely nationalized system would perform better than our current compromised system (obviously I prefer a free market). The American financial system's long string of crises and bailouts is a direct result of the sort of compromise that *Frank* praises. It is also why many across the political spectrum rightly see Dodd-Frank as failing to end too-big-to-fail.

In his first year in Congress, Congressman Frank tells us he joined the Banking Committee because he cared about housing. The sorry story of Fannie Mae and Freddie Mac is that filling a committee tasked with overseeing our financial system with people who have little interest or knowledge in financial stability is a recipe for disaster. The book does, however, provide an interesting case study in how the jurisdictional structure of congressional committees influences the substance of legislation. The fact that so many policymakers who have been involved in banking regulation come from a pro-housing subsidy perspective may well explain a number of flaws in our financial system. Pulling housing out of the banking committees could significantly improve the quality of our financial regulatory system.

Barney Frank, like the rest of us, has many failings. He admirably admits to several. His political career serves as a useful reminder of where pragmatism and compromise can succeed, but also where they can fail with dangerous consequence. For these reasons alone, *Frank* offers a valuable, if flawed, read.

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The Tragedy of European Civilization: Towards an Intellectual History of the Twentieth Century

Harry Redner

New Jersey: Transaction Publishers, 2015, 257 pp.

The image of the sinking Titanic's band playing a requiem to the ship-builders' hubris presaged that of concentration camp inmates playing classical music as their fellow Jews were being herded toward the infamous ovens. In both cases, the tragedy unfolding around

them was beyond the musicians' power to stop; so too, both catastrophes might have been prevented—in the first case by better technology and more safeguards, and in the latter by taking seriously the lethal anti-Semitism of a virulently militaristic, anti-rationalist ideology that would soon engulf not only Europe but also the world. But while the vagaries of Nature with its storms and icebergs can never be expected to disappear altogether, the Holocaust marked a historical watershed: it would come to symbolize the tragedy of the civilization we may call European or, indeed, Western.

What makes it a tragedy in the classical sense is that the flaw was—is—internal, self-inflicted. As intellectual historian Harry Redner demonstrates in his seminal book *The Tragedy of European Civilization*, the unlikely though not always unwitting executioners of the West were philosophers, psychologists, and other wordsmiths who not only predicted but also contributed to the demise of the very ideas that had nurtured them. Like Oedipus who had slayed his own father, these brilliant minds had blinded themselves, using the dagger of language against itself. Rational individualism, which lay at the core of their—our—civilization, had been sabotaged from within: a metaphorical murder-suicide that defies explanation, or at least justification. These Western quasi-jihadists didn't even expect virgins in heaven; they had opted for a living hell.

A Galician-born Holocaust survivor who emigrated to Australia in 1946, where he became a professor of intellectual history, Redner's topic is the European conversation around the turn of the last century regarding man's nature, his place in society, the role of the state, and the value of freedom. Such books are rare in this country, for American academia has not been especially hospitable to this discipline, preferring empirically oriented political science, sociology, and psychology (with emphasis on neurobiology) to social thought. Yet Continental philosophers' mesmerizingly ambiguous verbiage has infiltrated beyond the ocean and is now ubiquitous on our college campuses as well, its carriers mostly French. Indeed, French Theory, or "Theory for short," writes Redner, currently "exerts a strong influence . . . on all the special 'studies' courses that came to proliferate during the 1970s, such as cultural studies, gender studies, legal studies, post-colonial studies, and many more."

What few realize is that the not-so-invisible hand behind these benign-sounding disciplines belongs to the redoubtable, deranged genius of Friedrich Nietzsche, operating through the glove of his no

less erratic, certainly inconsistent, yet appallingly seductive disciple, Michel Foucault. Thus, Redner's book is not of mere antiquarian or esoteric interest, for the tragedy of which he speaks continues to affect us all to this day, in ways both manifest and subtle. Understanding its origins may not be sufficient to reverse it, but it could postpone or at least alleviate the severity of the devastation.

The key message of this remarkably lucid, if occasionally esoteric, study is the revelation that Nietzsche—and several other thinkers including Karl Marx, Oswald Spengler, Sigmund Freud, Martin Heidegger, and Ludwig Wittgenstein—did not merely play the violin as the ship of Reason sank into an ocean of hatred and barbarism, they urged it on, whether from self-hatred—subliminal or otherwise—misguided idealism, profound disenchantment with logic, or a mixture of all three. In any event, Redner describes the cause of the European tragedy as “self-generated. No barbarian hordes battered at its gates. No lack of resources drove starving masses to storm its citadels. No loss of faith or despair overwhelmed its people. On the contrary, too great hopes, utopian illusions, enthused many of them.” He concludes that its “ultimate cause was the willingness by so many to surrender their fundamental civilizational values and seek some other kind of salvation.” The cost turned out to be “the destruction of everything that civilization stood for.” It was a price they were not only willing to pay but also apparently unable to resist.

The country that initiated the avalanche of declinist thought is of course Germany, whose role Redner believes to have been prophetically anticipated by the Viennese satirist Karl Kraus in his World War I drama, *The Last Days of Mankind*. In this remarkable play, Kraus recognized that a tragedy was taking place in Europe in which not King Lear but the Fool was the central character. Though he died in 1936, before he could witness the Holocaust, Kraus clearly had in mind Hitler as the Fool, while King Lear may well have been civilization itself.

Another writer who instinctively grasped the coming deluge was the great German novelist Thomas Mann, whose monumental novel *Doctor Faustus*, written throughout the duration of the Second World War, implicitly captured Germany's despicable decision to sell its soul to the devil. What sealed the fate of Europe was that Germany catapulted on the world scene in the 1870s, when it was far from ready for the big-power responsibilities that history then

demanded. Its road to nationhood, moreover, had been “paved by an exacerbated nationalism of a virulent kind that was highly militaristic and so could easily turn violent.” Worse still, the military strategist Carl von Clausewitz endorsed war as a legitimate means to realizing national aspirations. Though Germany was in reality a nation divided, nationalism fueled its arrogance. Culturally rich yet politically “immature and power driven” as well as, even more dangerously, “morally complacent and self-righteous,” it felt entitled to rule Europe, tempted by illusions of grandeur couched in apocalyptic terms. In the midst of all this, fatally, rose anti-Semitism as a political ideology.

Anti-Semitism patently represented the triumph of group identity over individual responsibility. For demonizing someone on account of that person’s race, ethnicity, class, or anything other than individual action is to reject what is most basic to the Judeo-Christian tradition, namely, personal moral choice. Anti-Semitism was a symptom of a much larger malaise; it was “but one of the many rifts in the cultural life of Europe that made rational dialogue,” even among intellectuals, all but impossible. Madness would soon prevail. Ultimately, what broke up the integrity of European civilization were the twin ideological currents of Marxism and Nietzscheanism, fueled by a shared loathing for the very bourgeois culture that had nurtured them—a culture both Nietzsche and Marx considered doomed. And while they held different visions of the future—Marx predicting the triumph of the proletariat, Nietzsche that of the Master Race—they conspired, all too successfully, in substituting Power for Reason in politics.

Call it dialectical materialism as does Marx or the Will as does Nietzsche, in the end the triumph of power implies the end of morality. Marx defined political power as a reflection of economic contradictions—serving the wealthy to enslave the poor. Political power thus requires that contradictions be eliminated and, with them, the state and, indeed, history itself. For Marx, therefore, the Lockean notion of justifying the existence of the state by the rational consent of the governed has no meaning at all. So too Nietzsche reduced everything to power: “[T]ruth is power, knowledge is power, and reason is power.” But as Redner points out, “[O]ne can only oppose power with power in which the greater power prevails.” Survival of the most ruthless is Darwinian anti-morality on steroids. When the state of nature and the state of war

are synonymous, forget social contracts. Like Marx, Nietzsche had no room in his universe for consent, since there is no rationality. And if Reason is dead, it doesn't matter whether God is dead or alive: for even He could do nothing to save us from ourselves.

Only a little younger than Nietzsche but coming from another perspective altogether, the sociologist Max Weber defined the state as an advanced form of authority that relies largely on rational-legal legitimation. This, as Redner points out, is a "form of legitimacy [that] has its roots in ideas and practices that are far removed from militarism and violence. It derives from the systematic rationalization of law and constitutionalism, from representative and democratic institutions, and from doctrines of sovereignty and consent. For Marx, all this is mere ideology"; for Nietzsche, it's a disingenuous mask for what is at bottom a device by the weak to hold down the strong. Weber's influence, alas, proved negligible. But his view of the state as a form of oppressive authority, however legitimate, seem to have made an impression on a Viennese Jewish psychologist by the name of Sigmund Freud.

Freud, who died at the very start of the Second World War, saw the state and, more generally, civilization, as constituting a mechanism of repression designed to tame the wild, unconscious forces of raw instinct. But while acknowledging that civilization is the lesser of two evils, certainly preferable to unleashing potentially lethal libidinal forces, he pessimistically admitted that only a very few exceptional people are able to "sublimate" that repression into art or science. This amounted to all but condoning barbarism—while simultaneously predicting (as well as, argues Redner, contributing to) the tragedy of European civilization—by deeming its expression natural and even life-affirming, if dangerous. Morality, of course, didn't have much to do with it—having already been defined out of existence.

But it was Oswald Spengler's dubious honor to have brought all the various epistemological strands together and to articulate the *Zeitgeist* that brought about the regime that, in turn, eventually enacted the infamous tragedy. By proclaiming the inevitable demise of non-German, sclerotic, European "culture" (*Kultur*), Spengler effectively justified the First World War. And by heralding the dawn of a technologically superior *Zivilization* that would hail technology as against anemic art and useless philosophy, Spengler glorified a posthistorical paradise of scientific modernity. Like Marx, Spengler considered this development inevitable; for, as Redner points out,

“[He] too prescribes what to do by reference to what must be; they both share the fallacies of historicism,” which consist of arguing normatively (that is, morally) from what has been declared factually necessary. The ambiguity between “will” and “should” hidden within a “must” is thus conveniently glossed over. Passing first from *is* to *will*, which are both empirical, and then from there seamlessly to *ought*, language stealthily transgresses right over the categorical border from description to ethics, dispensing with the passport of logic.

The triumph of technology, for Spengler, goes hand in hand with the triumph of socialism—a “mighty politico-economic order” based on technology, which Redner observes is “Faustian Man’s proudest achievement.” Not that Spengler himself thinks of socialism as a deal with the devil—quite the opposite. Writes Redner: “Totalitarianism and technology on a racial basis is Spengler’s prescription for the *Zivilization* that is coming. A kind of *Caesar ex Machina* will descend on the state of History. The last remnants of *Kultur* are to be brutally trodden under foot: ‘of great painting or great music there can no longer be, for Western people, any question.’” That Caesar would emerge both figuratively and literally from the machine may seem abhorrent to us, but apparently not to Spengler. Sure enough: in time totalitarianism and technology did indeed bring great painting and great music closer to an end, though, comments Redner, “in this endeavor capitalism and communism helped as well.”

For communism to do so was certainly to be expected, it being little more than socialism, even if not with a Nazi but a Leninist face. But what of capitalism? Though Redner does not say so explicitly, the answer is found in Spengler’s conception of “metaphysical hatred,” which arises between groups that inhabit different “civilizational chronologies.” On the one hand, claims Spengler, are “the intellectuals . . . incapable of understanding the depth of this metaphysical hatred”—who are even stupid enough to seek to combat anti-Semitism, if you can imagine. To them are opposed “the powers of blood,” who “seize the management of the world.” The so-called intellectuals having allied themselves to the “money-powers,” they may be collectively considered to represent capitalism, as opposed to the life-affirming socialism “that transcends all class interests”—indeed, all private interests. If in the process intellectuals vanish, so be it. Observes Redner, Spengler thus “presumably also consigns his own book to oblivion—the intellectual ever ready to sacrifice himself on the altar of a mindless future of race and blood.”

Spengler died before Hitler's invasion of Poland, so it would be Martin Heidegger's turn to pick up where Spengler left off. Though Heidegger did not share Spengler's adulation of technology, they both rejected classical Western tradition with equal ferocity, and both hailed the imminent arrival of a new dawn of "Being" that they thought the Nazis would deliver, though Heidegger lived to be disappointed. They thus rejected liberalism in all its forms: truth, beauty, and goodness would all be redefined. Heidegger retained Spengler's "metaphysical hatred," defined as the irreconcilable, irrational opposition of classes/races/civilizations/religions—in a word, nihilism, the kernel of tragedy.

Which brings us to the present and the demise of rational discourse in the public arena. The intellectual, or at least academic, heirs of the German philosophers from the turn of the last century are omnipresent on American, and more so on European, campuses, assiduously spreading the noxious miasma of "isms" shrouded in unintelligible jargon that does precious little to educate, though quite a bit to obfuscate, and worse. In truth, the Manichean thinking that pits one group against another, that justifies violence in the name of some mysterious march of history, on whose "right side" we should seek to position ourselves lest we be thought *passé*, sabotages our civilization with self-destructive ferocity. For along with Reason dies responsibility, the private realm, the individual, creativity, and indeed everything that we value. Hatred, metaphysical or otherwise, will spell not only the end of the misguided, solipsistic, self-destructive intellectuals who espouse it, but also the death of civilization and of humanity as we know it.

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Private Governance: Creating Order in Economic and Social Life

Edward P. Stringham

New York: Oxford University Press, 2015, 296 pp.

There already exists a large and consistent literature about the virtues of private governance, a literature to which Edward Stringham himself has already contributed. His latest book, *Private Governance: Creating Order in Economic and Social Life*, partially

based on previous publications, is a new study devoted to the same topic. Yet, this book is important because it is particularly useful at demonstrating that private governance works. More precisely, it is not only what is demonstrated but also how it is demonstrated that gives the book its value.

Private Governance is not an exercise in pure and abstract science of the sort practiced by mainstream economists. Rather, it is a study of institutions that arise from individuals' choices, correspond to their needs, and are adapted to each situation. To adopt such a pure and abstract approach to study private governance would be vain and useless because it would miss the main features of private governance, namely, its adaptability and specificity. Thus, "because private governance is not a one-size-fits-all solution, research in private governance *can* analyze the various ways that parties deal with problems." "Can" and *must*, I would add. That is precisely what Stringham does in the book: he studies different examples of private governance and provides empirical evidence that, in a variety of different contexts, people devise their own (institutional and private) solutions to deal with the problems they face.

Such was the case in the 18th century, when the London Stock Exchange was created; or in the early 19th century, when "San Franciscans created a system of private police to ensure their physical security"; or, more recently, when PayPal faced massive frauds and lost huge amounts of money. Rather than waiting for a possible governmental solution, PayPal devised private solutions. Actually, all the examples given in the book confirm that it is common for individuals to not rely on state intervention—to not wait for a *deus ex machina*, to use Stringham's words, to solve their problems for them. This might surprise those who are used to government interventions and who tend to believe that markets cannot emerge and function without governments. But it has not always been like that.

Despite the book's empirical focus, it is not merely a spineless, atheoretical collection of facts, such as the type of empiricism used by the institutionalists. That would also be a serious flaw. Instead, Stringham adopts an approach that combines, in the words of George Mason University economists Peter J. Boettke and Christopher J. Coyne, "[T]he logical structure of economic reasoning with the rich institutional details of history and anthropological and sociological analysis"—an approach that also characterizes most of the recent analyses

of private governance (see, for instance, *Anarchy Unbound: Why Self-Governance Works Better Than You Think* by Peter T. Leeson, and *The Social Order of the Underworld: How Prison Gangs Govern the American Penal System* by David Skarbek). In other words, Stringham uses economics to make sense of the empirical evidence.

From this perspective, *private* governance works—and one could even say works *better* than public governance—because, first, decentralized mechanisms work better than centralized ones and because, second, private governance emerges from individual choices and knowledge. As Stringham reminds us, this is the classic argument about decentralization, markets, and knowledge forwarded by Friedrich Hayek in his famous 1945 essay, “The Use of Knowledge in Society.”

But decentralized knowledge alone does not explain why markets and private governance work. Someone could admit that “individuals know better” and therefore that one must rely on their particularized knowledge. But having knowledge does not necessarily mean that it will be used or, more broadly, that people will agree to cooperate. There is also the issue of incentives, which are crucial to mainstream economists. People are self-interested, and they seize opportunities to free-ride and behave opportunistically. Thus, all human interactions essentially take the form of prisoner’s dilemmas.

For some, that opportunism explains why markets and decentralized mechanisms necessarily fail and why the intervention of the state—that is, external coercion—is necessary. According to the same reasoning, private governance should also fail. Yet, as Stringham’s book shows, we have many compelling examples that it does not fail. It seems that individuals, even though they are self-interested, spontaneously use their particularized knowledge and cooperate with others. For instance, notes Stringham, in San Francisco during the 19th century “residents privately financed police”—that is, a public good—without realizing that “what they did was actually impossible” according to traditional economic theory. It seems that, in many cases, there is no need for coercion or, at least, there is no need for external coercion—that is, threats of force from others. People behave pro-socially, as has largely been shown by experimental economics, and they can “police” or “govern” themselves. “Individual self-governance,” writes Stringham, “is one of the most important sources of governance,” and it’s crucial to explaining why private governance works at all.

In addition, the capacity to police oneself and the corresponding willingness to cooperate do not depend on the size of the group. This realization is important because both opponents and those who are rather favorable to private governance seem convinced that, while people may cooperate in small groups, they free-ride in large ones—what James Buchanan called a “large group dilemma.” To Stringham, such a dilemma does not exist. Individuals cooperate and coordinate with each other in large groups and in small groups, as well as when they are engaged in both simple and complex transactions. Game theory may tell otherwise, admits Stringham, but “rather than using game theory to debate whether cooperation is or is not possible in relatively large advanced markets without enforcement, a more fruitful approach is to study actual markets to see how they work.” For example, the history of the world’s first stock exchange, created in Amsterdam in the 17th century, proves that large groups and complex transactions did not prevent cooperation. Participants devised an informal mechanism of reputation-based governance that worked even between those who did not interact repeatedly.

Finally, Stringham also explains why public institutions should not be added to—and should not replace—the private ones that already exist. This is indeed a serious question: if private governance works, and if individuals find institutional solutions to their problems, why are public institutions needed? Obviously, the only possible answer is that public governance—public institutions—would represent an improvement.

This is a twofold claim: first, that private institutions can be improved and, second, that the improvement can be brought by governments. It is not clear, however, what “improvement” and “better institutions” mean, especially if the institutions of private governance have emerged to fit the needs of the people rather than being “one-size-fits-all” solutions. The lack of a clear definition or characterization of “improvement” probably explains why opponents of private order argue that the failure of private governance justifies the intervention of the state. But that defense of public governance is fallacious, partly because certain problems are not failures of private governance. During Bernard Madoff’s Ponzi scheme, for example, mechanisms of private governance existed that “easily could have prevented such fraud” but the investors themselves “*chose not to demand them.*”

Additionally, it is well known that governments can fail too. Arguing that governments may solve market failures implies that governments do not fail or fail less than markets. There's no way to prove that claim. The only way to know if public governance works better than private governance is to run experiments. But once public institutions have been added, it becomes impossible to remove them. And if public institutions can't be removed, it can't be shown that they represent an improvement over private governance. Furthermore, it can also be shown that adding public governance to institutions of private governance, or replacing private governance altogether, can deteriorate the situation. Rather than helping, the state often crowds out good governance. Indeed, here's the "best" governments can do: "crowd out rules that providers of private governance would have provided; or worse, government can impose rules well beyond the optimum and thereby drag down markets"; interfere with and consequently undermine what is provided by private governance; or coerce and "strong-arm" private entities. All in all, replacing private governance with public governance is usually a net loss.

Lastly, the limitations of public governance help explain why private governance is so pervasive. In fact, individuals do not create private governing institutions only when governments are absent. Private governance also exists when there are governments. Often, we do not realize that private mechanisms are at work, and many of our problems are solved without the intervention of governments. This is the "unseen beauty" of private governance. And this is the compelling story that Stringham tells in this book.

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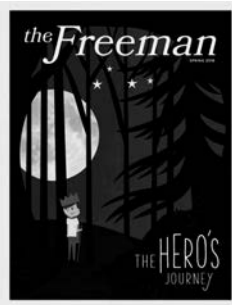
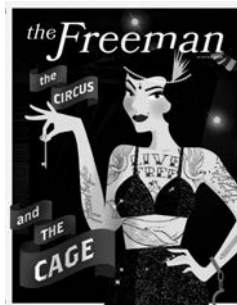
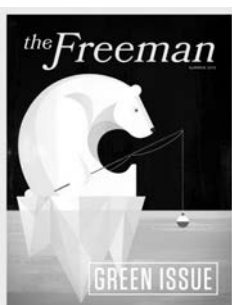
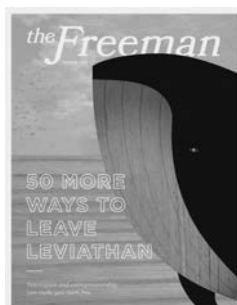
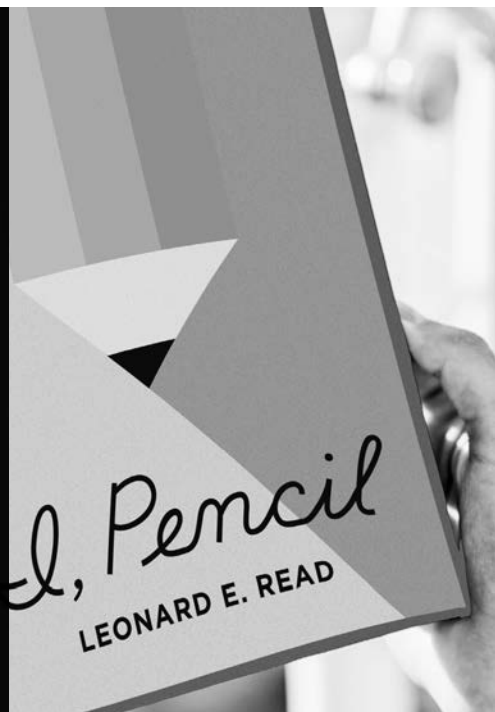
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Central Banks and Financial Turmoil

THURSDAY, NOVEMBER 17, 2016 • WASHINGTON, D.C.



The lack of any monetary rule to guide policy decisions has created great uncertainty and increased financial volatility. Zero or negative interest rates and quantitative easing have created severe distortions in asset markets by increasing risk-taking and politicizing credit allocation while failing to bring about robust economic growth. Attend Cato's Annual Monetary Conference to find out why.

FEATURED SPEAKERS

THOMAS J. SARGENT—*Nobel Laureate in Economics*

THOMAS M. HOENIG—*Vice Chairman, Federal Deposit Insurance Corporation*

HON. PHIL GRAMM—*Former Chairman, Senate Banking Committee*

H. ROBERT HELLER—*Former Member, Federal Reserve Board of Governors*

JAMES GRANT—*Editor, Grant's Interest Rate Observer*

J. CHRISTOPHER GIANCARLO—*Commissioner, Commodity Futures Trading Commission*

STEVE HANKE—*The Johns Hopkins University*

MARK SPITZNAGEL—*President & CEO, Universa Investments, LP*

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The Institute is named for Cato's Letters, libertarian pamphlets that were widely read in the American Colonies in the early 18th century and played a major role in laying the philosophical foundation for the American Revolution.

Despite the achievement of the nation's Founders, today virtually no aspect of life is free from government encroachment. A pervasive intolerance for individual rights is shown by government's arbitrary intrusions into private economic transactions and its disregard for civil liberties. And while freedom around the globe has notably increased in the past several decades, many countries have moved in the opposite direction, and most governments still do not respect or safeguard the wide range of civil and economic liberties.

To address those issues, the Cato Institute undertakes an extensive publications program on the complete spectrum of policy issues. Books, monographs, and shorter studies are commissioned to examine the federal budget, Social Security, regulation, military spending, international trade, and myriad other issues. Major policy conferences are held throughout the year, from which papers are published thrice yearly in the *Cato Journal*. The Institute also publishes the quarterly magazine *Regulation*.

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BASEL'S CENTRAL PLANNING

Basel III is intended to be a significant improvement over earlier rules. It does attempt to increase capital, but it does so using highly complex modeling tools that rely on a set of subjective, simplifying assumptions to align a firm's capital and risk profiles. This promises precision far beyond what can be achieved for a system as complex and varied as that of U.S. banking. It relies on central planners' determination of risks, which creates its own adverse incentives for banks making asset choices.

—**Thomas M. Hoenig**

“Back to Basics: A Better Alternative to Basel Capital Rules,”
speech delivered to the American Banker Regulatory Symposium,
Washington, D.C., September 14, 2012.



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