

THINKING AHEAD OF THE NEXT BIG CRASH

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In the aftermath of the unprecedented 2008 financial crisis, researchers of macroeconomics, finance, and political economy are showing renewed interest in the old but very significant question: Are central banks in large reserve currency democracies—in particular, the U.S. Federal Reserve—prone to creating asset bubbles and, if so, how is it possible to prevent the misuse of the banks' discretionary powers?

If one searched for guidance in the relevant literature, one would come across three main strands of thinking. The oldest stems from the views classical economists held and is expressed in the following sharp criticism that David Ricardo (1809: III, 21–22) addressed to the Bank of England for the way it managed the quantity of banknotes:

By lessening the value of the property of so many persons, and that in any degree they pleased, it appeared to me that the Bank might involve many thousands in ruin. I wished, therefore, to call the attention of the public to the very dangerous power with which that body was entrusted; but I did not apprehend, any more than your correspondent, the signature of “A Friend to Bank Notes,” that the issues of the Bank would involve us in the dangers of national bankruptcy.

Cato Journal, Vol. 35, No. 1 (Winter 2015). Copyright © Cato Institute. All rights reserved.

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Ricardo was concerned that the Bank of England violated the principle of price stability and, by doing so, risked ruining many people and driving Britain to bankruptcy. Notice though that Ricardo did not appeal to experts for devising mechanisms to tame the power of the central bank, as specialized economists are doing in our times. He appealed to the public—the ultimate source of power in democracies—by stressing that if central banks are left unchecked, they have too much power and may use it with devastating consequences for the citizens and their countries.

The 2008 events in the United States affirmed once again the time-honored truth of Ricardo's intuition that controlling the power of central banks is an issue of political economy rather than monetary engineering, and it is precisely this realization that motivates the present article.

The second strand of thinking emanates from the Austrian theory of the business cycles that Ludwig von Mises (1936) and Friedrich A. Hayek (1939) proposed.¹ For them, there was no doubt that ruinous bubbles are always ignited and propagated by central banks. The sequence of events they envisioned starts with an increase in the quantity of money issued by the central bank. This, in turn, lowers the nominal interest rate below the rate that would be set by the time preferences of savers. Responding to the lower interest rate, entrepreneurs create a boom by reallocating investment toward long-lived and away from short-lived capital goods, because the former become more profitable than the latter. But since the time preferences of savers remain unchanged, the demand for the output of long-lived assets grows gradually short of its supply, and eventually it becomes clear that capital has been misallocated. The greater the monetary expansion, the longer the boom and the more serious the misallocation of capital becomes. Thus, there comes a time when suddenly a recession, or depression, breaks open and leads to liquidation not only of the inefficient and unprofitable businesses but also of the speculative investments in all sorts of financial stocks, bonds, and real estate. This theory explains what happened in the United States in 2008 quite well. But before looking into this issue in detail, a reference to the third strand of thinking is necessary.

¹For a concise description of this theory, see French (2009: 111–14).

This can be inferred from the analytical approach suggested by Adam Posen (2011) and presumes that it is impossible to say whether central banks create bubbles or not, because there is the following fundamental problem of knowledge. For central banks to self-control against creating bubbles, they must be able to: (1) identify precisely the relationship between the quantity of money and current prices, as well as prices that would be warranted by the fundamentals in key sectors in the economy; (2) construct reliable indicators that will warn sufficiently ahead which misalignments between these two sets of prices are dangerous; and (3) develop instruments that will permit quick and effective interventions whenever dangerous misalignments grow beyond certain safe limits. However, such knowledge does not exist at present and is unlikely to exist in the future. For this reason, central banks ought to adopt a minimalist approach to the aims they pursue and the instruments they use to achieve them.²

From the preceding it follows that the responses vary from, “yes,” central banks do create dangerous asset bubbles, to “quite likely,” depending on how they manage monetary policy and allow for the regulation of the banking industry, to “we do not know.” As a result one might get confused or even discouraged by this lack of agreement among experts. But from a methodological standpoint, it offers a significant advantage because, by confronting the economic theories underlying the three responses with the facts, we may be able to come closer to a firm conclusion as to which is valid. Adopting this approach, I initially look at what happened in the United States in 2008 and employ the findings to assess the explanatory power of the three strands of thinking. From this assessment, it emerges that the Federal Open Market Committee (henceforth, “the Fed”) created, or at least cooperated, in the creation of a real estate bubble, which, upon bursting in 2008, led the United States into a deep recession, unsettled the international financial system, and pushed weaker countries like Greece to the brink of bankruptcy.

²However, central banks are moving in the opposite direction. The Bank of England, the oldest central bank in the Western World, recently decided to modify its century-old sole policy objective of controlling inflation by adopting a supplementary one. It now pursues flexible targets of inflation and unemployment. Given that the Federal Reserve and other central banks have pursued both policy objectives for many decades, the changes do not come as a surprise. As for the changes in central bank thinking, see the report of the Committee on International Economic Policy and Reform (2011).

Next, I discuss the ideas that have been proposed over the years to prevent central banks from misusing their power. Here I examine the literature on rules versus discretion in central banking, the influence it exercised in the conduct of Fed policy, and the present situation. The 2008 crash revealed that the institutional arrangements in place leave too much discretion to the Fed. Indeed, there are now high-level voices calling for the abolition of the Fed. Are such drastic proposals the solution? If not, how might institutional arrangements be overhauled to prevent the Fed from creating asset bubbles? If yes, what might be an alternative bubble neutral monetary regime? After addressing those questions, I conclude with a summary of the main findings and a few ideas for further research.

Determinants of the 2008 Crash

Before the 2008 collapse of the U.S. real estate market, there was another serious but relatively milder crisis in the 1980s, which emanated from the savings and loan (S&L) industry. In particular, toward the end of 1986, the rising rate of nonperforming loans of S&Ls was bankrupting the Federal Savings and Loan Insurance Corporation. The Reagan administration tried to secure the necessary funds to save it, but the Competitive Equality in Banking Act, which Congress passed in 1987, did not provide adequate funds and, even worse, compelled the Federal Home Loan Bank Board to continue pursuing regulatory forbearance, which implied allowing insolvent banking institutions to keep operating. The situation deteriorated rapidly. Losses in the S&L industry mounted and the collapse of the real estate market in the late 1980s exacerbated the problem.³

In 1991 Congress sought to take advantage of the lessons that had been learned from the S&L crisis by passing the Federal Deposit Insurance Corporation Improvement Act (FDICIA). Its provisions were designed to: (1) recapitalize the bank insurance fund by raising the ability of the Federal Deposit Insurance Corporation to borrow and to assess higher deposit insurance premiums until its reserves reached the level of 1.25 percent of insured deposits; (2) reform the deposit insurance and regulatory

³A concise account of the S&L crisis and how much it cost taxpayers is given in the report that the Congressional Budget Office (1992) submitted to Congress.

system so that taxpayer losses would be minimized; and (3) avoid regulatory forbearance and ensure quick action by regulators. FDICIA was in the right direction as it reduced the scope of deposit insurance, strengthened regulators to deal with too-big-to-fail banks, and compelled them to intervene and resolve insolvent banking institutions quickly and decisively. But, with regard to the housing policies, FDICIA left the status quo intact and this, in combination with many other institutional arrangements and bank practices, proved once again its undoing in the years that followed.

What Happened

Congress has subsidized home ownership for generations. After the S&L real estate debacle, Congress started in the 1990s to channel its support mainly through two government-sponsored enterprises (GSEs): Fannie Mae and Freddie Mac. In particular, these two “banks” extended low-interest loans to American households that did not meet the standard criteria for obtaining mortgages through the normal banking channels. To secure the necessary funds, Fannie and Freddie issued securities backed by the mortgages on the houses they financed and sold them to domestic and international banks, insurance companies, and other financial institutions. Based on the guarantees of the federal government to these two GSEs, the value of subprime securities reached \$4 trillion. Thus, when the rate of nonperforming housing loans increased unexpectedly in 2008, the value of houses and the mortgage-backed securities declined precipitously, causing widespread domestic and international turmoil.⁴

The crisis broke open with the bankruptcy of the giant financial firm Lehman Brothers and continued to worsen as major banks,

⁴Among experts there is almost unanimous agreement on the above sequence of events. For example, Ferguson (2008, 267–69) argues that the U.S. financial crisis of 2008 resulted from the breaking of the bubble in the housing market. In his view, the bubble was created by granting loans to poor people to purchase houses they could not afford in the framework of the “Dream Downpayment Act” that was signed into law in 2003 by President George W. Bush (see also Wallison 2010). However, looking backward, the beginning of the crisis was evident by February of 2007 when two major mortgage lenders announced losses tied to subprime lending. These were New Century Financial and HSBC Financial (the old Household Financial). The former was to fail, whereas the latter was bailed out by its parent.

insurance companies, and industrial concerns had to be saved with huge infusions of taxpayer money. Financial markets froze and banks stopped lending. Foreclosures of houses skyrocketed. Consumption decelerated as rising unemployment eroded personal incomes and consumers started to deleverage. Enterprises postponed investing as the uncertainty about the duration of the recession and the response of policymakers was heightened. In short, financial and real markets entered a recessionary spiral that gradually reversed after the Fed started to pour hundreds of billions of dollars into the economy in November 25, 2008, through consecutive rounds of quantitative easing. Since then economic growth has been restored but at a very slow pace, inflation remains subdued, and the double-digit rate of unemployment has declined to 6.2 percent. But the situation continues to be precarious because the economy is beset by many macroeconomic imbalances, especially those caused by the Fed's policy of keeping its target interest rate (the fed funds rate) close to zero.

The effects of the U.S. crash spread quickly to Europe, the emerging economies, and the rest of the world. In the European Union (EU), recession hit early and hard because many major European banks, which had invested in the toxic subprime securities of Fannie Mae and Freddie Mac, lost significant percentages of their capital and slowed lending. Without much delay, Greece succumbed to the crisis and its potential bankruptcy threatened the stability of the European financial system and the eclipse of the euro. Shortly afterward, the crisis worsened in Ireland, which had entered the crisis in early 2008 (predating the Greek crisis), and spread gradually to Portugal, Spain, Italy, and, much more recently, to Cyprus, revealing major fiscal and structural imbalances in all Mediterranean countries. Currently, recession shows signs of a turnaround, but unemployment continues to stay at historically high levels. Through this very trying five-year period the European Central Bank (ECB) kept a moderately aggressive posture. It intervened in situations that risked major unsettling of the euro, but, unlike the Fed, it refrained from reverting to the printing press to stimulate economic growth and reduce the high rate of unemployment. The ECB has kept its lending rate low but positive and, despite all predictions, the euro has retained much of its value relative to the U.S. dollar and the other reserve currencies.

As recession in the United States and the European Union took hold and slowed down imports, the effects of the crisis spread to the rest of the world. The ripples hit emerging countries—such as Brazil, Russia, India, China, and South Africa (the BRICS)—very hard as exports of consumption goods and natural resources slumped. From these events, it became evident that government and central bank policies in the large reserve currency countries can cause international spillovers whose costs may exceed the benefits governments and central banks attempt to secure locally through their policies. By implication, this evidence introduced in the analysis a new dimension, which is too significant to be ignored.⁵

Why It Happened

Bubbles in market-based economies pop up suddenly, but they gather strength over extended periods of time through the confluence of many usually unsuspected forces. The 2008 bursting of the real estate bubble in the United States was not an exception. It formed slowly over many years and became unsustainable due to numerous institutional arrangements and bank practices with near catastrophic consequences. The synopsis below centers on the ones identified by Charles Calomiris (2009) as more or less responsible for the formation and bursting of the latest real estate bubble.

Government Errors of Omission. In the banking industry a basic objective of regulation is to prevent banks from undertaking risks in excess of their capital. However, given that risks and returns are correlated positively, banks usually find ways to bypass the barriers imposed on them by the regulators in the form of capital requirements and to move to higher risk-return points. Calomiris (2009: 65–66) shows that commercial and investment banks practiced regulatory arbitrage by buying various forms of newly invented securities that were improperly priced for the risks they involved, and by booking the value of these securities off their balance sheets. In view of the widespread usage of these practices, many researchers have argued that the subprime crisis emanated from government “errors of omission” that allowed

⁵According to experts on the Committee on International Economic Policy and Reform (2011), these spillovers are now of first-order importance and call for rethinking the role of central banks.

banks to avoid regulatory discipline. Calomiris (2009: 66) agrees with them by noting:

There is no doubt that the financial innovations associated with securitization and repo finance were, at least in part, motivated by regulatory arbitrage. Furthermore, there is no doubt that if on-balance sheet commercial bank capital regulations had determined the amount of equity budgeted by all subprime mortgage originators, then the leverage ratios of the banking system would not have been as large, and the liquidity risk from repo funding would have been substantially less, both of which would have contributed to reducing the magnitude of the financial crisis.

But also he goes several steps further by offering solid evidence to the effect that the errors described below were far more significant in generating the huge risks and large losses that brought down the U.S. financial system.

Government Errors of Commission. According to Calomiris (2009: 68–71), the undertaking by managers in large financial institutions of excessive and improperly priced risks did not result from “random mass insanity.” Rather, it resulted from specific government and Fed policies that induced and encouraged their disastrous behavior. To substantiate his arguments with regard to government policies, he cites three groups of distortions:

Group 1

- Political pressures from Congress on the government-sponsored enterprises Fannie Mae and Freddie Mac to promote “affordable housing” by investing in high-risk subprime mortgages.
- Lending subsidies via the Federal Home Loan Bank System to its member institutions that promoted high mortgage leverage and risk.
- Subsidization of Federal Home Associations to high mortgage leverage and risk.
- Mortgage foreclosure arrangements that were developed in the late 1990s and early 2000s to reduce the costs to borrowers who failed to meet debt service requirements on their mortgages.
- Almost unbelievable, legislation in 2006 that encouraged ratings agencies to relax their standards for measuring risk in subprime securitizations.

Group 2

- Government restrictions limiting pension funds, mutual funds, insurance companies, and banks from holding anything but tiny stakes in any particular company. As a result, effective corporate governance within large financial institutions was rendered virtually impossible, thus giving a free hand to managers to pursue their own interests, not those of shareholders.

Group 3

- Regulators took at face value the assessment of risks by credit rating agencies and internal bank models.
- Even if regulators detected that “too-big-to-fail” financial institutions suffered large losses and that they had accumulated imprudently large risks, regulators would have found it difficult to credibly enforce effective discipline on large, complex banks.

In addition it should be noted that regulators and credit rating agencies are in an inferior position relative to the information financial institutions have regarding the quality of their assets and liabilities. By implication, the measurement of credit risks is beset inherently by major informational and methodological problems.

Federal Open Market Committee Errors. With respect to the Fed, Calomiris (2009: 67–68) argues that it erred on three counts: First, during 2002 to 2005, the Fed kept real short-term interest rates “substantially and persistently” below the levels that would have been consistent with fundamentals.⁶ Second, during the same period, the yield curve was flat, meaning that the Fed kept real long-term interest rates at historically low levels.⁷ Third, the available empirical evidence shows that, under the above conditions, banks charge less for bearing risk and even resort to alchemies that are possible “only because asset managers decide to purchase very risky assets and pretend that they are not very risky.”⁸

⁶For evidence to the effect that the policy interest rate in the United States (and other advanced economies) was far below what the Taylor Rule called for between 2002 and 2005, see Taylor (2007, 2011).

⁷Data and explanations as to why the yield curve was flat during the period in question are given in Backus and Wright (2007).

⁸Bekaert et al. (2010) and Maddaloni and Peydro (2010) find empirical evidence according to which loose monetary policy decreases risk aversion and increases risk-taking in bank lending, both in the United States and the eurozone.

From the preceding it follows that the formation and bursting of the 2008 real estate bubble in the United States was not exclusively the result of “animal spirits,” “crowed madness,” or “irrational exuberance.” It resulted also because of the specific policies that the government and the Fed pursued. Actually, on account of these policies, the surprise is not what happened. The surprise would have been if it had not happened.⁹ Therefore, to prevent the next big crash, which may bring down the international financial system, it is necessary to identify the primary culprit of the 2008 debacle.

Assessment

The government contributed to the formation of the real estate bubble in many ways. It induced Fannie Mae and Freddie Mac to promote “affordable housing” by investing in high-risk subprime mortgages. It encouraged financial institutions that specialize in housing loans to adopt lending policies of high mortgage leverage and risk, and it even granted incentives for the credit rating agencies to relax their standards for measuring risk in subprime securitizations. Viewed in the context of the experiences of the S&L crisis in the 1980s and the changes that globalization introduced in the world economy in the meantime, these policies in the 1990s and 2000s were at least imprudent. For, how else can such policies be characterized when their undesirable consequences in the United States and the world might have been prevented? Unfortunately, this incident is part and parcel of the crisis in representative democracy (Bitros and Karayiannis 2013). All indications are that it will be repeated, unless the Fed stays firm in the course of a prudent monetary policy, irrespective of the vicissitudes of the business cycles and the suasions, if not pressures, from politicians.¹⁰

⁹Contrary to central-bank-induced bubbles, those instigated by avarice, manias, animal spirits, crowd madness, and other similar traits of human nature will continue to emerge from time to time. But given that they pop up spontaneously, one can never distinguish in advance the good from the bad ones, and hence market discipline recommends that they should be left to run their course. Otherwise, as documented by French (2009) in the case of three famous episodes, quantity of money related central bank interventions risk making the situation worse.

¹⁰The House of Representatives introduced recently the Federal Reserve Accountability and Transparency Act of 2014 in the expectation that, by strengthening the political oversight in the conduct of monetary policies, the Fed might be restrained from using its discretionary powers in ways damaging to taxpayers. However, past experiences do not bode well with this expectation because the provisions of the act very likely will result in further politicization of the Fed (see Dom 2014).

Can the Fed be trusted in this regard under the present state of knowledge and institutional circumstances? The monetary policies leading to the 2008 crash speak for themselves. For, if the real long-term interest rates are kept by monetary authorities “substantially and persistently” at historically low levels over several years, even without knowledge of the Austrian business cycle theory, a first-year university student of economics would expect the prices of houses and other durable assets to go into an upward spiral and their stocks to accumulate into unsustainable levels. The empirical evidence leaves no doubt that this is actually what happened in the United States. Under the housing policies pursued by the government and the shortcomings of the macro- and micro-prudential provisions of bank regulation, which were fully known to the monetary authorities, the Fed ought to have pushed real long-term interest rates to much higher levels well before the housing bubble formed in the 2002–05 period. Hence, the Fed must be held primarily responsible for the formation and bursting of the 2008 real estate bubble. Therefore, given that the reasons that lay behind Ricardo’s criticism of the Bank of England 200 years ago and convincingly reaffirmed by Mises and Hayek in the first half of the 20th century continue to hold, central banks cannot be trusted to conduct bubble-neutral monetary policies, and indeed not even if for some period they abide by a bubble-neutral monetary rule.

While this realization may be innocuous for central banks in small and peripheral economies, it is very ominous in large reserve currency countries where central banks may create bubbles, the bursting of which transmits damaging spillovers all over the world. That is why the question of how to prevent central banks from this inherent tendency, particularly in large representative democracies like the United States, is as urgent as ever.¹¹

The Dashing of Hopes in Monetary Rules

Money in market-based economies is a great force. It facilitates transactions as no other means could do; it helps economic agents achieve superior efficiency in the intertemporal allocation of their

¹¹The urgency of this task is amply corroborated by the fact that such high-profile economists as McCallum (2010) are in the search for alternatives to the present Fed arrangements and recommend reforms along the lines that have been suggested by Greenfield and Yeager (1983).

resources; and it multiplies choices that enhance individual freedom. But just as water, fire, nuclear energy, and other powerful forces must be confined in order to yield their benefits to mankind, the quantity of money must be kept within bounds—because if it gets out of hand its destructive power is too well known.

To control the quantity of money, classical economists insisted that central banks ought to abide by two principles: (1) convertibility, which required currency in circulation to be convertible into metallic money on demand, and (2) central banks should limit the quantity of money so as to keep the general price level stable. However, as revealed by Ricardo's passage in the introduction and repeatedly affirmed by many crises over the decades, notwithstanding the devastating one in 1929, these principles left too much discretionary power to central bankers. In the 20th century this was certainly true under the gold exchange standard and much more so after 1972, when convertibility was abolished and all money became fiat paper money whose value is based solely on the trust of citizens in their government.

Thus, in view of the central banks' aberrations in the management of the quantity of money and the severe consequences that all too frequently resulted for the people, it was hardly surprising that some economists would come up with ideas and recommendations to curb their discretionary power. In the postwar period, the leading one among them was Milton Friedman (1948) who proposed 100 percent reserves along with the creation (withdrawal) by the Fed of amounts of money equal to the budget deficits (surpluses). Under this rule, banks would become S&Ls and the Fed would be limited to balancing the positive and negative cash flows of fiscal policies.¹² Later, Friedman (1959, 1962, 1968, 1969, and many other publications) emphasized that the monetary rule should be expressed as an increase of k percent in the money supply per annum. In all these writings he defended his proposed rule on political economy concerns. For example, in the study in which he laid the foundations of monetarism, Friedman (1969) offered three rationalizations. The first stems from the appointment of the chairman and the members of the Fed by politicians.

¹²Regarding Friedman's views on the issue of the viability of free banking there is some controversy. For example, Selgin (2008: 288) writes: "Although Friedman ultimately concluded that there is 'no reason currently to prohibit banks or other groups from issuing hand-to-hand currency' (Friedman and Schwartz 1986: 52), his opposition to official paper currency monopolies remained lukewarm."

Because of their associated incentives, Friedman suspected that central bankers might abrogate their duty to maintain a stable price level and instead use their privilege of seigniorage to favorably influence the economic and electoral cycles, something that he considered unacceptable and dangerous.¹³ His second rationale emanated from the impact of money in the real economy. From his researches over the years Friedman had come to realize that the effects of money in the short-run are so important that its management cannot be entrusted to the discretion of central bankers who are closely affiliated with politicians. Lastly, Friedman believed that if the Fed did follow the aforementioned rule, its effectiveness would be enhanced.

Beginning in the 1970s, Friedman's arguments in favor of rules in the conduct of monetary policy started to be reinforced by new theoretical and empirical studies. Research efforts highlighted the issues of time consistency in the policy regime and the influence that the reputation of the policymaker exercises in this regard. The seminal papers by Kydland and Prescott (1977), Calvo (1978) and Barro and Gordon (1983) showed that the effectiveness of economic policies based on fixed and known rules is systematically higher than policies based on discretion. In particular, they found that discretionary economic policies change the plans of individuals and increase uncertainty. Consequently, such policies are bound to be accompanied by adverse effects that are more serious than those of economic policies based on rules. Strongly reinforcing those results were the results from studies of the conduct of monetary policy using parameter estimates from economy-wide econometric models. In a series of papers, which begun with Lucas (1975) and culminated with Lucas (1980, 1981), it was established that parameter estimates from such models are not invariant with respect to changes in the policy instruments, particularly when people's expectations are important. In the extreme, the studies showed that if people have rational expectations about future economic conditions and markets are self-coordinating, discretionary monetary policies are ineffective. Only sudden or unexpected monetary policies that take people by surprise could have some effect. But as

¹³Empirical studies from many countries show that a policy of maintaining a stable price level in the long run is highly conducive to economic growth (see Masson 2008).

people learn from experience, they take precautionary measures and neutralize the effectiveness of interventions by monetary authorities.¹⁴

Considering the very strong empirical basis of the “Lucas critique,” the Fed switched to estimates from macroeconomic models based on rational expectations in the 1980s. However, as these did not perform any better than the old “wrong” models, the sentiment started slowly to shift toward monetary policies based on rules. This trend received very significant boosting from the transfer into economics of schemes of thought and analytical tools from the theory of chaos, which is widely used in the natural sciences (see Parker and Stacey 1994). According to this theory, policy authorities cannot fine-tune the structural features of the economy so as to push it toward equilibrium. The reason is that all short-term effects, either positive or negative, are followed by feedback effects and it is impossible to know in advance how these will affect the structural characteristics of the economy in the long run. To corroborate this assertion, let us see how a policy can be implemented, either as a reaction to something negative (e.g., rising unemployment) or as an initiative to prevent some undesirable development (e.g., emergence of unemployment). The policies in these two cases will have different feedback effects. In particular, policies to reduce unemployment may have much better results than policies to prevent the occurrence of unemployment, as happened in many economies following Keynesian policies in the 1970s. But even if unemployment is reduced and the economy reaches some sort of equilibrium, this will be temporary, because new disturbances stemming, for example, from innovative entrepreneurship will start a new round of adjustments that will most

¹⁴In retrospect it seems that the supporters of the Rational Expectations School ought to have stopped short of concluding that bubbles are not possible because all market participants act rationally and through learning and experience can foretell the future. Market participants may indeed act rationally and learn through experience. But they do so within a given environment of technological knowledge and institutions and cannot foretell the future because they cannot know in advance future changes in these environments. Hence, bubbles are still possible and monetary policies may have an effect, but as long as policy instruments influence the structure of the economy, central banks cannot fine-tune their interventions and they risk doing more harm than good.

likely pass undetected by the authorities to promptly revise employment policies. Conversely, if the authorities do not intervene, as was mostly the case before 1929, the economy would absorb the feedbacks from the disturbances moving along a path of continuous adaptation (as in the theory of chaos) and it will not remain in equilibrium.¹⁵ This is exactly the difference that explains why state interventions may give rise to more negative than positive results. In other words, such interventions are “second best” because they destroy the flexibility of the economy and they lack the self-coordinating feedback mechanisms for timely adaptation to disturbances.

The turn in the 1990s found investigations into the design of a monetary rule characterized by simplicity and good tracking properties in full swing. According to the study by Asso, Kahn, and Leeson (2007), after successive approximations, experts acceded to the monetary rule proposed by Taylor (1993), which is summarized as follows: The central bank’s policy should strive to equate the interest rate on short-term loanable funds with the sum obtained by adding the rate of inflation, plus half the difference between the nominal GDP from its trend, plus half the difference between the rate of inflation from its target rate, plus two. Research shows that from 1993 to 2001 the Fed behaved as if it followed this rule and much of its success was attributed to having done so.¹⁶ In turn, this success led to the view that the gap between classical and Keynesian monetary policies had been bridged and at last the discretionary powers of the Fed had been tamed. However, in the wake of the 2008 crash, many of the old concerns about the discretionary power of central banks

¹⁵If the reader suspects that this process is reminiscent of the one adopted by neo-Austrians to describe the process of continuous change in the economy, the reader is correct. In their view, in this process there is no equilibrium, and hence it is utterly futile to attempt to achieve one through policy initiatives. The only thing that transpires are the decisions of a number of people who, acting in a process of continuous trial and error, lead to beneficial or nonbeneficial results. Therefore, the essence of the economy is in the predisposition of people to act, whereas what is maximized by voluntary exchanges is the flexibility of the economy to receive and adapt to disturbances.

¹⁶The Fed has never revealed explicitly that during this period they were following some specific monetary rule. But according to Calomiris (2009: 68), Garrison (2009: 193–94), and other researchers, the data show that from 1993 to 2001 the Fed behaved as if it was following the Taylor Rule.

resurfaced with the acute urgency that Crook (2009) expressed in the *Financial Times*:

Friedman's incongruous naivety is at odds with his skeptic personality. In his own book *Capitalism and Freedom*, he says: "As matters now stand, while this rule [the k-percent rule] would drastically curtail the discretionary power of the monetary authorities, it would still leave an undesirable amount of discretion in the hands of Federal Reserve and Treasury authorities with respect to how to achieve the specified rate of growth in the money stock, debt management, banking supervision, and the like."

Both Friedman and Taylor seem to be aware of the fallibility of agency intervention into the supply of money; and yet, inexplicably, both seem in the end to take for granted that the agency in question will be willing to renounce discretion when push comes to shove.

By implication, recent events proved the hard way that such central bank notions as "commitment" and "credibility" are pious pronouncements that do not amount to much when "push comes to shove." In the face of this development, the urgent question is how to forestall the Fed from creating the next asset bubble, the crash of which may bring down the international monetary system.

Representative Democracy and Bubble-Neutral Monetary Regimes

The 16 world-renowned economists on the Committee on International Economic Policy and Reform do not deal with the above question directly in their 2011 report on "Rethinking Central Banking." However, their answer may be inferred from page 28, where among other qualifications they state: "Central Bank independence ultimately rests on political consensus—on the convergence of views among leading political interests that society's broader economic goals are best served by this independence." That is, the solution they propose is to render the Fed "independent" and do so by "political consensus." Does their proposal have any real value? It has not, for at least two fundamental reasons: (1) political parties in representative democracies are beset by moral hazard problems that make political consensus unlikely, and (2) democracy stands on the

principle of not granting independence to any person, collective entity, or institution—even if it were certain this would serve society’s broader goals.¹⁷

Constitutionally Backed Monetary Policy Rules

The previous analysis led to three findings. First, if the Fed had not deviated sharply from the Taylor Rule, which it appeared to be following up to 2001, no real estate bubble would have formed and the Fed would have spared the United States and the world from the ruinous consequences of the 2008 crash. Second, the Fed deviated from the policies that were recommended by the Taylor Rule when “push came to shove.” Third, it is not just the Fed that is prone to bubbles but also Congress, the president, and banking regulators. Consequently, the high-level voices that call now for the abolition of the Fed should be construed as a demand for the complete overhaul of the current monetary regime, not just piecemeal reforms that have been tried and failed. Thinking in this direction, prudence would recommend that before considering a new bold monetary regime without a central bank, some intermediate regimes may be easier to adopt politically and may save precious time.

One reform would be to pass a constitutional amendment that would require the Fed to conduct monetary policy by following a fixed rule known to economic agents in advance. Contrary to the

¹⁷Milton Friedman (1962: 50–51) explained convincingly why unqualified central bank independence is undesirable:

Any system which gives so much power and so much discretion to a few men that mistakes—excusable or not—can have such far-reaching effects is a bad system. It is a bad system to believers in freedom just because it gives a few men such power without any effective check by the body politic—this is the key political argument against an “independent” central bank. But it is a bad system even to those who set security higher than freedom. Mistakes, excusable or not, cannot be avoided in a system which disperses responsibility yet gives a few men great power, and which thereby makes important policy actions highly dependent on accidents of personality. This is the key technical argument against an “independent” bank. To paraphrase Clemenceau, money is much too serious a matter to be left to the Central Bankers.

This quotation is reminiscent of Ricardo’s warning. Moreover, aside from this conceptual stand on central bank independence, under prevailing arrangements it is extremely difficult to monitor the degree of independence that the central bank actually exercises (Cargill and O’Driscoll 2013).

standard formulation of Friedman's original idea, the proposed constitutional amendment would not set a specific monetary rule.¹⁸ Since economic conditions and central bank thinking change, the Fed should be able from time to time to change the monetary rule. But the degree of its discretion should be bounded by the prerequisites that the monetary rule is fixed and known, and that when the rule is changed, economic agents should be informed in advance. In this framework, the pressures from politicians on the Fed to change the monetary rule in order to serve certain social policies would be mitigated by the requirement that the change would have to be announced in advance. For then, economic agents would have the time to gauge the consequences and take measures to hedge against them.

Introducing a constitutional wedge of the above form would strengthen the resistance of central bankers to pressures by politicians to influence the economic and electoral cycles via seigniorage so as to enhance their chances of re-election. But the incentives of central bankers which give rise to the moral hazard problems would not be affected and this would be a major weakness.

Constitutional Upgrading of the Central Bank

In a monetary regime consistent with representative democracy the independence of the central bank might be conceived on grounds similar to those of the other three branches of government. For example, the judicial branch in the United States is independent from the legislative and the executive branches. But its independence is bounded by a system of checks and balances, which precludes members of the Supreme Court from exercising absolute power—that is, power irreverent to the objectives pursued by the other two branches of government, as expressed and mandated through the laws. Analogously, the executive and the legislative branches of government are independent but bounded to respect the decisions arrived at by the Supreme Court. Hence, it would constitute a major regime change if by a constitutional

¹⁸James M. Buchanan (2010: 257) also has argued for a constitutional amendment, noting that “monetary authority must be formally constitutionalized by amending the Constitution, a process that, in itself, would modify public attitudes.” He does not propose a specific rule.

amendment the Fed was upgraded into a fourth branch of government, bounded only by the checks and balances that would be spelled out in the amendment.¹⁹ In this framework, the independence of the Fed would be circumscribed by the law and honored as such by the other branches of government. Like the Supreme Court justices, the governors in the Fed would be appointed for life, so that all their incentives to capitalize on their knowledge and social prestige by jumping to private practice would be quashed. The differences among the political parties regarding the orientation of monetary policies would be reflected in the views held by those who are appointed as governors and in the influence they might exercise in the stance of the Fed as a collective entity. Finally, monetary policy would be driven by concerns to serve the longer-run interests of society, not the short-run interests of politicians and organized pressure groups.

In the heat of everyday debates about inflation, unemployment, debt sustainability, exchange rate valuation, and competitiveness, the position of the governors of the Fed would differ significantly from that of Supreme Court justices. Their decisions quite frequently would be dragged into bruising battles among the political parties. Many would read in them biases toward one group or another, and they would be accused of social insensitiveness. To reduce the adverse influences of such divisive debates on the credibility of monetary policy, the proposed upgrading of the Fed should be supplemented with a monetary policy rule that would make policy transparent and enable the Fed to stay firm in the course of bubble-neutral monetary policies. Moreover, in the interest of better coordination and enforcement, it may be advisable to bring micro- and macro-prudential policies and agencies under the authority of the Fed, if further research showed that the moral hazard problems of regulation would be reduced.

Buttressing the Fed in the above manner requires that it can control the supply of money or the policy interest rate. Otherwise, the only viable monetary regime is free banking.

¹⁹In the original U.S. Constitution, the Founding Fathers provided for money that would be based on a commodity standard like gold or silver. Hence, the acts of Congress that established the Fed in 1913 and abolished convertibility in 1972 might be considered unconstitutional. Unlike these major monetary regime changes, my proposal calls for a constitutional amendment.

Monetary Regime without a Central Bank

Under a rules-based monetary policy, the Fed may target either the quantity of money or its opportunity cost (i.e., the interest rate), but not both. Until 1982 it targeted mainly the quantity of money using M1, i.e. the narrowest and most precisely defined monetary aggregate. However, subsequently, monetary targeting waned and in 1993 it was abandoned altogether.²⁰ Benjamin Friedman (2006) attributes this change to the views Alan Greenspan expounded regarding the usefulness of rules in conducting monetary policy while he served as chairman of the Fed from 1987 to 2006. But in the light of Milton Friedman's (2006) assessment, the likelihood is that Greenspan's pronouncements had to do more with the blurring of the various monetary aggregates rather than his ideological inclinations. One ground for this conjecture is that all aggregates used in monitoring money growth rates lost gradually their sharpness and their usage in fine-tuning the changes in the money supply became superfluous, if not dangerous. According to monetary experts, this shift occurred because of the opening up of the country's borders due to globalization, the acceleration in offshoring, and the importance of the U.S. dollar as the preeminent international reserve currency, which implies that a large portion of the U.S. money supply circulates abroad. Another ground is the shift away from money and toward interest rate rules that took place in the literature and in professional opinion. Reflecting on its importance, it is perhaps more than a coincidence that the abandonment of money targeting was announced by the Fed in the same year as the publication of Taylor's (1993) highly influential paper. Finally, Greenspan's vows in favor of discretion proved innocuous because the policies that were adopted up to 2001 coincided closely with the ones that would have been recommended by the Taylor Rule. Hence, if the political economy arguments that were advanced previously to explain the errors of the Fed after 2001 are not convincing, the question is how else we might explain them so as to prevent their repetition.

²⁰Taylor (1993: 199, 204) thinks that in 1986 the Fed started following an interest rate rule consistent with the Taylor Rule.

An explanation is that the observed aberrations of the Fed reflected not errors but policy limitations. This would be plausible if the Taylor Rule was abandoned after 2001 because the Fed had lost control of the interest rate. Could this be the case? It could because, when Garrison (2009: 191) compared the evidence from the periods of Miller-Volker (1978–87) and Greenspan-Bernanke (1987–2014), he found that “just as the blurring of the money-supply definition virtually destroyed the viability of a money-supply rule, the federal government’s housing policy and attendant financial innovations during the Great Moderation have virtually destroyed the viability of interest-rate targeting.”²¹ If Garrison is right, the case for rules-based monetary policy hinges in principle and in practice on the necessity for the Fed to regain control over the money supply or the interest rate in a way that will be transparent to private agents. Is it possible? For, if it is not, the case in favor of a monetary regime without a central bank becomes the only viable alternative.

Unfortunately the vast majority of the relevant literature since 2008 has focused on piecemeal technical reforms to enhance the analytical and applied capabilities of central banks to control bubbles. Examples abound. Just to mention a few, De Grauwe (2008) presents arguments in favor of the view that central banks may be able to improve macroeconomic stability (i.e., lowering the variability of output and inflation) by targeting stock prices; Teo (2009) compares the welfare implications of exchange rate and interest rate targeting and finds that under certain conditions the former gives results which are superior to the latter; and Shiratsuka (2011) recommends that central banks incorporate into their models information from macroprudential analyses regarding changes in investors’ attitudes toward risk taking.

If one searched for research efforts allowing for the fallibilities of the central banks themselves, one would find very few. Among them are the studies by Calomiris (2009) and Garrison (2009). Calomiris (2009: 88–90) stands firm in the view that the Fed may regain control, provided that the government introduces the

²¹The Great Moderation lasted from the mid-1980s to the mid-2000s. Hence, it largely coincided with the period during which Greenspan served as chairman of the Fed.

extended list of reforms he proposes. Meanwhile, Garrison (2009: 198) holds that “once the current recession . . . is behind us, there can be no simple return to normalcy. Money-supply targeting is operationally nonviable, and interest-rate targeting will be seen (by the market and, it is hoped, by the Fed) as nonviable.” In his view, the only viable alternative is to replace the present monetary regime with one driven by choice among currencies, along the lines that Hayek (1976) and Selgin and White (1994) have suggested.²²

However, neither of these two courses of action looks feasible in the foreseeable future. From a political standpoint, some of the reforms proposed by Calomiris (2009) may go through fairly easily, whereas those that relate to the too-big-to-fail banks may remain on the to-do list for a long time. The prospects for their adoption are extremely slim, given the moral hazard problems inherent in the current system. As for the scrapping of the Federal Reserve System, this would require either an upheaval in the political system or a crash of such monumental proportions that the citizens themselves would take the control in their hands and impose a decentralized market-based system of currency provision and circulation.²³ Which event may happen first is impossible to say. But given the inertia of representative democracy in issuing blank checks to be paid by future generations, the latter possibility cannot be precluded.

²²Garrison’s conjecture that interest-rate targeting has become operationally nonviable can be reinforced by drawing on Phelps (2010) and Dowd, Hutchinson, and Kerr (2012). According to these authors, the crisis erupted because the managers and shareholders of big financial institutions failed to perceive the nature of the risks that were associated with their decisions. Consequently, they failed to hedge against them appropriately. They did not realize that the risks emanated from Knightian uncertainty, which is incalculable and renders the course of future events unknown. In the words of Phelps (2010: 137):

One of the towering lessons of the present crisis is that it has made vivid to us what has long been obvious to all but the most doctrinaire academicians. Radical uncertainty, known as “Knightian uncertainty,” is always present in some respects and is always a significant consideration—at least, in a modern economy or even a traditional economy operating in a modern global economy. . . . An important consequence of this flare-up of uncertainty is that the central bank does not know the level to which to set the “policy rate of interest” and thus the direction in which to start moving the policy rate.

²³In either event, what particular form such a decentralized system might take may be glimpsed from the fast growing literature on free banking, an excellent summary of which can be found in White (2011).

Conclusion

The 2008 crash in the United States showed that, while a rules-based monetary policy may be necessary to prevent central banks from contributing to the creation and bursting of assets bubbles, it may not be sufficient. The reason is that, under the present institutional circumstances, the relations of central banks to politicians, regulators, and organized pressure groups are beset by serious moral hazard problems, which induce them to deviate from the monetary rule when push comes to shove. This problem is generic to all countries organized as representative democracies with more or less free-market economies, but it applies especially in the case of the Fed because the U.S. dollar, as the world's leading reserve currency, circulates widely abroad. As recent events made obvious, its fallibilities may bring down the whole international financial system. That is why the question of how to forestall another and perhaps bigger crash in the future is most urgent.

Assuming that the Fed can control the quantity of money or the policy interest rate, thinking ahead of events would recommend upgrading the Fed's constitutional status to a fourth power of government, much like the judicial branch, and passing a constitutional amendment that binds the Fed by a firm monetary rule. By expanding its independence within the established framework of checks and balances, appointing its governors for life to stem the moral hazard problems, and following a monetary policy rule, the Fed should be able to stay the course in pursuing a bubble-neutral monetary policy. It should be noted, however, that there is a fair amount of literature that questions the ability of the Fed to control its target variables. If that is the case, and it is confirmed by further research, soon a dilemma will arise as to the appropriate reforms.

In view of this outlook, some experts hold that the Fed can reestablish control over its target variables provided the government introduces a wide range of reforms, while other experts argue that the Fed has lost control and there is no going back to money or interest-rate targeting. Acting along the first approach would require a far-reaching reform of the existing monetary system. Proceeding along the second approach would require scrapping the Federal Reserve System and replacing it with a market-based

monetary regime. In either case, the reforms are going to be highly unsettling in the short run. But since under the present institutional circumstances another bigger crash can be conceived as unavoidable, we should not let it happen.

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