Thinking ahead of the next big Crash

Bitros, George C.

Athens University of Economics and Business

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By

George C. Bitros
Professor of Economics, Emeritus
Athens University of Economics and Business

Abstract

The real estate bubble which burst in 2008 in the USA was not exclusively the result of "animal spirits", "crowed madness" or "irrational exuberance". It resulted primarily because of the specific policies that the government, the Federal Reserve Board, and the regulators pursued. Actually, on account of these policies, the surprise is not what happened. The surprise would have been if it had not happened. The reason for this assessment is that such central bank notions as "commitment" and "credibility" are pious pronouncements that do not amount to much when the push by organised interest groups comes to shove by politicians. In the face of this development, the urgent question is how to forestall the Federal Reserve Board from creating or coalescing to the creation of the next asset bubble, the crash of which may bring down the international monetary system. According to this paper, the solutions range from introducing an extended list of far-reaching institutional reforms to the monetary system in place, to upgrading the constitutional status of the Federal Reserve Board by transforming it into a fourth power of government, much like the judicial, to replacing it by a market based system of money provision and circulation. Which of these solutions is appropriate depends crucially on whether the Federal Reserve Board has control or not of either the money supply or the policy interest rate. But what is utterly inappropriate is not to do anything and wait until the next big crash.

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1. Introduction

In the aftermath of the unprecedented economic crisis that broke open in the USA in 2008 and threatened the collapse of the international financial system, researchers of macroeconomics, finance and political economy are showing renewed interest in the old but very significant question: Are central banks prone to creating asset bubbles and, if so, how is it possible to safeguard against misusing of their discretionary power?[1] 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 wonderfully expressed in the following sharp criticism that Ricardo (1809, III, 21-2) 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 on 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."

Apparently the Bank of England violated at the time the principle of price stability and by doing so it risked ruining many people and driving Britain to bankruptcy. Notice though that Ricardo did not appeal to the 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, i.e. the ultimate source of power in democracies, by stressing that, if central banks are left unchecked, they have too much power and they may use it with devastating consequences for the citizens and their countries. Dashing aside the hopes of experts, the 2008 events in the USA affirmed once again the time honoured truth of Ricardo's intuition that controlling the power of central banks is an issue in political economy, rather than in monetary engineering, and it is precisely this realization that motivates the present paper.

The second strand of thinking emanates from the so-called Austrian theory of the business cycles that Mises (1936) and Hayek (1939) proposed.[2] For them, there was no doubt that ruinous bubbles are always ignited and propagated to eruption by central banks. The sequence of events they envisioned starts with an increase in the quantity of money 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 towards 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.

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1 Due to globalization and the so-called "butterfly effect theory" it is not unlikely that a crash in a small non-reserve currency country may swell into a worldwide crash. However, the analysis in this paper relates to central banks in large reserve currency democracies and takes as particular reference the case of the Federal Reserve Board in the USA.

2 For a compact but admirably concise description of this theory, see French (2009, 111-114).

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. Does this theory explain what happened in the USA in 2008? It fits the facts quite well. But before looking into this issue in detail, reference to the third strand of thinking is in order.

This can be inferred from the analytical approach suggested by 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: (a) identify precisely the relationship of the quantity of money to the current prices and the prices that would be warranted by the fundamentals in key sectors in the economy; (b) construct reliable indicators that will warn sufficiently ahead which misalignments between these two sets of prices are dangerous, and (c) 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 it is rather unlikely that it will become available any time soon, if ever. For this reason, moving on the safe side, central banks ought to adopt a minimalist approach to the aims they pursue and the instruments they use to achieve them.[3]

From the preceding it follows that the responses vary from "yes" central banks 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 from which the three responses derive with the facts, we may be able to come closer to a firm conclusion as to which is valid. Adopting this plan, Section 1 looks at what happened in the USA in 2008 and employs the findings to assess the explanatory power of the above three strands of thinking. From this assessment it emerges that the Federal Reserve Board (henceforth the Fed) created or at least coalesced to the creation of a real estate bubble, which upon bursting in 2008 led the USA to a deep recession, unsettled gravely the international financial system, and pushed weaker countries like Greece to the brink of bankruptcy. Section 3 summarizes the ideas that have been proposed over the years to prevent central banks from misusing their power. As the readers would expect, this section centres on the available literature on rules versus discretion in central banking, the influence it exercised in the conduct of monetary policy in the

[3] However, if anything else, central banking and central bank thinking are moving in the opposite direction. An example regarding central banking is the Bank of England, the oldest central bank in the Western World, which appointed recently a new governor, Mr Mark Carney, by attracting him away from the Bank of Canada. It decided to modify its century old sole policy objective of controlling inflation by adopting a supplementary one. In particular, henceforth it will pursue flexible targets of inflation and unemployment. Clearly, given that the Federal Reserve Board and the Bank of Canada have pursued both policy objectives for many decades, the changes in the Bank of England 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).

USA, and where we stand at present. Section 4 addresses the following questions: The 2008 crash revealed that the institutional arrangements in place leave too much discretion in the Fed; So much so that there are now high-level voices calling for the abolition of the Federal Reserve System. 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? Section 5 concludes with a summary of the main findings and a few ideas for further research, whereas the root causes of why under the present circumstances another big crash cannot be precluded are explained in the Appendix.

2. Determinants of the 2008 crash

Before the 2008 collapse of the real estate market in the USA, there took place another serious but relatively milder crisis in the 1980s, which emanated from the Savings and loans (S&L) industry. In particular, toward the end of 1986, the rising rate of non-performing loans of Savings and Loans Banks was bankrupting the Federal Savings and Loans Insurance Corporation (FSLIC). The Reagan administration tried to secure the necessary funds to save it, but the Competitive Equality in Banking Act (CEBA) that the Congress passed in 1987 did not provide adequate funds and even worst it compelled the Federal Home Loan Bank Board (FHLBB) to continue pursuing regulatory forbearance, which implied allowing insolvent banking institutions to keep operating. The situation deteriorated rapidly. Losses in the savings and loan industry mounted and the collapse of the real estate market in the late 1980s exacerbated the problem greatly.[4]

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 achieve objectives, like: (a) recapitalize the bank insurance fund by raising the ability of the Federal Deposit Insurance Corporation (FDIC) to borrow and to assess higher deposit insurance premiums until its reserves reached the level of 1.25% of insured deposits; (b) reform the deposit insurance and regulatory system so that taxpayer losses would be minimized; (c) avoid regulatory forbearance and ensure quick action by regulators, etc. The bill was in the right direction as it reduced the scope of deposit insurance in several ways, 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 the bill 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.

The rest of this section is devoted to three tasks. These are: to describe what happened; to explain why it happened according to expert analyses of the forces that contributed to the 2008 real estate crash; and to assess the role that the Fed played in this regard.

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[4] A concise account of what happened, why it happened and how much it cost to the taxpayers is given in the report that the Congressional Budget Office (1992) submitted to Congress.

2.1 What happened

For reasons that need not concern us here, US Governments have subsidized home ownership for generations. After the S&L real estate debacle, the government started in the 1990s to channel its supports mainly through two state sponsored banks, i.e. Fannie Mae and Freddie Mac. In particular, these two banks extended huge low interest loans to American households, which did not meet the standard banking criteria for the repayment of loans, to buy houses. To secure the necessary funds, these two banks 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. Just to understand the staggering amount of the funds that were involved, it suffices to note that based on the guarantees of the government to these two banks the value of subprime securities reached 4 trillion dollars. So, when the rate of non-performing housing loans increased unexpectedly in 2008, the value of houses and hence of the mortgage-backed securities declined precipitously, causing widespread domestic and international turmoil.[5]

In the USA the crisis broke open with the bankruptcy of the giant financial firm Lehman Brothers and continued to worsen as major banks, 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 the policy makers was heightened. In short, financial and real markets entered a recessionary spiral, which lasted until the Fed started in 2010 to pour hundreds of billions of dollars into the economy through consecutive programs of so-called “Quantitative Easing”. Since then some timid of economic growth has been restored, inflation remains subdued, and the double digit rate of unemployment has declined to7.5%. But the situation continues to be precarious because the economy is beset by many macroeconomic imbalances, fundamental among which is the policy of the Fed to keep short term interest rates close to zero.[6]

Channelled through the global financial markets, this time the effects of the crash in the USA spread quickly to Europe, the emerging economies and the rest of the world. In the European Union (EU) recession hit early and hard because: (a) 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 down lending; (b) 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

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[5] Among experts there is almost unanimous agreement in the above sequence of events. For example, Ferguson (2008, 267-9) argues that the financial crisis of 2008 in the USA started 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.

[6] What may happen when the central bank tappers off “Quantitative Easing” and interest rates start climbing is anybody’s’ guess. For a possible scenario of the events that may unfold, see ……

Euro; (c) shortly afterwards the crisis spread gradually to Ireland, Portugal, Spain, Italy and much more recently to Cyprus, revealing major fiscal and structural imbalances in all Mediterranean countries; (d) currently recession shows signs of a turnaround but unemployment continues to stay at historically high levels, etc. Through this very trying five year period the European Central Bank 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 presses for printing Euros to stimulate economic growth and reduce the high rate of unemployment. Thus, on account of this policy, the central bank lending rate has been kept low but positive and, despite all predictions to the opposite, the Euro has retained much of its value relative to the US dollar and the other reserve currencies.

As recession in the USA and the EU took hold and slowed down imports, the effects of the crisis spread all over to the rest of the world. Due to their tighter integration in the world economy, the ripples hit harder emerging countries like those comprising the block of BRICS (Brazil, Russia, China and South Africa), the economic growth of which depends highly on exports of consumption goods and natural resources. From these events it emerged that government and central bank policies in large reserve currency countries may be accompanied by international spillovers whose cost 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.[7]

2.2 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 unsuspecting forces. The 2008 bursting of the real estate bubble in the USA was not an exception. It formed slowly over many years and swelled to eruption due to numerous institutional arrangements and bank practices with near catastrophic consequences. The synopsis below centres on the ones that Calomiris (2009) has identified 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

[7] According to the experts in the Committee on International Economic Policy and Reform (2011), these spillovers are now of first order importance and differentiate between traditional and contemporary central bank thinking.

the subprime crisis emanated from government "errors of omission" which allowed banks to avoid regulatory discipline. Calomiris (2009, 66) agrees with them by stressing that:

> "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, which induced and encouraged their disastrous behaviour. To substantiate his arguments with regard to government policies, he cites three groups of distortions as follows:

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, and
- 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 free hand to their managements to pursue investments in the interests not of the shareholders but of their own.

Group 3:

- Regulators took at face value the assessment of risks by credit rating agencies and internal bank models, and
- 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 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 Reserve Board errors

With respect to the Fed, Calomiris (2009, 67-68) argues that it erred on three counts: First, because during the period 2002-2005 it kept real short term interest rates "substantially and persistently" below the levels that would be consistent with fundamentals.[8] Second, because in the same period the yield curve was flat, which implied that real long term interest rates were kept at historically low levels;[9] and third, because 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".[10]

From the preceding it follows that the formation and bursting of the 2008 real estate bubble in the USA 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.[11] 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.

2.3 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 mort-

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[8] For evidence to the effect that the policy interest rate in the US (and other advanced economies) was far below the Taylor-rule between 2002 and 2005, see for example Taylor (2007, 2011).

[9] Data and explanations as to why the yield curve was flat during the period in question are given in the paper by Backus, Wright (2007).

[10] Bekaert 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 US and in Euro area countries.

[11] Contrary to central bank induced bubbles, those instigated by avarice, manias, animal spirits, crowed 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.

gages. It encouraged financial institutions that specialise in housing loans to adopt lending policies of high mortgage leverage and risk; and even it 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 impudent. For, how else can such policies be characterized when their undesirable consequences in the USA and in the world might have been prevented? Unfortunately this incident is part and parcel of the crisis in representative democracy to the analysis of which Bitros, Karayiannis (2013) devoted a whole book and 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.

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 USA. 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 the real long term interest rates to much higher levels well before the housing bubble formed in the 2002-2005 period. For their reasons they did not do so and hence the Fed must be held primarily responsible for the formation and bursting of 2008 real estate bubble. Therefore, given that the reasons that lay behind Ricardo's criticism of the Bank of England two hundred 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 USA, is as urgent as ever.

3. The dashing of hopes in the 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 resources; and not the least, it multiplies choices that enhance individual freedoms. But as water, fire, nuclear energy and the other powerful forces of nature must be confined in order to yield their bene-

fits to mankind; in the same manner the quantity of banknotes must be kept within bounds, because if it gets out of hand its destructive power is too well known.

To control the quantity of banknotes, classical economists insisted that central banks ought to abide by two principles. The first of them was convertibility, which required the banknotes in circulation to be convertible by banks into metallic money on demand. As for the second principle, this dictated the central bank issues banknotes to such an appropriate quantity 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 in the central bank. In the 20th century this was certainly true under the "gold standard", i.e. when the metallic money was gold and much more so after 1972, when convertibility was abolished and all money became paper money, i.e. money whose value is based solely on the trust of citizens to 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 post war period, leading among them was Friedman (1948) who proposed initially the introduction of the rule "100% reserves", in conjunction with the creation (withdrawal) by the Fed of amounts of money equal to the budget deficits (surpluses). Under this rule, if it were applied, banks would become straight savings and loans institutions, whereas the Fed would be limited to balancing the positive and negative cash flows of fiscal policies. Later Friedman changed his position, stating in Friedman (1959), and repeating in Friedman (1962, 1968, 1969) and many other publications, that the monetary rule should be expressed as an increase of k% in the money supply per annum. In all these writings he defended his proposed rule on political economy concerns. For example, in Friedman (1969), which is recognized as the study in which he laid the foundations of the so-called monetarism, he offered three rationalizations. The first stems from the appointment of the chairman and the members of the Fed by politicians. Because of their associated incentives, Friedman suspected that central bankers might abrogate their duty to maintain the general price level stable[12] and instead use their privilege of seigniorage to favourably influence the economic and electoral cycles, something that he considered unacceptable and dangerous. 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 their 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 independence from the political system would be enhanced.

Beginning in the 1970s Friedman's arguments in favour of rules in the conduct of monetary policy

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[12] Empirical studies from many countries show that a policy which maintains the value of money stable in the long run is highly conducive to economic growth. For a survey of this literature, see Masson (2008).

started to be reinforced by high power theoretical and empirical results in three fronts. Research efforts in the first front highlighted the issues of time consistency in the policy regime and the influence that the reputation of the policy maker exercises in this regard. The seminal papers by Kydland and Prescott (1977), Calvo (1978) and Barro, Cordon (1983) found solid evidence which showed that the effectiveness of economic policies that are based on fixed and known rules is systematically higher than the effectiveness of economic policies that are based on discretion. The reasons to which they attributed this finding is that, since discretionary economic policies change the plans of individuals and increase their uncertainty, such policies are bound to be accompanied by adverse effects that are more serious than those of economic policies based on rules. Strongly reinforcing were also the results from inquiries into the possibility of using parameter estimates from economy wide econometric models in the conduct of monetary policies. In a series of papers, which begun with Lucas (1975) and culminated with Lucas (1980, 1981), he established that in general parameter estimates from such models are not invariant with respect to changes in the policy instruments, particularly when peoples' expectations are important. In the extreme, he showed that if people have rational expectations about future economic conditions, since markets are self-coordinating, discretionary monetary policies are ineffective. Or, stated in another way, only sudden or unexpected monetary policies, i.e. policies which would take people by "surprise", could have some effect; but as people learn from experience, they take precautionary measures and neutralise the effectiveness of interventions by monetary authorities.[13]

Considering the very strong empirical basis of the so-called "Lucas critique", in the 1980s the Fed switched to estimates from rational expectations macroeconomic models. However, as these did not perform any better than the old "wrong" models, the sentiment started slowly to shift towards 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.[14] According to this theory, policy authorities cannot fine tune the structural features of the economy so as to push it towards equilibrium. The reason is that all short term effects, i.e. whether positive or negative, are followed by feedback effects which are impossible to know in advance how they will affect the structural characteristics of the economy in the long run. To corroborate this assertion, let us see how can a policy 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

13 In 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 they 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.

14 How can the theory of chaos be used in the fields of management and economics is explained in considerable detail by Parker and Stacey (1994).

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 certain equilibrium, this will be temporary, because new disturbances stemming for example from innovative entrepreneurship will start a new round of adjustments that most likely will pass undetected by the authorities to revise promptly 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 which 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 the1990s 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, 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 of 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 2002 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 resurfaced with the acute urgency that Crook (2009) expressed in the Financial Times on 3/4/2009:

> "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."

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[15] If 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 non-beneficial results. Therefore, the essence of the economy is in the predisposition of people to act, whereas what is maximised by voluntary exchanges is the flexibility of the economy to receive and adapt to disturbances.

[16] The Fed has never revealed explicitly that during this period they were following some specific monetary rule. But according to Calomiris (2009, 68), Garrison (2009, 193-194) and other researchers, the data show that the Fed from 1993 to 2003 behaved as if they were following "Taylor's Rule".

> 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 or coalescing to the creation of the next asset bubble, the crash of which may bring down the international monetary system. To this I turn below.

4. Representative democracy and bubble-neutral monetary regimes

The sixteen world renowned economists in 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 that:

> "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". Has their proposal any real value? It has not for at least two fundamental reasons: First, because the political parties in representative democracy are beset by the moral hazard problems explained in the Appendix, which make political consensus utterly unlikely; and second, because democracy stands on the principle of not granting independence to anybody, person, collective entity or institution, even if it were 100% certain that this would serve best "society's broader goals". Hence, given that the time until the next big crash is ticking and the field is open to new ideas, the following thoughts may be worthy of consideration.

4.1 Constitutionally backed monetary policy rules

The analysis in the previous sections led to three findings. Namely that: (a) if the Fed had not deviated sharply from the "Taylor rule" that it appeared to be following up to 2001, no real estate bubble would have formed and the central bank would have spared the USA and the world from the ruinous consequences of the 2008 crash; (b) the Fed deviated from the policies that were recommended by the said rule when "push came to shove", and (c) it is not just the Fed which is prone to bubbles, but the current structure of politics, including the Congress, the Presidency, and the regulators of the banking industry. Consequently, the high level voices that call now for the abolition of the Federal Reserve System should be construed as a demand for complete overhaul of the monetary regime in place, instead of piecemeal reforms which have been tried and failed. Thinking along this direction, prudence would recommend that before considering a new bold monetary regime without a central bank, some less unset-

tling intermediate regimes may be easier to adopt politically and may save precious time.

Such a monetary regime would be one in which the Fed would be instructed through a *constitutional* amendment to conduct monetary policies by following a fixed rule known to economic agents in advance. Contrary to the standard formulation of Friedman's original idea, the proposed constitutional amendment would not set a specific monetary rule. 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: (a) the monetary rule is fixed and known, and (b) 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 explained the Appendix would not be affected and this would be a major weakness. The focus below is on how to confront it.

4.2 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 in the USA is independent from the legislative and the executive branches. But its independence is bounded by a system of "checks-and-balances", which precludes, say, the members of the Supreme Court from exercising absolute power, i.e. 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 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. Apparently, in this framework: (a) the independence of the Fed would be circumscribed by the law and hence it would be honoured as such by the other branches of government; (b) 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; (c) 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 that they might exercise in the stance of the Fed as a collective entity, and (d) monetary policy would be driven by concerns to serve the longer interests of society and not the short run ones pursued by politicians and/or organized pressure groups.

In the heat of everyday debates about inflation, unemployment, debt sustainability, exchange rate valuation, competiveness, etc., 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 towards this or the other group of people. They would be accused of social insensitiveness, etc. 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 as described in the previous sub-section. Because then, monetary policies will be characterized by transparency and the Fed will be able 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.

Yet, buttressing the Fed in the above manner would enable it to conduct bubble neutral monetary policies if and only if from a technical point of view it has firm control over the supply of money or the policy interest rate. Otherwise, the only viable monetary regime is free money. Let us see why.

4.3 Monetary regime without a central bank

Under a rule-based monetary policy, the Fed may target at each point in time either the quantity of money or its opportunity cost, i.e. the interest rate, but not both. Until 1986 it targeted mainly the quantity of money using M1, i.e. the narrowest and most precisely defined monetary aggregate. Subsequently, targeting money growth rates waned and in 1993 it was abandoned altogether. Benjamin Friedman (2006) attributes this change to the views Allan Greenspan[17] expounded regarding the usefulness of rules in conducting monetary policy. 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 US Dollar as the preeminent international reserve currency, which implies that a large portion of the US money supply circulates abroad. Another ground is the shift away from money and towards 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 with the publication of Taylor's (1993) highly influential paper. Last, but not least, is the realization that Greenspan's vows in favour of discretion proved innocuous, because the policies that were adopted up to 2001 coincided closely with the ones that would have been recommended by "Taylor's rule".

[17] Alan Greenspan served as chairman of the Fed from 1987 to 2006.

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.

An explanation is that the observed aberrations of the Fed reflected not errors but policy limitations. This would be plausible if the "Taylor's rule" was abandoned after 2001 because the Fed had lost control also 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 (1978-2987) and Greenspan-Bernake (1987-present), 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."[18]

Therefore, 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 favour 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 favour 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 towards 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 extended list of reforms that he proposes. On the other hand, Garrison (2009), after affirming in page 198 that:

> "Once the current recession—of whatever depth and length—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,"

he goes on to conclude that the only viable alternative is to replace the Federal Reserve System with one driven by choice among currencies, along the lines that Hayek (1976) and Selgin, White (1994)

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[18] Note that the period of Great Moderation lasted from the mid-1980s to the mid-2000s. Hence, approximately, it coincided with the period during which Greenspan served as chairman of the Fed.

suggested not long ago.

However, none 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 easy, whereas those that relate to the too-big-to-fail banks may remain on the to-do-list for long, since the prospects for their adoption are extremely slim, given the moral hazard problems involved and explained in the Appendix. As for the scrapping of the Federal Reserve System, this would require either an upheaval in the political system or a crash of so monumental proportions that the citizens themselves would take the control in their hands and impose a decentralised market-based system of currency provision and circulation. Which event may happen first is impossible to say. But given the inertia of democracy in issuing blank checks to be paid by future generations, the latter possibility cannot be precluded.

5. Summary of findings and issues for further research

The 2008 crash in the USA 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 organised 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 organised as representative democracies with more or less free market economies. But it applies especially in the case of the Fed in the USA, the currency of which circulates widely abroad and serves as one of the main reserve currencies for the central banks of other countries; For, 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: (a) upgrading its constitutional status to a fourth power of government, much like the judicial; and (b) requiring trough a constitutional amendment that it follows a monetary rule. By expanding its independence within the established framework of checks-and-balances in place, appointing its governors for life, which would take care of the moral hazard problems discussed in the Appendix, and following a monetary policy rule, the Fed should be able to stay the course in a bubble neutral monetary policy. It should be noted though that there is a fair amount of literature which questions now the ability of the Fed to control in an effective and transparent manner either of these target variables. If this 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 the view that the Fed can re-establish control over the said target variables, provided that the government introduces a wide range of specific reforms, whereas according to some other experts, 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 overhaul of the monetary system in place. On the other hand, proceeding along the second approach would require scrapping the Federal Reserve System and replacing it with a market-based one. 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.

Appendix

Lethal cocktail: Seigniorage and representative democracy

From Ferguson (2008), Calomiris (2009) and many other researchers we have now a very good grasp of the forces that led to the formation and bursting in 2008 of the real estate bubble in the USA. In general these forces emanated from institutional arrangements that were put in place by democratically elected governments and policies that were enacted by appointees of the said governments. Hence, the key to understanding why these institutional arrangements and policies failed is to recognise that: (a) the relationship between voter-taxpayers, on the one hand, and politicians and their appointees, on the other, creates a moral hazard problem, which occurs because the latter as representatives (agents) have incentives that differ from those of the former (the principals) and so they act in their own interest rather than in the interest of the voter-taxpayers whom they represent,[19] and (b) the representatives (agents) have established and retain monopoly power over the issuance of money, i.e. they have exclusive rights to seigniorage. The objective in this appendix is to show how these two arrangements combine into an awful cocktail for democracy and economy.

To see first how the disparity in incentives between voter-taxpayers as principals and politicians, central bankers and regulators as agents contributed to the 2008 collapse of the real estate market in the USA, consider what is expected from them in the form of tasks and what they did . Politicians would be expected to discourage lending by banks on substandard banking criteria, to expedite the resolution of insolvent institutions by imposing strict limits on regulatory forbearance, and to demand from credit rating companies the application of the highest possible standards in the measurement of bank risks. However, because of the principal-agent problem, politicians did the opposite. They pressured Fannie Mae and Freddie Mac to grant loans to people they could not repay them. They loosened the limits for regulatory forbearance; and not the least, they encouraged credit rating companies to relax their standards in the measurement of risks, etc. One important incentive that explains the disparate behaviour of politicians is their desire to get re-elected, since by facilitating poor people to buy their own houses, politicians raise their appeal among the lower income classes and get voted by them into office. Another incentive is purely financial. Political campaigns everywhere, but especially in the USA, cost a lot of money and politicians must raise substantial contributions to finance them. In turn, this situation may provide lobbyists and other campaign contributors with the opportunity to influence politicians to act against the public interest. A third incentive is that by the time the adverse consequences of their policies emerge, the politicians who pushed for them most likely won't be around to face the public's rage or the voters will have forgotten whom to vote out in the election. Moreover, it should be noted that, since as a rule the benefits from the enacted policies accrue to people who are different from those who pay for their cost, politicians have the option to choose that balance which may serve their own personal interests. Unfortunately, as substantiated by Bitros, Karayiannis (2013), these fallibilities are inherent in representative democracy and not very much can be done to contain their undesirable side effects.

Turning to central bankers, tax-payers would expect them to remain committed to the stability of the general price level in the long run and to stay firm on this course regardless of the suasions and pressures they may face from politicians and other organised professional classes to manipulate the money supply so as to serve their short term interests. Instead, what central bankers did was everything that eroded their credibility. For example, to go along with the objectives of the 2003 "Dream Downpayment Act", they kept the long term interest rate at historically low levels. While it was clear that the managers of the "too-big-to-fail banks" in conjunction with the two government sponsored banks, Fannie Mae and Freddie Mac, were amassing huge profits by pushing on a worldwide scale trillions of dollars of high risk mortgage backed securities, they looked the other way as if nothing was happening (see Greenspan (2008: 507)) ; and not the least, they practiced opportunism or learning-by-doing doing, in a period when firmness in monetary policy was of paramount importance. One incentive to behave in this way is to enhance one's employability in prestigious and high paying gov-

[19] The difference in the incentives that creates the problem of moral hazard is also known as the "Principal-agent problem".

ernment jobs. Note in particular that, when in opposition political parties consult usually for free with a great range of professionals on whom they call to fill the positions that open in the narrow and the wider public sectors upon taking over from the previous government. Therefore, the odds are that the appointees may show greater allegiance to the interests of politicians who appoint them, rather than to those of the general public. Another incentive is that once appointed to high government office, the door opens wide for obtaining lucrative appointments and contracts in the private sector. Examples of such transfers from the government to the private sector and vice versa abound in everyday news, so there is no need to dwell further on this point. Last, but not least, it is the fear of falling from the grace of the politicians who appoint them that may induce central bankers to give in to pressures for instituting particular monetary arrangements against their best judgement.

Regulators are not in any less compromising position than the central bankers. From them taxpayers expect to lower the costs they absorb when asset bubbles burst. In doing so, regulators ought for example to set tight restrictions on holding assets that are too risky, to impose high capital requirements, to safeguard the competitive structure of the banking industry, and to avoid regulatory forbearance. However, regulators have strong incentives to do the opposite. As documented once again by the real estate bubble that burst in 2008, regulators failed to reign on the "too-big-to-fail" banks, they slept throughout the years that Fannie Mae and Freddie Mac deluged domestic and international markets with exceedingly risky mortgage backed securities, and indulged in wide forbearance by allowing insolvent banks to operate for very long. One incentive that explains these practices is the desire of regulators to avoid blame for poor performance. For example, by pursuing regulatory forbearance, regulators can hide the problem of an insolvent bank and hope that the situation will improve. Another incentive is that they want to protect their careers by giving in to pressures from the people who most influence their careers. These people are not the taxpayers but the politicians who try to keep regulators from imposing tough regulations on institutions that are major campaign contributors. Moreover, as we saw above in the text, both Congress and the presidential administration promoted banking legislation that made it easier for banks to engage in risk-taking activities.

Unfortunately, as argued by Bitros, Karayiannis (2013), in representative democracies the structure of the political system gives rise inherently to two dimensions of moral hazard. These are that politicians on the one hand and their appointees on the other develop strong incentives to act in their own interests rather than in the interests of citizens at large. For many appointments in prestigious and high paying government jobs, the losses in welfare that may accrue to citizens because of this misalignment of incentives may be limited. But this is not the case with the appointments of central bankers and regulators. Because the combination of their moral hazard in handling the monopoly of government over the issuance of banknotes with the moral hazard of those who appoint them creates a cocktail of forces with potentially catastrophic losses of welfare for the citizens. Therefore, the need for arrangements to prevent this awful potential from happening in the future is as urgent as ever.

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