The primary purpose of this book is to critically reexamine the profession’s understanding of asset price bubbles in light of the major financial crisis of 2007–2009. It is well known that asset bubbles have occurred in the past, with the October 1929 stock market crash as perhaps the most demonstrative example. However, the remarkable positive performance of the U.S. economy from 1945 to 2006, and, in particular, during the Great Moderation of 1984 to 2006, suggested to the economics profession and monetary policymakers that asset bubbles could be effectively ignored with little or no real adverse economic impact. For example, the October 1987 one-day U.S. stock market crash of 20% did not seriously impact the real economy. Likewise, the bursting of the Internet bubble in 2000, when the NASDAQ dropped by 70% from its level of about 4,500 in early 2000 to 1,500 in April 2002, contributed only to an eight-month mild recession from March to November, 2011.

In contrast to these mild real economic consequences of asset bubbles bursting, both the Great Crash of 1929, which was followed by a severe economic depression, and the crash of the Japanese stock and real estate markets that led to the so-called “lost decade” in Japan remind us that the severity of the spillover from asset bubbles bursting should not be underestimated.

The recent financial crisis of 2007–2009, which was followed by the “Great Recession” lasting 18 months from December 2007 to June 2009, has triggered a debate about what we really know about asset price bubbles and how (and whether) they can be managed in the public interest.

There are various components to this debate. For example, the efficient markets hypothesis views extraordinary movements in asset prices as a consequence of significant changes in information about fundamentals. This approach to asset pricing downplays the need to consider asset bubbles as a source of financial instability. It is
also inconsistent with Greenspan’s famous “irrational exuberance” explanation that implied that asset prices may be driven by something other than fundamentals.

Additionally, there is limited consensus as to what causes asset bubbles, and why some deflate on their own while others continue to grow. There is also disagreement on what triggers a bubble to burst, and whether we can accurately assess the associated risks and anticipate their potential damage to the real economy. Further, there is disagreement as to whether there are specific policy measures that central banks can and should take to respond to asset bubbles to limit their potential damage.

The Greenspan-Bernanke Federal Reserve followed an asymmetric approach to bubble management. This approach advocated no monetary policy action during the bubble formation and growth, but a speedy response in the form of a liquidity injection and reduction in market rates when the bubble burst to reduce the potential loss of output and employment. This approach was supported by considerable academic research and appeared to work well until September 2008, when the financial system came close to a meltdown.

The significant adverse consequences of the recent financial crisis have intensified theoretical modeling, empirical testing, and policy debates on asset price bubbles and their potentially considerable economic impact. In particular, the financial crisis of 2007–2009 has prompted Fed chairman Bernanke to encourage an “open mind” in reconsidering the role of central banks in addressing asset prices as well as the optimal regulatory framework for anchoring prudential policies (Bernanke 2010). Other Fed officials have also reconsidered appropriate policy responses to asset price bubbles in light of the recent crisis (Kohn 2008, Yellen 2009, and Dudley 2010). Malliaris (2012) comprehensively reexamines the views of central bankers on bubble management both prior to and after the crisis.

As a result, there has been a wide-spread reevaluation of appropriate policy tools for addressing asset bubbles. Central banks have a rather limited toolset to implement their mandates of price stability and, in the United States, maximum growth. What tools other than macrostability policies are available to address asset bubble formation? Is there a potential role for macroprudential regulation? Finally, to the extent that the development of asset bubbles go beyond rationality, behavioral finance may be critical in our understanding of booms and busts.

This volume is the result of the conference “New Perspectives on Asset Price Bubbles: Theory, Evidence and Policy” organized by the editors of this book at Loyola University Chicago on April 8, 2011, and funded by the Chicago Mercantile Group Foundation. The core purpose of the conference was to contrast traditional and newer views on appropriate policy responses to asset bubbles in light of lessons learned from the recent financial crisis. Five previously published classic papers that were thought to represent the orthodox thinking about asset bubbles prior to the crisis were selected by the editors after consultation with numerous colleagues. As the basis for the conference, five distinguished economists were then invited to write original papers evaluating the accuracy of the analysis in the
“classic” papers, challenging the orthodox thinking, and providing new insights. This book includes both the five classic papers and the five papers presented at the conference evaluating the original contributions. Additionally, other leading scholars were asked to contribute their analyses on issues related to bubbles. Lastly, conference keynote lectures by Benjamin Friedman and William Poole round out the volume.

This overview essay by the editors highlights the main strands of inquiry on asset bubbles in both the previously published classic papers and the responding new papers. We present the fundamental results reached in these papers, along with a fresh evaluation of their relevance in guiding policymakers during the global financial crisis. This overview leads to new lessons to be learned from the recent crisis about the significance of asset bubbles and appropriate policy responses. It also emphasizes our current inadequacies in certain areas for determining optimal policy.

The Allen and Gorton (1993) paper raises the critical question: Are stock prices determined by fundamentals or can “bubbles” exist? They carefully develop a detailed analytical model and show that the existence of bubbles is consistent with rational behavior. This “existence” result was not fully appreciated at the time either by the profession or by central bankers, who often doubted the existence of bubbles. Barlevy (2012) reviews the contribution of Allen and Gorton, discusses the state of theoretical models of asset price bubbles, and evaluates the lessons learned from the financial crisis. He expresses some frustration with the gap between the theoretical work on asset bubbles and the apparent change in views coming out of the financial crisis about the appropriate policy response. Little in the theoretical literature supports the contention that intervention is appropriate. He concludes that theoretical models of bubbles have not adequately addressed welfare considerations and thus are unable to offer convincing analytical guidance to central banks as to whether an economy is better off with, or without, a bubble. Ideally, an asset price bubble model can be developed to address such welfare considerations.

Among the various types of asset bubbles, the stock market and housing bubbles are historically of major interest to central banks. Other bubbles such as exchange rate, oil, gold, and other commodities are of lesser concern. Ex ante, it is difficult to predict if a stock market or housing bubble will keep growing until it abruptly bursts on its own with a loud bang, or will quietly deflate on its own without much impact. While it is too early to fully evaluate the costs to the U.S. and global real economies of the bursting of the dual bubbles in housing and stock markets in recent years crisis, the evidence from Japan is not encouraging. Hoshi and Kashyap (2000) discuss in detail the Japanese banking crisis that prevailed for most of the decade of the 1990s, following the abrupt crashing of both the Japanese stock and real estate markets. Filardo (2012) agrees with the Hoshi and Kashyap assessment of the Japanese crisis, but argues that being aware of the causes of past crises was not sufficient to protect the Asia-Pacific economies from
the more recent crisis. He underscores the broader perspective that the global financial system needs to be strengthened and that the spillovers of the international financial crisis to Asia and the Pacific presented daunting policy challenges for the central bankers in the region. Among other groups, the G20, the Financial Stability Board, the Basel Committee on Bank Supervision, and the Committee on the Global Financial System are still addressing these challenges.

In their seminal paper, Bernanke and Gertler (1999) expand the financial accelerator model by incorporating exogenous bubbles in asset prices. An asset bubble affects real activity via the wealth effect on consumption and firms’ financial decisions via appreciations of assets on the balance sheet. Stochastic simulations lead the authors to conclude that central banks should view price stability and financial stability as highly complementary and central bank policies should not respond to changes in asset prices, except insofar as they signal changes in expected inflation. This paper offered the intellectual foundation for the asymmetric approach to asset bubbles, also called the “Jackson Hole Consensus.” Kuttner (2012) offers a detailed assessment of the Bernanke and Gertler results in view of the financial crisis. He presents two, now uncontroversial, lessons from the financial crisis that challenge the Gertler-Bernanke results. First, macroeconomic stability and price stability in particular do not guarantee financial stability. Second, because the bursting of an asset bubble can wreak havoc on the real macroeconomy, the central bank’s financial stability mandate should not be taken lightly. At issue, obviously, are how the bubble is identified and what policy tools are used to address it: interest rate policy or macroprudential supervision and regulation?

Borio (2003) addresses the financial instability that results from an asset bubble bursting. He argues that in order to improve the safeguards against financial instability, it is important to move beyond microprudential regulation and account for the cross-firm interconnections and externalities created when financial institutions encounter problems. One needs to address the potential spillover effects that can adversely affect general market conditions, other financial institutions, and ultimately the real sector of the economy. He stresses the need to strengthen the macroprudential framework for financial supervision and regulation. Acharya and Naqvi (2012) examine how the banking sector may contribute to the formation of asset price bubbles when there is access to abundant liquidity. Excess liquidity encourages lenders to be overaggressive and to underprice risk in hopes that revenues from loan growth will more than offset any losses from the aggressive behavior. Thus asset bubbles are more likely to be formed as a result of the excess liquidity. They conclude that central banks and macroprudential supervision and regulations should lean against liquidity.

Scheinkman and Xiong (2003) observe that episodes of asset price bubbles are characterized by high trading volume and high price volatility. They develop a behavioral-based model of asset price bubbles, assuming short-sale constraints. An asset buyer may be willing to pay a price above fundamentals because, in addition to the asset the buyer acquires, she also obtains an option to sell the asset to
other traders when they have more optimistic beliefs. De Bondt (2012) reviews the Scheinkman and Xiong paper and offers a detailed overview of behavioral finance from the perspective of asset bubbles. He challenges the idea that pure fundamentals and rationality drive decision-making and pricing. He emphasizes the need to more fully incorporate behavioral issues into decision-making models.

The two keynote speakers present their views about asset price bubbles and the recent financial crisis. Friedman (2012) observes that the recent financial crisis clearly challenges the assumption of rationality employed in many of the analyses and the efficiency of the financial system to optimally allocate capital. Poole (2012) stresses that the large literature on asset bubbles has not incorporated the results from control theory from the 1960s and the rational expectations literature from the 1970s and proceeds to outline a new synthesis.

Christiano, Ilut, Motto, and Rostagno (2010) use historical data and model simulations for 18 boom periods in the United States to challenge some of the traditional views on appropriate monetary policy. They show that if inflation is low during stock market bubbles, an interest rate rule that narrowly targets inflation actually destabilizes asset markets and the macroeconomy. The authors note that economic historians have documented that in every stock market bubble in the last 200 years in the United States, excluding the Civil War and World Wars I and II, asset price bubbles occurred during years of low inflation. A logical consequence of this empirical fact is that by setting interest rates to target low inflation, the central bank is actually setting real rates below the natural rate, thus fueling a bubble. Therefore one can make the argument that a central bank that follows an asymmetric response to asset bubbles actually encourages an asset price bubble in its growing phase. This challenges the conventional wisdom of the Jackson Hole Consensus. To reduce volatility in asset prices and the real economy, Christiano, Ilut, Motto, and Rostagno propose including credit growth in the interest rate targeting rule.

Geanakoplos (2012) describes his ideas on leverage as a major cause of bubbles. He gives four reasons why the most recent leverage cycle was worse than previous cycles. First, leverage reached levels never seen before in previous cycles. Second, there was a double leverage cycle: in securities on the repo market and in real estate in the mortgage market. These cycles fed off each other and as security prices fell, leverage collapsed along with the housing mortgage market. Third, credit default swaps (CDSs) played an enormous role in the recent crisis, and had been absent from previous cycles. CDSs helped optimists leverage at the end of the boom, but most importantly they provided an opportunity for pessimists to leverage, and so made the crash come much earlier than it would have without them. Lastly, because leverage got so high and prices fell so far, a much larger number of people and businesses ended up underwater than in earlier cycles.

Malliaris (2012) reexamines the main arguments of whether or not monetary policy should respond to asset bubbles. The question of how the central bank should respond to an asset bubble can be reformulated in two ways. First, how does the
central bank respond while an asset bubble is growing, and second, how does it respond after the bubble bursts? There has been strong agreement among economists that a central bank should respond to the bursting of a bubble by aggressively decreasing the Fed funds rate to minimize the adverse impact of financial instability on the real economy. However, there is no clear answer to the question of how the central bank should respond to an asset bubble before it bursts. If there is evidence that the asset price bubble is contributing to goods inflation, then there is general agreement that the central bank should respond. But what if prices remain stable? We noted earlier that Bernanke and Gertler argued that the central bank should not respond to the bubble prior to its bursting, while others believe that it should try to target the bubble or at least lean against it to avoid, or at least minimize, future financial instability. Malliaris concludes that the high costs associated with the 2007–2009 financial crisis undermined the Bernanke and Gertler, or Jackson Hole Consensus, position. The new central bank policy paradigm seems to have shifted toward “leaning against bubbles” and giving due consideration to alternative tools other than interest rate policy tools.

However, even if one accepts Malliaris’ new paradigm, the authors suggest that there is a significant gap between being open to evaluating alternative policy tools to address bubbles, and deciding on the most appropriate policy response. This is probably the area in which our knowledge is most lacking. The gap exists on the theory front in justifying such intervention (e.g., see Barlevy 2012), as well as the empirical front in estimating policy effectiveness. Moreover, neither policymakers nor supervisory staffs have shown an enhanced ability to identify something as an asset bubble that may eventually burst. Similarly, it is not obvious that policymakers would know how best to deflate or manage a bubble even if they were successful at identifying it. These are the two most daunting challenges for financial researchers: determining effective means to identify asset bubbles and determining the most effective and appropriate response to manage the bubble once it is identified.

Finally, Chirinko and Schaller (2012) emphasize the distortive impact of asset bubbles on efficient capital allocation, irrespective of whether they burst, by studying whether bubbles lead to overinvestment. A fundamental function of the stock market is the efficient allocation of capital to its most productive uses. The efficiency of the stock market was initially called into question by events in the late 1990s, when some observers believed that stock market overvaluation—that is, a bubble—led to overinvestment. Both the standard and overinvestment stories involve discount rates and, to differentiate between the two stories, the authors examine the discount rates used by firms in making their investment decisions. Their empirical work finds support for both hypotheses, consistent with a misallocation of resources during bubbles.

In conclusion, the major financial crisis of 2007–2009 appears to have been caused by several interrelated factors. In this volume, we investigate one such factor: the bursting of the housing bubble. But the papers included cannot do full
justice to the subject. Nor are they the final word on the subject. We hope that the reader will find numerous useful ideas and suggestions in these papers for further research. Below is an initial list to excite the reader:

- How can theoretical models of asset pricing be modified to address welfare implications for bursting or not bursting bubbles?
- How can central banks ex ante judge the potential mopping-up costs of not addressing asset bubbles?
- Why did the Great Moderation bring macroeconomic stability, but not financial stability?
- Under what conditions does the financial system allocate capital efficiently? Do asset bubbles distort the allocative efficiency of the financial system? How significant is the distortion?
- How can behavioral finance enrich asset price bubble modeling?
- Does inflation targeting distort the natural rate of interest and destabilize asset markets?
- How have recent financial innovations impacted leverage and liquidity?
- Now that domestic and global financial stabilities have been elevated as macroeconomic goals, how can prudential supervision and regulation best achieve these goals?
- With the policy action proposed by the Jackson Hole Consensus having been shown to be extremely costly, what additional information is needed to allow policymakers to know ex ante that leaning against a bubble is optimal policy?

Notes

1. The views expressed are those of the authors and may not reflect those of the Federal Reserve Bank of Chicago or the Federal Reserve System.

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New Perspectives on Asset Price Bubbles


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