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Bubbles and Monetary Policy: To Burst or not to Burst?

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The question of whether monetary policy should target asset prices remains a contentious issue. Prior to the 2007/08 financial crisis, central banks opted for a wait-and-see approach, remaining passive during the build-up of asset price bubbles but actively seeking to stabilize prices and output after they burst. The macroeconomic and financial turbulence that followed the subprime housing bubble has led to a renewed debate concerning monetary policy's role in maintaining financial stability. This Round-Up provides a brief overview of this topic.

The Jackson Hole Consensus

Until the 2007/08 financial crisis, central bankers usually found comfort in the fact that monetary policy was widely regarded to be a relatively bland affair. Mervyn King (2007), the former governor of the Bank of England, even went so far as to say that central bankers *aspired* to be boring. The Jackson Hole Consensus, according to which monetary policy should focus on manipulating short-term interest rates in order to stabilize consumer prices, garnered widespread support and provided the key principles underlying the conduct of monetary policy (Bean, 2010).

In many countries, the policy objective of price stability was operationalized by the adoption of an explicit inflation target. The inflation targeting regime was widely lauded by central bankers and academic economists alike, and many consider it to be partly responsible for the low volatility of prices and output observed during the Great Moderation (Goodfriend, 2007). The onset of the financial crisis, however, made it painfully clear that price stability does not always imply financial stability. This reignited a long-lasting debate about whether central banks should be more pro-active in mitigating asset price bubbles. Below, we summarize the main elements of this debate.

A "duck test" for asset price bubbles?

The first difficulty facing central bankers trying to prevent the growth of unsustainable asset price bubbles is precisely identifying what type of price movements constitute bubbles in the first place. It is certainly one of the key factors impeding a straightforward inclusion of asset prices into central banks' reaction function. The American poet James Whitcomb Riley once famously opined that if something "walks like a duck, swims like a duck and quacks like a duck, [then] I call that a duck." Unfortunately, unambiguously identifying financial market bubbles is not so straightforward. Notwithstanding many fascinating and colorful episodes in financial history, such as the Dutch tulip mania of the 1630s or the South Sea bubble

of 1720, empirically testing *in real time* whether observed price movements constitute a bubble remains a difficult, if not impossible task. According to Garber (2000), empirical asset pricing studies may in fact do nothing more than put a name – bubble – to describe something they cannot explain.

Theoretically speaking, economists consider bubbles to consist of significant and persistent deviations of an asset's price from its "fundamental value." The empirical implications of this definition are considerably more limited since this fundamental value cannot generally be observed. Testing for the presence of asset bubbles is always necessarily based on a specific theoretical model that seeks to explain movements in fundamentals. For example, an often used model to analyze asset prices is the "discounted dividend model," according to which the fundamental value of an asset equals the present discounted value of future dividends. This begs the question whether an econometrician can test for the existence of a bubble using this model by simply relating observable dividend streams to asset prices? Flood and Hodrick (1990) argue that the answer to this question is *no*! Statistical tests conjecturing the absence of bubbles cannot distinguish whether the rejection of the null hypothesis is due to the presence of a bubble or to a failure to correctly specify the factors determining the net present value of future dividends. Put differently, testing for the presence of a bubble is tantamount to testing whether the assumed model describing assets' fundamentals is indeed a correct description of the world. This critique is not limited to the discounted dividend model, but applies to any model-based test of asset price bubbles.

Greenspan's Put: Pros and Cons

As the foregoing discussion shows, central banks hoping to stamp out unsustainable asset price bubbles would face serious identification problems that would introduce a discretionary and highly subjective element into the monetary policy decision-making process. Moreover, defenders of the traditional inflation targeting regime like Adam Posen (2006) go further by arguing that, *even if bubbles could be precisely identified*, the macroeconomic costs from "pricking" them may be too high. Since taming exuberant or irrational market expectations and limiting bubble-fuelling credit expansions would require significant increases in interest rates, this would lead to large costs in terms of reduced output and employment. These costs, according to Gerlach (2010), are likely to be prohibitively high compared to the potential gains in terms of increased financial stability. When faced with the problem of emerging asset price bubbles, central bankers have traditionally abided by an unwritten rule referred to as *Greenspan's put,* according to which monetary policy should neither target asset prices nor try to "prick" nascent bubbles, but rather "mop up" any damaged caused by their collapse. The justification for this passive approach to financial bubbles, summarized by Bernanke and Gertler (1999), is that monetary policy should not respond to changes in asset prices that do not signal changes in expected inflation:

> *Trying to stabilize asset prices* per se *is problematic for a variety of reasons, not the least of which is that it is nearly impossible to know for sure whether a given change in asset values results from fundamental factors, non-fundamental factors, or both. By focusing on the inflationary or deflationary pressures generated by asset price movements, a central bank effectively responds to the toxic side effects of asset booms and busts without getting into the business of deciding what is fundamental and what is not.*

Many defenders of the Jackson Hole Consensus, like Lars Svensson (2012, 2014), argue that managing asset bubbles should instead be the responsibility of macro-prudential regulations rather than conventional monetary policy. Regardless of whether these regulators are integrated within the central bank or operate from within a separate institution, the important point is that interest rate policy is too blunt a tool to be in the business of pricking bubbles. In essence, such arguments are nothing more than a direct application of the well-known *Tinbergen principle*, according to which it is always best to assign one policy goal to each available policy instrument.

While there exists by now a broad consensus regarding the importance of macro-prudential rules, Jeremy Stein (2013) argues that these may sometimes be insufficient to quell asset price bubbles, especially when they originate from sectors that have historically fallen outside the control of regulators (e.g. the shadow banking industry). Thus, from this perspective, monetary policy reactions to asset price development may indeed sometimes be necessary since, contrary to tailored regulations, interest rate policy "gets in all the cracks." Another argument against a policy of `cleaning up later' is made by Otmar Issing (2006) who questions the inherent asymmetry to Greenspan's put, asking why monetary policy should respond to bursting bubbles but not preemptively respond *before* they burst. He argues that by effectively committing to loosen monetary policy in the aftermath of an asset bubble in the hope of keeping the economy afloat, central banks may in fact feed credit expansions and promote the emergence of bubbles in the first place.

A New Mandate for the Central Bank?

Financial instability is of course not limited to asset price bubbles. It is also determined by other factors such as leverage and the maturity mismatch on financial firms' balance sheets. Explicitly including financial stability into the mandate of central banks poses some notable problems, however. As Bundesbank President Jens Weidmann (2014) has recently pointed out, the vagueness surrounding the notion of financial stability (compared to price stability) means that explicitly assigning the responsibility for its maintenance to central banks may weaken their transparency and credibility. Similarly, Smets (2012) argues that even if a proper financial stability objective can be identified, its inclusion into the central bank's objective function may give rise to a time inconsistency problem: *ex post* the central bank may rely on inflation to repair balance sheets and inflate excessive debt, while *ex ante* the central bank may be pressured not to lean too aggressively against bubbles.

This conventional view of monetary policy's mandate does, however, have its fair share of prominent detractors. For example, Claudio Borio et al. (2003) claim that by ignoring financial stability concerns and focusing exclusively on price stability during tranquil times may hamper central banks' ability to guarantee price stability in times of financial distress. Relatedly, Michael Woodford (2011) argues that the trade-off between price and financial stability is conceptually very similar to the classic trade-off between inflation and output. Once appropriate financial stability objectives have been identified (e.g. preventing excess leverage), nothing should prevent them from being incorporated into the flexible inflation targeting regime currently used by many central banks around the world.

The Rough Road Towards a New Consensus

The severe economic contraction that followed the bursting of the US housing bubble suggests that some of the optimism surrounding the Jackson Hole consensus during the Great Moderation may have been misplaced. In a recent speech, Federal Reserve Board Chairwoman Janet Yellen (2014) said that even though the ultimate objective of monetary policy should remain price stability, the crisis has taught central bankers that they should be more aware of financial sector developments when deciding on monetary policy. Also, economists have progressively come to realize that the workhorse New Keynesian model that central banks use to inform their policy decisions is noticeably incomplete, precisely because it fails to explicitly model the actions and behavior of financial intermediaries. This theoretical shortcoming has led to a flurry of new research emphasizing the importance of banking and finance, and how they relate to monetary policy; e.g. Brunnermeier and Sannikov (2012), Diamond and Rajan (2012), Gertler and Karadi (2011) or Curdia and Woodford (2010). However, these new models have thus far failed to provide easily quantifiable and unambiguous indicators that can be targeted by policymakers. While it seems unlikely that the mandate of central banks will be drastically changed in the near future, monetary policy's role in maintaining financial stability will doubtlessly remain one of the most important and contentious issues facing central bankers in the years to come.

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