Proceedings of the 8th International Conference on Economic Management and Green Development
DOI: 10.54254/2754-1169/129/2024.18360

Analysis of Formation Mechanism of Financial Asset Bubbles, Their Impact and Their Governance: A Literature Review

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Abstract: Financial asset bubbles are an important factor affecting the stability of the macroeconomy and the financial system, and their formation and bursting can seriously impact the macroeconomy and the financial system. If the response is inappropriate, it is elementary to brew a large-scale financial crisis, and the resulting imbalance may have serious economic and social impacts on the region where it occurs. Therefore, this paper focuses on the formation mechanism of financial asset bubbles, their impact and their governance. The following conclusions are drawn: the formation mechanism of financial asset bubbles includes both rational and irrational bubbles, with the latter mainly stemming from behavioral financial factors such as investors' noisy trading behavior and cognitive capacity limitations. The impact of financial asset bubbles on the financial system and the macroeconomy includes credit expansion and high leverage, market confidence and systemic risk, as well as economic downturns, inflationary pressures, and increased fiscal burdens.

Keywords: financial asset bubbles, theoretical mechanisms, economic fluctuations, macro effects.

1. Introduction

Financial asset bubbles are an important factor affecting the stability of the macroeconomic and financial systems. Financial crises caused by imbalances in the financial system can have a very strong economic and social impact on the region in which they occur. For example, Japan experienced a bubble economy in the 1980s. After the bubble burst, the downward real estate cycle lasted for 20 years. During this period, Japan's economy lost its momentum, and the entire financial system faced numerous crises [1].

The formation, impact, and policy intervention of asset bubbles have been the subject of extensive research by economists and financial scholars around the world. One example is Jordi Galí's research on the impact of monetary policy on a rational asset price bubble [2]. This topic has been a popular one in studies of financial markets.

In view of this, this paper surveys the relevant literature on the generation, impact, and governance of financial asset bubbles to provide a theoretical foundation for bubble response, application, and prevention. The remainder of the paper is organized into four parts: the first part discusses the generation of asset bubbles; the second part discusses the relationship between asset price bubbles

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and the financial system; the third part discusses the impact of asset bubbles on the macroeconomy; and the fourth part discusses the relevant policy recommendations for the governance of bubbles.

This study provides a theoretical basis for the formation, impact, governance, response, application and prevention of asset bubbles.

2. The Emergence of Asset bubbles

Asset bubbles refer to situations where prices deviate from fundamentals. Stiglitz stated that bubbles exist when an asset's price is high today only because investors believe its price will rise tomorrow and have nothing to do with fundamentals [3]. It includes several special traits, and only four of the more distinctive ones are discussed below. One of the special traits it has is the rapid increase in price. The price of an asset that undergoes bubbles will rise in a short period of time, which far exceeds its historical average and intrinsic value. Secondly, bubbles are usually accompanied by speculative activity. For example, large numbers of investors flood the market to speculate rather than invest based on the actual value of assets. Thirdly, asset bubbles reflect the irrational behavior of market participants. It is the result of individuals' decisions being driven by herd mentality and fear of missing out (FOMO), at the expense of risk analysis. Fourthly, the prices of bubble assets are usually detached from fundamentals. This means that asset prices deviate significantly from their intrinsic value, and fundamentals (e.g., earnings, costs, etc.) are no longer the main determinants of price.

Asset bubbles arise due to the incomplete nature of financial markets. A bubble can be described as a pricing distortion of an asset. In a perfect financial market, it is possible to hedge out the latent risks associated with each possible future state in advance through the supply and mix of finance. In this case, all assets can be priced correctly, and thus asset bubbles do not arise. Pricing distortions, on the other hand, occur in incomplete markets, i.e., when there is a lack of some financial asset or assets that can be used to allocate resources between different states.

3. Relationship between asset price bubbles and the financial system

3.1. Theoretical mechanisms of financial asset bubbles

3.1.1. Overview of the mechanisms for generating asset price bubbles

The process by which asset price bubbles form has been the subject of several academic theories. Kindleberger, in his seminal work Manias, Panics, and Crashes, proposes that bubbles typically arise through the phases of innovation, expansion of borrowing and lending, irrational speculation, and failure [4]. This process is known as the "five-stage model of financial crisis". According to Shiller, irrational exuberance and market overreactions are important causes of bubble formation [5]. Investors push up asset prices due to "herd mentality" and "overconfidence", leading to the creation of bubbles.

Numerous scholarly investigations have proven that market operation mechanisms are the cause of asset price bubbles. Bubbles can be categorized as rational or irrational, depending on whether they are based on investors' rational expectations. The former explores the operating mechanism of bubbles under the assumption of rational expectations, while the latter analyzes the operating mechanism of market bubbles in the context of behavioral finance. This essay unfolds the literature on irrational bubbles.

3.1.2. Irrational bubble

The efficient market hypothesis suggests that rational arbitrageurs can drive asset prices back to fundamentals by selling overvalued assets and buying undervalued assets for a gain. However, a large

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number of empirical studies have proven its irrationality. Investors in general are not ideal, irrational behavior has led to all kinds of bubbles in history. These scholars try to study the mechanism of asset bubble price formation from the perspective of behavioral finance, such as noise trading and investor cognition.

3.1.3. Noise trader

Via Noise Trader Model (NTM), De Long and others found that irrational noise traders have false expectations, which can affect asset prices, and are able to achieve higher expected returns [6]. The short-term stochastic impact of these noise traders on asset prices forces follow-through behavior by arbitrage traders who are rationally making overvalued assets, which causes capital prices to deviate significantly from their fundamental value in the absence of fundamental risk.

3.1.4. Investor Perceived Capability

Other scholars have analyzed the bubble mechanism from the perspective of investors' cognitive ability. Based on Learning-to-Forecast Experiments experiment, Zong Jichuan et al. study the impact of individual cognitive ability on asset bubbles, and find that investors with lower cognition tend to roughly treat recent or short-term trends as long-term market movements [7]. The existence of irrational people drives asset prices further away from their fundamental values, and ultimately, asset bubbles are formed.

3.2. Impact of the bubble on the financial system

The impact of asset price bubbles on the financial system is mainly reflected in the following aspects:

3.2.1. Credit expansion and leverage

Minsky points out that during asset price bubbles, financial institutions tend to relax credit standards and expand the size of loans, thus contributing to the formation of bubbles [8]. This process is known as the "financial instability hypothesis". High leverage makes the financial system more vulnerable and when the bubble bursts, the balance sheets of financial institutions deteriorate rapidly, increasing systemic risk [9].

3.2.2. Market confidence and systemic risk

Gorton examined the relationship between financial crises and market confidence and concluded that a collapse in market confidence when a bubble bursts leads to a liquidity crunch in financial markets, further exacerbating the severity of financial crises [10]. The close interconnectedness of financial institutions is such that the failure of one institution may trigger a chain reaction leading to the destabilization of the entire financial system [11].

3.2.3. Macroeconomic impact

Analyzing historical data, Reinhart and Rogoff found that the bursting of asset price bubbles is usually accompanied by a severe recession [12]. The bursting of a bubble leads to a decline in asset prices, a weakening of the wealth effect, and a reduction in consumption and investment, which can have wide-ranging macroeconomic impacts. Losses in financial institutions and the credit crunch also limit access to finance for firms and consumers, further exacerbating the economic downturn. Details on the specific macroeconomic impact of asset bubbles are elaborated in the next section.

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3.3. Macroeconomic implications of asset bubbles

3.3.1. Economic growth

The bursting of financial asset bubbles usually leads to a slowdown in economic growth. Kaminsky and Reinhart find that the run-up to a financial crisis is often accompanied by the formation and bursting of asset bubbles, and that such bursting triggers losses in financial institutions, a credit crunch, and a fall in consumer demand, which in turn depresses economic growth [13].

3.3.2. Financial stabilization

The bursting of financial asset bubbles poses a major threat to the stability of the financial system. Gorton points out that sharp fluctuations in asset prices can lead to a deterioration in the balance sheets of financial institutions, thereby increasing the systemic risk of the financial system [14]. In addition, the decline in investor confidence and the drying up of market liquidity following the bursting of a bubble can also exacerbate financial market instability.

3.3.3. Inflation and monetary policy

The impact of asset price bubbles on inflation and monetary policy should not be ignored. Cecchetti et al. argue that asset price bubbles lead to distortions in resource allocation and increase inflationary pressures [15]. To cope with the recession after the bursting of the bubble, the central bank may need to adjust its monetary policy, which increases the complexity and uncertainty of monetary policy operations.

3.3.4. Fiscal policy and government intervention

After a bubble bursts, governments usually need to adopt fiscal policy and other interventions to stabilize the economy. Reinhart and Rogoff point out that government bailouts and stimulus packages in the wake of financial crises increase fiscal deficits and public debt burdens, which can negatively affect long-term economic growth [16].

3.4. Policy recommendations for the governance of bubbles

Several scholars have conducted research on the governance of asset bubbles through monetary policy. Dong et al. introduce financial intermediation and deposit reserve requirements and find that monetary policy can affect the conditions and size of the existence of asset bubbles, but can exacerbate inflation volatility while reducing bubble volatility [17]. Dong Feng et al.(2023), on the other hand, introduce wage stickiness and labor market frictions in the New Keynesian framework and find that optimal monetary policy should be responsive to asset prices, regardless of whether macroprudential policy is considered [18].

Kocherlakota argues that asset bubbles contribute to the efficiency of capital allocation and that the government should intervene when asset bubbles burst: on the one hand, the government should distribute government bonds to compensate entrepreneurs whose assets are impaired due to the bursting of the bubble [19]. On the other hand, the government improves entrepreneurs' returns on investment by promising to borrow at the equilibrium interest rate in the equilibrium of the asset bubble. However, in a dynamic framework, the optimal bailout policy may be time-varying or state-dependent. Dong Feng and Xu find that the government needs to weigh the trade-offs between market liquidity and real economic development, and the optimal bailout declines with the increase in financial system risk [20]. Dong and Xu find that bailing out bubble holders through fiscal transfers and ex-post compensation can alleviate market illiquidity, but the policy alters firms' expectations

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and triggers moral hazard [21]. The optimal dynamic bailout policy is similar to a headwind policy, i.e., when the size of asset bubbles exceeds the steady-state value, government bailouts are reduced, and vice versa, government bailouts are increased to provide liquidity.

4. Conclusion

This paper summarizes the formation mechanism of financial asset bubbles, their impact on the financial system and the macroeconomy, and related policy recommendations. Characteristics of asset bubbles include rapid price increases, frequent speculative activities, irrational investor behavior, and decoupling from fundamentals. The formation mechanism of bubbles mainly included noise trading and investor cognitive bias. The bursting of asset bubbles can lead to negative impacts such as credit contraction, financial market turbulence and an economic slowdown. For the management of asset bubbles, scholars have proposed the role of monetary policy and macroprudential policy, and also discussed the need for government intervention and bailouts and their trade-offs. Overall, the formation, impact and management of asset bubbles is a complex issue that requires policy coordination and cooperation in many areas.

The scope sample of this paper is limited, and it is hoped that future studies will continue to expand the scope sample to allow for more accurate findings.

References

[1] *Zhao H. (2023). A brief discussion on the generation, regulation and consequences of Japan's real estate bubble. China Real Estate Finance (05), 15-22.*

[2] *Galí, J. (2014). Monetary policy and rational asset price bubbles. American Economic Review, 104(3), 721-752.*

[3] *Stiglitz, J. E. (1990). Symposium on bubbles. Journal of economic perspectives, 4(2), 13-18.*

[4] *Kindleberger, C. P. (2000). Manias, panics, and crashes: a history of financial crises. The Scriblerian and the Kit-Cats, 32(2), 379.*

[5] *Shiller, R. J. (2003). From efficient markets theory to behavioral finance. Journal of economic perspectives, 17(1), 83-104.*

[6] *De Long, J. B., Shleifer, A., Summers, L. H., & Waldmann, R. J. (1990). Noise trader risk in financial markets. Journal of political Economy, 98(4), 703-738.*

[7] *Zong J. C., Fu J. & Bao T. (2017). Traders' cognitive ability and financial asset price bubbles: an experimental study. World Economy (06), 167-192. doi:10.19985/j.cnki.cassjwe.2017.06.009.*

[8] *Minsky Ph D, H. P. (1986). Stabilizing an Unstable Economy.*

[9] *Adrian, T., & Shin, H. S. (2010). Liquidity and leverage. Journal of financial intermediation, 19(3), 418-437.*

[10] *Gorton, G., Metrick, A., Shleifer, A., & Tarullo, D. K. (2010). Regulating the shadow banking system [with comments and discussion]. Brookings papers on economic activity, 261-312.*

[11] *Brunnermeier, M. K., & Pedersen, L. H. (2009). Market liquidity and funding liquidity. The review of financial studies, 22(6), 2201-2238.*

[12] *Reinhart, C. M., & Rogoff, K. S. (2009). The aftermath of financial crises. American Economic Review, 99(2), 466-472.*

[13] *Kaminsky, G. L., & Reinhart, C. M. (1999). The twin crises: the causes of banking and balance-of-payments problems. American economic review, 89(3), 473-500.*

[14] *Gorton, G. B. (2015). Banking panics and business cycles. The Maze of Banking: History, Theory, Crisis, 200.*

[15] *Cecchetti, S. G. (2000). Asset prices and central bank policy. Centre for Economic Policy Research.*

[16] *Reinhart, C. M., & Rogoff, K. S. (2009). The aftermath of financial crises. American Economic Review, 99(2), 466-472.*

[17] *Dong, F., Miao, J., & Wang, P. (2020). Asset bubbles and monetary policy. Review of Economic Dynamics, 37, S68-S98.*

[18] *Dong, Feng, Zhou, Kihang, and Jia, Yandong (2023): 'Asset Bubbles and Optimal Monetary Policy', Financial Studies, Vol. 6*

[19] *Kocherlakota, N. (2009). Bursting bubbles: Consequences and cures. Unpublished manuscript, Federal Reserve Bank of Minneapolis, 84.*

[20] *Dong, F. and Xu, C. (2020) "Rigid Bubble: A Dynamic General Equilibrium Analysis Based on Financial Risks and Rigid Payments", Economic Research, No. 10.*

DOI: 10.54254/2754-1169/129/2024.18360

[21] Dong, F., & Xu, Z. (2022). Bubbly bailout. Journal of Economic Theory, 202, 105460.