

Asset Prices and Business Cycles

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Abstract

Over a long period, we have witnessed a number of financial crises. For example, the Japanese economy experienced large swings in land prices and stock prices in the early 1990s that lead to a prolonged period of economic stagnation, known as “the lost decades.” Another example is the 2007–2009 global financial crisis. These events highlight that asset price fluctuations could have a significant impact on the economy, especially through the banking sector.

In this dissertation, we investigate the linkages among the financial market, the banking sector, and the real economy. In particular, we try to explore the following questions. What are the key ingredients needed to jointly explain macroeconomic outcomes and asset prices in a general equilibrium framework? What are the implications of asset price fluctuations for the real economy, especially during a financial crisis? How can the interaction between the banking sector and the financial market lead to a collapse in asset prices and a financial crisis?

In Chapter 1, we review the literature on macrofinancial linkages. In particular, we focus on the relationships between asset prices and macroeconomic activities, the implications of financial frictions for the macroeconomy, and the relationships between asset prices and a banking crisis.

Chapter 2 studies the links between asset prices and macroeconomic activities. We construct a simple business cycle model with habit persistence and adjustment costs on capital and labor, and estimate this model using the Bayesian estimation technique. Based on US and Japanese quarterly data, we find that (i) this real business cycle model can explain the key business cycle facts, (ii) the model cannot replicate the large volatility observed in actual stock price data, (iii) the simulated stock price data derived from the model is highly correlated with the actual stock price data, and (iv) this high correlation between simulated and actual stock price data is brought about by the adjustment costs on capital and labor.

Chapter 3 explores the quantitative importance of asset price fluctuations in the real economy. Using Japanese quarterly data, we estimate a dynamic stochastic general equilibrium model in which land is used as a collateral asset. Our estimation shows that most of the fluctuations in land prices are explained by a shock to the demand for land originating in the household sector and this shock made an important impact on the economy around the bubble period. These findings imply that movements in land prices might have a significant impact on the real economy, especially in the bubble economy.

Chapter 4 investigates how asset prices collapse, especially focusing on the relationship with the banking sector. To this end, we consider a banking model that incorporates a secondary market for long-term assets. Adverse selection arises in this market because banks are better informed about the quality of their assets than other market participants. The model generates multiple equilibria.

In one equilibrium, bank runs cannot occur. In another equilibrium, asset prices can be low and bank runs can occur. This can be interpreted as a financial crisis. We also obtain implications for liquidity regulations. In this framework, a liquidity requirement for banks might cause bank runs.