SUMMARY

HOUSING, BANKING CREDIT AND MONETARY POLICY : A NK-DSGE ANALYSIS

KRITSANEE PISITSUPAKUL

Main advisor: Professor FUMIO HAYASHI

June 2020

This dissertation consists of two papers that study monetary policy transmission regarding the role of housing and banking credit. The key idea is that housing serves as collateral for loans and loans affect economic activities. We, therefore, employ a New Keynesian DSGE model with credit constraint in the credit market to investigate the responses of key macroeconomic variables to the structural shocks.

The first paper elucidates the role of housing in monetary policy effect on household consumption by developing a two-sector NK-DSGE model with credit constraint and applying Bayesian technique to estimate the model. The results emphasize the following: (1) The household consumption movement is the consequence of house price change. An increase in house price reinforces consumption by increasing the opportunity to access the credit to finance consumption. (2) The role of housing in monetary policy is transmitted by : (i) *the wealth effect on spending*; an increase in interest rate causes real house price to fall and further alleviates consumption, (ii) *the balance sheet effect on borrowing*: households

who are borrowers suffer more when interest rate increases because of the combination of wealth decline and credit tightening, and (iii) *the amplification effect on borrowing:* housing collateral amplifies the effect of interest rate shock and housing demand shock under high credit relaxation, meaning that the higher loan-to-value (LTV) ratio, the larger impact on consumption.

The second paper analyzes the effect of bank lending through housing collateral on the economy. We extend a previous two-sector NK-DSGE model by incorporating the banking sector and determining an endogenous LTV ratio in the credit constraint deviated from a fixed ratio in the first model. Our attempt in the second model is to emphasize the contribution of financial shocks emerging from the credit supply and the credit risk shock to capture the linkage between the banking sector and the real economy. The findings show that; (1) a reduction in the LTV ratio (credit crunch) causes household consumption to fall substantially, (2) higher credit risk affects banks, which reduce the loan supply and increase the loan–deposit spread to compensate for the loss in profit and capital, (3) The endogenous LTV ratio amplifies the effect of a monetary policy shock but mutes the effect of a banking credit risk shock, and (4) the existence of banks attenuates the impact of contractionary monetary policy by reducing banking credit risk.

In summary, the dissertation emphasizes the importance of banking activities. Banking credit tied to the value of housing collateral establishes a link between the financial and the real sector in the manner of the propagation of economic impacts.