

ABSTRACT

In this study, we use an overlapping generation model with heterogeneous agents to explain the portfolio composition and their relationship to macroeconomic shocks of households in Thailand, with housing assets recognized separately from other kinds of wealth. Households in the model work for a fixed number of period before retiring and dying with certainty when reaching the specified age. There are productivity shocks both at the aggregate economy level and the individual level. The complication in solving the utility-maximizing problem in this economy arises because each household does not know other households' decisions, which are critical to their decision, at the time it has to make the decisions. The key to simulating this economy is to come up with some forecasting equations that give the forecast close enough to the aggregate results when all households follow that forecast.

The model predicts the ratio to output, volatility relative to output, and correlation with output of key variables that are in line with the empirical data. The age profile of average housing-to-wealth ratio, average holding of housing capital, and average holding of business capital from the model is also similar in shape to the one derived from the 2006 Household Socio-Economic Survey. Regarding the relationship to aggregate productivity shock, the model shows that households tend to borrow against a higher proportion of housing in bad years than they do in good years.

Several scenarios are explored. For example, when households are not allowed to borrow, households tend to hold larger business capital and smaller housing capital. The reduction in housing capital is smaller than the increase in business capital, reflecting the needs for higher precautionary savings. Without borrowing, households are found to hold smaller houses at young ages but eventually own larger houses when they mature. Next, households' responses to larger uncertainty to the aggregate economy are investigated. Key variables are found to change only slightly as a ratio of output but they become less procyclical. In another scenario, the model without housing capital is simulated. The relative volatility of consumption as well as its correlation with output rises sharply, reflecting less ability of households to smooth consumption against output shock. We also explore the model with large productivity shock and without housing with the focus on the effect

of changing the magnitude of shock in the model without housing compare with the base case model. Households are found to respond to larger productivity shock in similar way in the model with and without housing capital. And finally, we investigate the effect of removing transaction costs from the base case model. Housing investment and housing capital are found to increase as a proportion of output. Standard deviation ratio rises for both housing investment and business investment, whereas correlation with output falls.

In relating the study to the real economy, the model predicts that the recent trend in Thailand towards higher loan-to-value ratio, longer repayment period, and the better access of households to borrowing should lead to higher housing investment and higher housing stock for the Thai economy in equilibrium. The model also predicts housing investment to be less procyclical. In view of the government's policy to lower transaction costs of housing investment, the model predicts higher housing investment and housing capital. The model also predicts higher volatility of housing investment relative to output and predicts housing investment to be less procyclical.