Abstract

The bachelor's thesis applies the stochastic cusp catastrophe model to the housing market of the United States. Weekly data over the period from 2007 to 2017 are used. The current catastrophe theory literature related to the housing market is reviewed, the models found are assessed and expanded. Specifically, we have identified three deficiencies of the catastrophe models applied to housing market in the current literature and our contribution lies in the elimination of these deficiencies. In order to satisfy the constant volatility assumption of the model, the state variable is normalized by the estimated volatility derived from GARCH. Furthermore, multiple control variables are added to the model to represent the activity of fundamentalists and chartists. The results suggest that the cusp catastrophe model fits the data better than the linear and logistic models. The normalization of the state variable improves the model performance while the introduction of the additional control variables does not produce better results.

Keywords