The Impact of the Credit Market on the Development of the Real Estate Market in Connection with the Subprime Crisis

Bachelor Thesis

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Executive Summary

As often seen in historical crashes the real estate market and mortgage lending play an essential role. This is observable also in the current financial crisis – the subprime crisis – where property and mortgage cycles in the US moved strongly together. Both markets have outgrown equilibrium levels and have crumbled recently. We want to examine, if a causal relationship exists, after which we would be able to predict future developments in the housing markets. As such we try to find causality for house prices in an equilibrium market model with a Granger-Causality test.

After an introduction about the current subprime crisis and a discussion about related studies, we will have a closer look at the two markets and their determinants. Then, we introduce some factors and evidence on how the markets are linked to each other and following we come to the core of this study. In the empirical part, we start with introducing the theory which gives us the background for the analysis, enclosing time series issues, volatility modeling, cointegration and error-correction theory and finally Granger-Causality testing. We discuss and derive our equilibrium VAR and VECM models and determine measurements for the variables of our model. Then, we follow a four step procedure as preparation work, to prove that the model is cointegrated and to be able to make a judgment on the existence of granger causality. Restrictions of the empirics are discussed. At the end, a light is thrown on financial crisis and business cycle models and we talk about comparable crashes and ideas for further investigations in this field of study.

The derived VAR and VECM are mainly based on a study on credit and real estate markets in Greece, which examine causal relationships for mortgage loans and housing prices. The chosen variables, as well as discussions on data and data preparation do orientate on it. We make some changes in the model though and also discuss different models in regards to the results of causality.

We find that for our derived equilibrium VAR and VECM there exists no causality in direction to house prices in the US for data ranging from 1990 until 2008. This indicates that we are not able to predict future development in US house prices with past evolutions in the mortgage credit market and influencing factors. In a simple two variable model, there would be evidence for a relationship, but only under low significance. This result might be

strongly influenced by the limited time range of data and the proxies of our variables, whereas total mortgage volume estimates were used to quantify the credit market. It would be interesting to compare the results with a similar study which would use subprime volume data only.