

# **An Empirical Test of the Fundamental Value Hypothesis in Asset Markets**

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This dissertation investigates the question of whether asset prices depart from fundamental value. The contribution of this research is to test the fundamental value hypothesis from a new perspective, using Iowa and Nebraska agricultural land data. Agricultural land was chosen because the factors which affect land values are somewhat easier to identify than the myriad of factors which affect the values of other assets. Employing the present value model, the fundamental value of a parcel of land is equal to the present value of the future cash flows associated with the land. This research hypothesizes that cash rents, commodity prices, input prices, and interest rates all impact expectations about future cash flows and should be included as fundamental determinants of land value. The research question is empirically investigated using a number of different techniques. The null hypothesis of no rational bubbles is supported by the results of univariate unit root tests and duration dependence tests. Conversely, impulse responses of the Vector Error Correction model indicate that land values adjust slowly to changes in some fundamental determinants. Furthermore, one-time shocks to land values cause further changes in land values themselves independent of fundamentals, a result that suggests a market with a propensity for bubbles. Using Markov chain analysis, Iowa and Nebraska returns are found to exhibit positive serial dependence and persistence in runs of negative returns. Both Iowa and Nebraska returns also show evidence of time irreversibility or asymmetric return patterns through time, an indication that land markets react differently to positive changes in

value than to negative changes. These results suggest that agricultural land prices depart from fundamental value due to asymmetries, nonlinearities, slow adjustment to fundamental innovations, and increases in land value leading to further changes in the same direction. We hypothesize that departures from fundamental value in this market may be due in part to high transactions costs and limited arbitrage opportunities as well as the nature of land as a productive asset.