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“Essays on Imperfect Knowledge, Structural Change, and Persistence in the Cointegrated VAR Model”

This dissertation consists of three self-contained articles presented in three separate chapters. The overall aim is to provide a foundation for combining the new theoretical framework of Imperfect Knowledge Economics (IKE) developed by Frydman and Goldberg (2007, 2011) with the econometric methodology based on the cointegrated VAR model of Johansen (1996) developed at the University of Copenhagen. In the first chapter, I consider a simple general IKE asset pricing model and show how internal consistency can be fully incorporated in IKE models in a way that both allows for internal consistency compatible with individual rationality and accords individuals' expectations a partly autonomous role in driving aggregate outcomes. Moreover, I show how internal consistency conditions imply that the asset price and the exogenous variables in the model are cointegrated with stochastic cointegration parameters during different sub periods. Hence, I show how internal consistency is crucial for our ability to test empirical implications of IKE models based on the cointegrated VAR model and potential extensions which allow for stochastic cointegration parameters. In the second chapter, I simulate a simple model embedding key features of IKE and show that empirical regularities in the simulated data can be found using the cointegrated VAR model, despite bounded parameter-instability and stochastic cointegration in the data-generating process. Finally, the third chapter is a purely econometric article where I use simulations to show that the persistence frequently found in estimated cointegration relations and corresponding low estimated adjustment parameters can potentially be caused by stochastic cointegration parameters in the underlying data-generating process. Thereby the results in this thesis confirm the original intuition behind the attempt to combine IKE and the econometric approach based on the cointegrated VAR model, that the parameter-instability of IKE models could potentially be an important source of the persistence found empirically in estimated cointegrated VAR models for macroeconomic and financial time-series.