

Quoniam

QUANTITATIVE INVESTMENT ENGINEERING

ABSTRACT – DISSERTATION

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APPLICATIONS OF STATE SPACE MODELS IN FINANCE -

AN EMPIRICAL ANALYSIS OF THE TIME-VARYING RELATIONSHIP BETWEEN MACROECONOMICS, FUNDAMENTALS AND PAN-EUROPEAN INDUSTRY PORTFOLIOS

State space models play a key role in the estimation of time-varying sensitivities in financial markets. The objective of this thesis is to analyze the relative merits of modern time series techniques, such as Markov regime switching and the Kalman filter, to model structural changes in the context of widely used concepts in finance.

The presented material will be useful for financial economists and practitioners who are interested in taking time-variation in the relationship between financial assets and key economic factors explicitly into account. The empirical part illustrates the application of the various methods under consideration. As a distinctive feature, it includes a comprehensive analysis of the ability of time-varying coefficient models to estimate and predict the conditional nature of systematic risks for European industry portfolios.

<http://webdoc.sub.gwdg.de/univerlag/2009/mergner.pdf>