



## Finance and Economics Discussion Series: Signal Extraction for Nonstationary Multivariate Time Series with Illustrations for Trend Inflation

By Tucker S McElroy, Thomas M Trimbur

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.This paper advances the theory and methodology of signal extraction by introducing asymptotic and finite sample formulas for optimal estimators of signals in nonstationary multivariate time series. Previous literature has considered only univariate or stationary models. However, in current practice and research, econometricians, macroeconomists, and policy-makers often combine related series - that may have stochastic trends--to attain more informed assessments of basic signals like underlying inflation and business cycle components. Here, we use a very general model structure, of widespread relevance for time series econometrics, including flexible kinds of nonstationarity and correlation patterns and specific relationships like cointegration and other common factor forms. First, we develop and prove the generalization of the well-known Wiener-Kolmogorov formula that maps signal-noise dynamics into optimal estimators for bi-infinite series. Second, this paper gives the first explicit treatment of finite-length multivariate time series, providing a new method for computing signal vectors at any time point, unrelated to Kalman filter techniques; this opens the door to systematic study of near end-point estimators/filters, by revealing how they jointly depend on a function of signal location...



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