

This book seeks to offer practical advice for the forecasting of economic and financial variables by drawing on research which has documented the potential for the longer-term forecastability of variables such as economic growth, exchange rates and stock prices, which are notoriously difficult to forecast in the short-term. In particular, the book emphasizes the importance of acknowledging economic uncertainty, in the sense of allowing different types of shock to hit economic systems, and promotes the Kalman filter as a means of handling such shocks statistically. The book has a potentially wide readership, amongst practitioners, academics, and students, and amongst the latter, on courses in economics, finance, business studies and business management. The text is also complemented by a software package which facilitates Kalman filter estimation, freely available from the publishers on request.

The text comprises 9 chapters, running to 211 pages in a rather small typeface. The first four and final chapters deal with statistical methods of analysis, intermediate chapters dealing with applications. Of the methodological chapters, Chapter 1 emphasizes the distinction between stationary and nonstationary processes, the latter being illustrated by a noisy random walk which offers the author the opportunity to introduce a process subject to a combination of permanent and temporary shocks, and the state-space representation of such a process, at the outset of the text. The dangers of inappropriately fitting and extrapolating deterministic trend processes are also emphasized, and the distinction between stationarity and ergodicity is introduced. Chapter 2 considers simple univariate forecasting methods, and illustrates the dangers of applying moving average methods to non-stationary data, reiterates the pitfalls of extrapolating trends from non-stationary data, discusses appropriate differencing methods, critically reappraises the performance of UK Treasury and OECD economic growth forecasts during the decade up to 1992, and draws attention to the tendency for consensus amongst macroeconomic forecasters. Chapter 3 provides a review of time series regression methods, with emphasis on the consequences of data non-stationarity for regression coefficient estimates, and alternative approaches to outliers. Chapter 4 introduces the Kalman filter as a generalization of the maximum likelihood representation of the recursive least squares algorithm under the assumption of normal disturbances, though this does necessitate some potentially confusing change, in notation under Kalman filter conventions (though the author does repeatedly note the change in order to aid the reader). As the author stresses, the Kalman filter representation offers the advantage of permitting the state variables (parameters) to exhibit dynamics and to be subject to a variety of stochastic shocks. This latter feature provides the empirical model utilized throughout the remainder of the book, in the form of a regression equation in which the mean of the (logarithmic) dependent variable (i.e. the regression intercept) is subject to both permanent and temporary shocks to its level and permanent changes in its stochastic rate of growth, thereby accommodating non-stationarity and argued to be preferable to the conceptually equivalent Box-Jenkins transfer function model on grounds of initialization, parameter admissibility and potential over-differencing. The final chapter, 9, critically appraises the performance of causality tests, vector autoregressions, and cointegration and unit root tests in the context of non-stationary series using Monte Carlo methods, concluding that OLS-based methods are potentially highly misleading in circumstances where the precise form of non-stationarity is in doubt, and promotes the potential of multivariate Kalman filtering in relating non-stationary time series.
Of the applications-oriented chapters, Chapter 5 offers critiques of output trend extrapolation, large-scale econometric modeling, and developments in theoretical macroeconomics, following which the author proposes an eclectic macroeconomic model whose solution relates unexpected output changes to shocks to the rate of real money supply growth, money demand and the short-term interest rate, augmented by adverse moments in the relative price of energy and the relative price of housing. The model is applied to the quarterly rate of output growth of the US, Japan and Germany, using both least-squares and Kalman filter methodology, with comparable results. Chapter 6 extends the latter analysis by incorporating the slope of the term structure of interest rates (yield curve) as an additional regressor with significant explanatory power, on which basis it is argued that there may be an exploitable connection between the term structure and future economic growth, at least for the US and (more tentatively) Germany. Chapter 7 reviews long-term patterns in dividends, stock prices and inflation in the US, replicates the influential Fama-French study demonstrating the forecastability of US stock market excess returns relative to the in-sample mean using the dividend-price ratio, the slope of the term structure and a 'default spread', and demonstrates the robustness of this finding to alternative forecasting schemes including first and second-order autoregressive models, a random walk model and a Kalman filter model of an underlying trend subject to a mixture of temporary and permanent and shocks. However, in keeping with the Fama-French study, only the dividend yield is argued to have reliable forecasting power, the term structure influence argued to be sample-specific, and it is further suggested that dividend yield forecasting power may simply result from an historic four-year cycle in US stocks. Chapter 8 offers a replication of the highly influential Meese-Rogoff study comparing forecasts from fundamental economic models with a naive no-change forecast for the G7 currencies over a maximum horizon of five years, and emphasizes the role of absolute and relative purchasing power parity and interest parity in guiding expectations of floating exchange rate movements, particularly at long horizons. For fixed exchange rate systems, the sustainability of current account deficits and their implications for longer-term international competitiveness in view of unit labor cost trends are promoted as signals of pending devaluations.

Where the book succeeds is in addressing its primary theme of the importance of appropriately handling non-stationarity in regression-based forecasting, and in promoting the potential of the Kalman filter where there is uncertainty as to the precise form of that non-stationarity. Where the text is less convincing, is in its secondary objective of offering practical advice for the forecasting of economic and financial time series beyond the term structure-output relation and fundamental theoretical economic insights. Where empirical insight is gleaned, it is questionable, as acknowledged, whether those regularities will persist into the future. Moreover, it is regrettable that the author does not engage in a more systematic comparative analysis of alternative forecasting methods, that only elementary forecast evaluation methods are employed, and that much emphasis is placed on the correspondence of plots of Kalman filter forecasts with smoothed representations of the series being forecast. This largely reflects the authors pursuit of a method that unearths longer term underlying patterns. This pursuit, and a corresponding focus on quarterly and annual data, also means that issues concerned with the time-varying volatility of higher frequency series, and issues of seasonal adjustment, do not receive attention, which may concern some potential readers given the book's title. Nevertheless, the text is lucid, replete with empirical illustration and example, and will undoubtedly prove thought-provoking to many practitioners.