This thesis discusses various novel techniques for economic forecasting. The focus is on methods that exploit the information in large data sets effectively. Each of these methods is compared to established techniques for forecasting yields on U.S. Treasury Bills, housing prices, industrial production, the employment rate, and several other economic quantities. In general, major improvements in forecast quality are obtained.

Broadly speaking, two different approaches can be taken when dealing with large data sets: summarizing the data before estimating a model, or restricting the model parameters sufficiently so that all data can be used. This thesis presents advances in both directions. In particular, a new technique for summarizing large data sets in the presence of outlying observations is proposed, as well as a method for estimating flexible nonlinear models with many predictors. The usefulness of these techniques is demonstrated, both in simulation experiments and in empirical applications.

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