

State Space Models for Market-Share Time Series

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Data on market shares have several features that make conventional forecasting methods inappropriate. Each time series that represents a particular “brand” is constrained to lie between zero and one, and their total must sum to one. In addition, new brands may appear or old brands fade away. If traditional forecasting methods are applied directly to such time series the resulting point and interval predictions may violate the associated unit interval conditions. Various adaptations have been proposed to avoid these difficulties, whereby the restricted series of proportions is transformed into an equivalent set of unrestricted real series. Standard state space methods may then be applied to the unrestricted series. The method is illustrated using data from the Iowa Electronic Market on presidential primary elections.