

The Forecast Manager

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Everette S. Gardner, Jr.

**Bauer College of Business
University of Houston
Houston, Texas 77204-6021**

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Preface

The *Forecast Manager* is a collection of 16 Excel models aimed at the corporate forecast analyst. These models perform data analysis, seasonal adjustment, regression modeling, development of growth curves for new products or markets, and exponential smoothing.

An important difference between the *Forecast Manager* and the typical statistics package is the *Forecast Manager's* built-in capability to simulate forecasting. It is generally accepted in the literature of forecasting that any model should be evaluated by dividing the data into two parts. The first part is called the model-fitting or "warm-up" sample, used to choose parameters and compute initial values of the model components. The second part of the data is called the forecasting sample, used to compute forecasts and errors without making any changes to the model developed in the warm-up sample.

This testing in the second part of the data is called a forecasting simulation. The primary objective is to show how the model can be expected to perform on a day-to-day basis with no knowledge of the future. Another objective is to detect changes in patterns in the middle of the data, a problem which may go unnoticed if all data are used to warm up the model. In most statistics software, simulations are cumbersome if not impossible to carry out. In the *Forecast Manager*, all you have to do is to specify where the sample should be divided. Everything else is automatic.

Several models in the *Forecast Manager* are uncommon in other software but have proven their worth in practical forecasting. For example, the business cycles model is extremely valuable in deciding what type of trend to use in a forecasting model. The regression models include discounted-least-squares for the frequent cases in which the relationship between independent and dependent variables changes with time. The exponential smoothing models include the damped trend, which decreases the amount of growth in the forecasts as the time horizon increases. The damped-trend model for exponential smoothing was developed by Gardner and McKenzie¹ in 1985. Since that time, the model has been extended by many researchers and has performed quite well, especially at longer forecasting horizons.

Everette S. Gardner, Jr.
Houston, Texas

¹Everette S. Gardner, Jr. and E. McKenzie, "Forecasting Trends in Time Series," *Management Science*, Vol. 31, No. 10 (October, 1985), pp. 1237-1246.