Applied Forecasting: Using Time Series Methods & Dynamic Regression

Fort Knox, Kentucky

ORSA CEP 03-706

4-7 February 2003

SYNOPSIS: This course concentrates on the practical aspects of generating forecasts from the major time series methods to include decomposition, exponential smoothing, Box-Jenkins, dynamic regression and combined-forecasting.

Topics include:

Introduction To Forecasting

- **Need for Forecasting**
- **Types of Forecasts**
- **Measuring Forecasting Accuracy**
- **Overview of Forecasting Methods**

Exponential Smoothing

- **Global vs. Local Weights**
- **Classification of Smoothing Techniques**
- **Holt-Winters Methods**
- **Damped Trends**
- **Automatic Forecasting**
- **Modeling of Promotions and Other Events**

Arima (Box-Jenkins) Models

- **Smoothing vs. ARIMA**
- **Time Series Processes o Stationarity**
- **Identification of ARIMA Models**
- **Estimation and Validation of ARIMA Models**
- **Automatic ARIMA Forecasting**

Classical And Dynamic Regression

- **Simple and Multiple Regression Models**
- **Multicollinearity**
- **Dynamic Regression Strategy**

Combining Forecasts

- **Rationale for Combining Forecasts**
- **Methods of Combining**
- **Evidence on the Accuracy of Combining**

<u>Texts</u>: Each participant will receive a bound handout of the presentation materials, the text <u>Applied Statistical Forecasting</u> and supplementary materials regarding the software package ***Forecastpro***.

LEN TASHMAN: Dr. Tashman is on the faculty of the School of Business Administration at the University of Vermont. He holds a Ph.D. in Economics from Brown University, where he was both an NDEA and Ford Foundation Fellow. Prior to beginning his academic career, he worked for the Board of Governors of the Federal Reserve System in the area of financial forecasting. Dr. Tashman is the co-author of a book on statistical methods, and has published journal articles in the ***Southern Economics Journal, National Tax Journal, Journal of Education Finance, International Journal of Forecasting, Journal of Business Forecasting***, and elsewhere.

Dr. Tashman served on the Board of Directors for the International Association of Business Forecasting (1991-97) and presently is the Software Editor for the Oracle of the International Institute of Forecasters. Along with former IPE student, James Hoover, he co-authored the chapter, Evaluation of Forecasting Software, in J. Scott Armstrong's **Principles of Forecasting: A Handbook for Researchers and Practitioners**.

Dr. Tashman was the recipient of the University of Vermont's Kroepsch-Maurice Award for Outstanding Teaching as well as the MBA Association's Professor of the Year on four occasions.

ADMINISTRATIVE INFORMATION

PLACE: Classroom XXI-1, Skidgel Hall, U.S. Army Recruiting Command, Fort Knox, KY.

ELIGIBILITY: This is a special offering being conducted for Recruiting Command personnel. Others may attend on a space available basis.

CLASSIFICATION: Unclassified.

FUNDING: All costs for the course, to include registration and course materials, will be paid by ALMC. Travel and TDY payments for all personnel must be made by the attendee's parent organization.

APPLICATION: Personnel desiring to attend should apply via their Training Officer through the Army Training Requirements and Resources System (ATRRS), School Code 907, Course Code ALMC-SE, offering 03-706.

POINT OF CONTACT: Fort Knox POC can be reached at (502) 626-0453. Further information may be obtained from the ORSA CEP course director at (804) 765-4249/4226.

SCHEDULE: The course begins at 0900 Tuesday, 4 February and concludes at 1500 Friday, 7 February 2003.