INSTRUCTOR RESOURCES

Online Learning Center (OLC) www.mhhe.com/stevenson12e

The Online Learning Center provides complete materials for study and review. At this book's website, instructors have access to teaching supports such as electronic files of the ancillary materials: Solutions Manual, Instructor's Manual, test bank, PowerPoint Lecture Slides, Digital Image Library, and Excel Lecture scripts.

Instructor's Manual. Prepared by Michael Godfrey, University of Wisconsin-Oshkosh, with contributions from William J. Stevenson, this manual includes teaching notes, chapter overview, an outline for each chapter, and solutions to the problems in the text.

Test Bank. Prepared by the Alan Cannon, University of Texas-Arlington, the Test Bank includes over 2,000 true/false, multiple-choice, and discussion questions/problems at varying levels of difficulty.

EZ Test Online. All test bank questions are available in EZ Test Online, a flexible electronic testing program. The answers to all questions are given, along with a rating of the level of difficulty, chapter learning objective met, Bloom's taxonomy question type, and the AACSB knowledge category.

PowerPoint Lecture Slides. Prepared by David Cook, Old Dominion University, the PowerPoint slides draw on the highlights of each chapter and provide an opportunity for the instructor to emphasize the key concepts in class discussions.

Digital Image Library. All the figures in the book are included for insertion in PowerPoint slides or for class discussion.

Excel Lecture Scripts. Prepared by Lee Tangedahl, University of Montana, the scripts provide suggestions on using Excel and the Excel templates in class.

Operations Management Video Series

The operations management video series, free to text adopters, includes professionally developed videos showing students applications of key manufacturing and service topics in real companies. Each segment includes on-site or plant footage, interviews with company managers, and focused presentations of OM applications in use to help the companies gain competitive advantage. Companies such as Zappos, FedEx, Subaru, Disney, BP, Chase Bank, DHL, Louisville Slugger, McDonald's, Noodles & Company, and Honda are featured.

STUDENT RESOURCES

Online Learning Center (OLC) www.mhhe.com/stevenson12e

Students have access to study materials created specifically for the text.

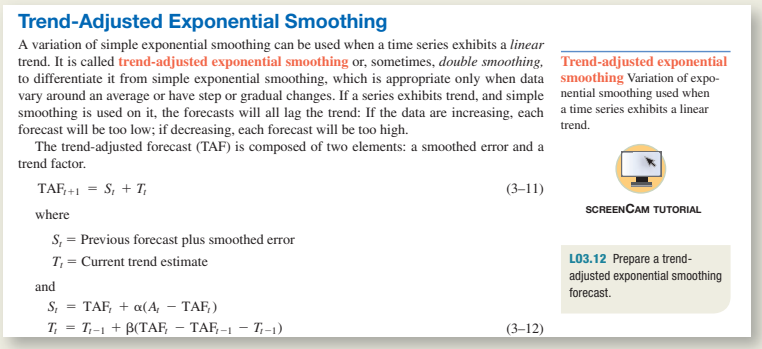
- Quizzes—self-grading to assess knowledge of the material.
- PowerPoint Slides—give an overview of the chapter content.
- Excel Data Files—import into Excel for quick calculation and analysis.
- Study Outlines—provide a framework for taking notes.
- Screencam Tutorials—describe how to solve problems in the text (see below).

- Excel Templates—provide a handy Excel-based tool for solving problems in the text (see below).
- And more . . .

SCREENCAM TUTORIAL

ScreenCam Tutorials

These screen "movies" and voiceover tutorials explain key chapter content, using Excel and other software platforms.



Trend-Adjusted Exponential Smoothing

A variation of simple exponential smoothing can be used when a time series exhibits a *linear* trend. It is called **trend-adjusted exponential smoothing** or, sometimes, *double smoothing*, to differentiate it from simple exponential smoothing, which is appropriate only when data vary around an average or have step or gradual changes. If a series exhibits trend, and simple smoothing is used on it, the forecasts will all lag the trend: If the data are increasing, each forecast will be too low; if decreasing, each forecast will be too high.

The trend-adjusted forecast (TAF) is composed of two elements: a smoothed error and a trend factor.

$$TAF_{t+1} = S_t + T_t \quad (3\text{–}11)$$

where

S_t = Previous forecast plus smoothed error

T_t = Current trend estimate

and

$$S_t = TAF_t + \alpha(A_t - TAF_t)$$

$$T_t = T_{t-1} + \beta(TAF_t - TAF_{t-1} - T_{t-1}) \quad (3\text{–}12)$$

Trend-adjusted exponential smoothing Variation of exponential smoothing used when a time series exhibits a linear trend.

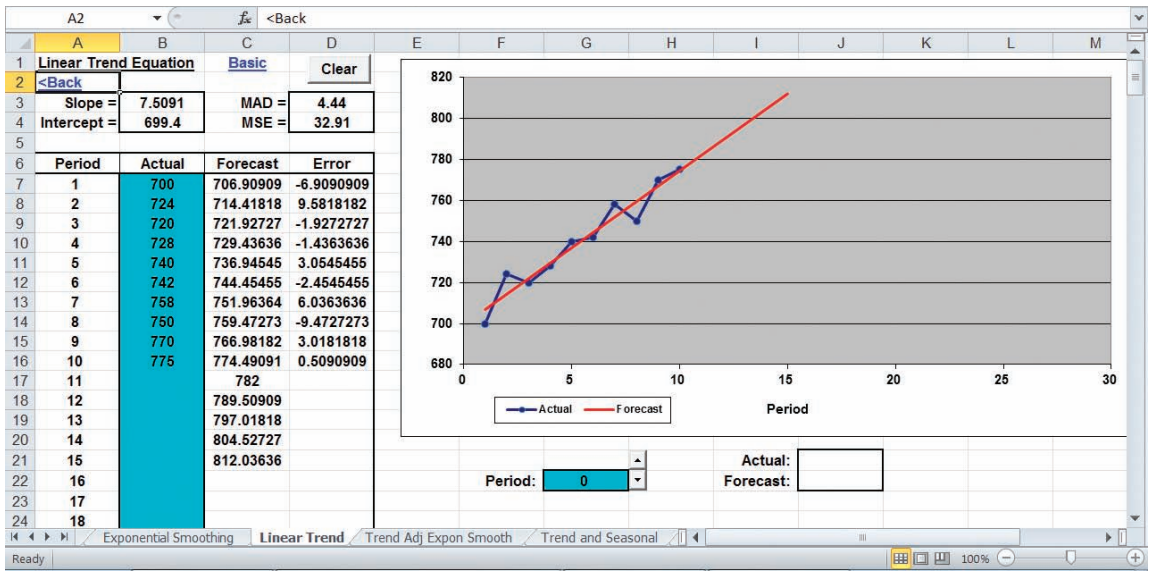
SCREENCAM TUTORIAL

L03.12 Prepare a trend-adjusted exponential smoothing forecast.

Excel Templates

Templates created by Lee Tangedahl, University of Montana, are included on the OLC. The templates, over 70 total, include dynamically linked graphics and variable controls. They allow you to solve a number of problems in the text or additional problems. All templates have been revised to allow formatting of all cells, hiding rows or columns, and entering data or calculations in blank cells. Many ofthe templates have been expanded to accommodate solving larger problems and cases.

TABLE 3.1 Excel solution for Example 5



	A	B	C	D
1	Linear Trend Equation		Basic	Clear
2	<Back			
3	Slope =	7.5091	MAD =	4.44
4	Intercept =	699.4	MSE =	32.91
5				
6	Period	Actual	Forecast	Error
7	1	700	706.90909	-6.9090909
8	2	724	714.41818	9.5818182
9	3	720	721.92727	-1.9272727
10	4	728	729.43636	-1.4363636
11	5	740	736.94545	3.0545455
12	6	742	744.45455	-2.4545455
13	7	758	751.96364	6.0363636
14	8	750	759.47273	-9.4727273
15	9	770	766.98182	3.0181818
16	10	775	774.49091	0.5090909
17	11		782	
18	12		789.50909	
19	13		797.01818	
20	14		804.52727	
21	15		812.03636	
22	16			
23	17			
24	18			