**Chapter 17&18**

**Aggregate price indexes**

**#4**

R & B beverages, Inc., provides a complete line of beer, wine, and soft drink products for distribution through retail outlets in central Iowa. Unit price data for 2003 and 2006 and quantities sold in cases for 2003 follow.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **2003 quantity cases** | **Unit prices** | **2003** | **2006** |
| Beer | 35,000 |  | 16.25 | 17.50 |
| Wine | 5,000 |  | 64.00 | 100.00 |
| Soft drink | 60,000 |  | 7.00 | 8.00 |

Compute a weighted aggregate index for the R&B Beverage sales in 2006, with 2003 as the base period.

Index Numbers

**#17**

The median sales prices for new single-family houses for the years 1998-2001are as follows (*Statistical abstract of the United States, 2002*)

|  |  |
| --- | --- |
| Year | Price ($1000s) |
| 1198 | 152.9 |
| 1999 | 161.0 |
| 2000 | 169.0 |
| 2001 | 175.2 |
|  |  |

1. Use 1998 as the base year and develop a price index for new single-family homes over this four-year period
2. Use 1999 as the base year and develop a price index for new single- family homes over this four year period

**Forecasting**

**#29**

The following table reports the percentage of stocks in a typical portfolio in nine quarters from 2005 and 2007

**Quarter** **Stocks %**

|  |  |
| --- | --- |
| 1st-2005 | 29.8% |
| 2nd-2005 | 31.0 |
| 3rd-2005 | 29.9 |
| 4th-2005 | 30.1 |
| 1st-2006 | 32.2 |
| 2nd-2006 | 31.5 |
| 3rd-2006 | 32.0 |
| 4th-2006 | 31.9 |
| 1st-2007 | 30.0 |

1. Use exponential smoothing to forecast this time series. Consider smoothing constants of a=.2, .3and.4. What value of the smoothing constant provides the best forecast?
2. What is the forecast of the percentage of stocks in a typical portfolio for the second quarter of 2007?

**#35**

The following five years of data show the average minimum balance to avoid fees for checking accounts that pay interest (*USA Today, December 6, 2005*

|  |  |
| --- | --- |
| **Date** | **Balance** |
| Spring 2000 | 1522.41 |
| Fall 2000 | 1659.63 |
| Spring 2001 | 1678.34 |
| Fall 2001 | 1707.55 |
| Spring 2002 | 1767.36 |
| Fall 2002 | 1866.17 |
| Spring 2003 | 2015.04 |
| Fall 2003 | 2257.82 |
| Spring 2004 | 2425.83 |
| Fall 2004 | 2086.93 |
| Spring 2005 | 2295.85 |
| Fall 2005 | 2294.61 |

1. GRAPH THIS TIME SERIES. Dose A linear trend appear to be present?
2. Develop the equation for the linear trend component for the time series.
3. Use the trend equation to forecast the minimum average balance to avoid account fees for Spring 2006