TABLE 4.1

**Expenditures for Health in New York City, Fiscal Years 1996–2007 (in thousands)**

| Fiscal years | Health Department | Mental Health Department | Hospitals Department | New York City's total health expenditures | New York City's total expenditures | CPI |
|---|---|---|---|---|---|---|
| 1996 | $419,308 | $319,275 | $1,090,173 | $1,828,756 | $32,066,586 | 166.9 |
| 1997 | 420,275 | 345,284 | 682,924 | 1,448,483 | 33,736,152 | 170.8 |
| 1998 | 472,030 | 396,095 | 684,601 | 1,552,726 | 34,923,250 | 173.6 |
| 1999 | 491,603 | 437,292 | 722,094 | 1,650,989 | 35,858,612 | 177.0 |
| 2000 | 790,726 | 251,446 | 735,127 | 1,777,299 | 37,879,886 | 182.5 |
| 2001 | 906,947 | 295,114 | 757,023 | 1,959,084 | 40,226,977 | 187.1 |
| 2002 | 1,049,135 | 256,064 | 826,307 | 2,131,506 | 40,860,000 | 191.9 |
| 2003 | 1,414,923 | — | 826,572 | 2,241,495 | 44,340,229 | 197.8 |
| 2004 | 1,441,247 | — | 976,875 | 2,418,122 | 47,292,395 | 204.8 |
| 2005 | 1,432,047 | — | 992,136 | 2,424,183 | 52,789,712 | 212.7 |
| 2006 | 1,467,786 | — | 1,290,016 | 2,757,802 | 53,999,075 | 220.7 |
| 2007 | 1,513,879 | — | 758,603 | 2,272,482 | 58,705,982 | 229.5 |

*Note:* The Mental Health Department was merged with the Health Department in FY 2003. CPI = consumer price index; CPI Adjusted Index: CUURA101SA0, New York-Northern New Jersey-Long Island, NY-NJ-CT-PA; base period 1982–1984 = 100. CPI figure for FY 2007 is November 2007.

spreadsheet for inflation. The technique is to convert current dollar expenditures using cost of living indexes to constant (real) dollars by removing inflation as a factor.

b. After you complete the spreadsheet calculating constant dollars, write a paragraph from you, as a fiscal analyst, to OMB's budget director. In it you will explain what differences you found when you controlled for inflation compared with the first exercise when you did not control for inflation.

To complete the following two exercises, use the spreadsheet file titled "Budget Tools Chapter 04 Text Examples and Exercises."

3. On the "Property Tax" sheet, there are property tax revenues from 1980 through 2006 for a U.S. city. The magnitude (thousand, millions, etc.) is not shown. In 2003 there was an approximately 15 percent tax increase phased in over two years. Assume that you are an analyst working in year 2007; thus, a five-year forecast would continue through year 2012 (five years after 2007).
   a. If you were to plan for a judgmental adjustment, what would it be?
   b. Using the same grid as used in Table 4.3, make the best forecast through year 2012; do not make your judgmental adjustment.
   c. Make an *XY* plot of your forecast beside the original data.



polls of presidential approval from September 2001 throu analysis suggests little evidence of seasonality.

   a. Make an *XY* plot of these data.
   b. Using the same grid as used in Table 4.3, make through December 2008.
   c. Make a new *XY* plot of the forecast beside the data.
   d. Is there any reason why you might think the approval forecast December 2008 value?

## Additional Readings


Makridakis, Spyros G., Stephen C. Wheelwright, and Rob J *casting: Methods and Applications.* 3d ed. New York: Wile

Williams, Daniel W. "Forecasting Methods for Serial Data *Research Methods in Public Administration,* 2d ed., ed. Gerald J. Miller. Boca Raton, Fla.: CRC Press, 2008.

Williams, Daniel W. "Preparing Data for Forecasting." In *G Forecasting: Theory and Practice,* ed. Jinping Sun and T Boca Raton, Fla.: Taylor & Francis, 2008.

Williams, Daniel W. "Seasonality." In *Encyclopedia of Publ and Public Policy,* 2d ed., ed. Evan M. Berman and Jacl editor), 1746–1756. Boca Raton, Fla.: CRC Press, 2007.

Williams, T. M. "Adaptive Holt-Winters Forecasting," *Jou tional Research Society* 38 (1987): 553–560.


## Notes

1. The two most common very simple techniques are to calculate the ave erage percent growth over the last several periods and project whicheve periods. The reason that these are too simple is that they both introduce ity to random variation and the percent growth method may introduc plicative growth.
2. These issues are discussed in Daniel W. Williams, "Preparing Data for ernment Budget Forecasting: Theory and Practice, ed. Jinping Sun and T Raton, Fla.: Taylor & Francis, 2008).
3. See Daniel W. Williams, "Forecasting Methods for Serial Data," in *Hand ods in Public Administration,* 2nd ed., ed. Kaifeng Yang and Gerald J. M CRC Press, 2008).