

City of Somerville, MA: Budgeting and Performance Evaluation (Managerial Accounting)

Learning objectives

1. Create a pivot table in Excel
2. Format a pivot table
3. Apply filters to a pivot table
4. Prepare a budget variance report referencing numbers in a pivot table
5. Analyze budget variances

Data set background

Paul Revere rode through the City of Somerville, Massachusetts, during his famous “Midnight Ride.” Its Prospect Hill was where the first Grand Union flag was raised under orders by General George Washington on January 1, 1776.

Today, Somerville is a city with a population of almost 80,000 and is one of the most ethnically diverse cities in the country. It is located just two miles north of Boston and occupies just over 4 square miles.

The City of Somerville, MA, posts its [checkbook online](#) for public use. This data analytics activity uses the City of Somerville (Somerville) checkbook dataset for the years 2013 – 2016 and contains more than 55,000 records.

Note: Even though the City of Somerville, MA, uses a fiscal year from July 1 through June 30, calendar years are used here so that the analysis does not get complicated from the conversion from fiscal years to calendar years in Excel pivot tables.

Data dictionary

- **Item Number:** This field is a sequential number assigned during the year. The year was added to the item number to create a unique identifier for each transaction.
- **Category of Gov:** This field indicates whether the transaction relates to Education, General Government, or Public Works, the three divisions of government for the City of Somerville.
- **Vendor Name:** This field contains the name of the entity related to the transaction.
- **Amount:** This field is the amount of the check.

- **Check Date:** This field is the date that the check was written.
- **Department:** This field is the department within the Category of Government related to this transaction.
- **Check #** : This field is the sequential check number.
- **Org Description:** This field gives additional detail about the specific organization within the general Department related to this transaction.
- **Account Desc:** This field provides additional detail about the purpose of the transaction.
- **Item Class:** This is the only fictitious field that was added to Somerville's dataset. This field attempts to classify Somerville's checkbook items into broad classes for ease of analysis and interpretation.

Requirements

For each of the following requirements, create a new pivot table in a new worksheet. Name each new worksheet as "Req 1," "Req 2," etc. Format the dollar amounts in each pivot table or pivot chart using the accounting format with zero decimal places. Format non-currency numbers in each pivot table or pivot chart using the accounting format with zero decimal places.

1. From 2013 – 2016, what was the total spending in each of the four calendar years? Is spending trending up, trending down, or remaining stable?
2. In each of the years 2013 - 2016, how much was spent in each of the three categories of government (Education, General Government, and Public Works)? What does the pivot table show you?
3. How much in expenditures did Somerville have in each "Item Class" in the General Government category for each of the years 2013 – 2016? What insights can you draw from the pivot table?
4. Using the budget worksheet included in the Excel data file, prepare a budget variance report that compares actual spending by "Item Class" in 2016 for the General Government category. Use cell references for the actual spending totals. Use conditional formatting (use the "Shapes, 3 Signs" style) to denote the direction of the percentage variances. You will want to denote any variance that is more than +/-10% with a red diamond, between +/-3 – 9.99% with a yellow diamond, and less than +/-3% with a green circle.

Note: You can refer to cells in a pivot table from another worksheet, but you cannot copy the referenced cell – so you have to point to each cell individually.

5. Analyze the budget variance report you prepared in Step 4. What variances do you think should be investigated? Why?

