

Case Problems #4, Due 7/24/2025 or 7/24/2025

1. Solve one of the following two case studies:

CASE PROBLEM 1: FORECASTING FOOD AND BEVERAGE SALES

The Vintage Restaurant, on Captiva Island near Fort Myers, Florida, is owned and operated by Karen Payne. The restaurant just completed its third year of operation. Since opening her restaurant, Karen has sought to establish a reputation for the Vintage as a high-quality dining establishment that specializes in fresh seafood. Through the efforts of Karen and her staff, her restaurant has become one of the best and fastest growing restaurants on the island.

To better plan for future growth of the restaurant, Karen needs to develop a system that will enable her to forecast food and beverage sales by month for up to one year in advance. Table 17.25 shows the value of food and beverage sales (\$1000s) for the first three years of operation.

Managerial Report

Perform an analysis of the sales data for the Vintage Restaurant. Prepare a report for Karen that summarizes your findings, forecasts, and recommendations. Include the following:

1. A time series plot. Comment on the underlying pattern in the time series.
2. An analysis of the seasonality of the data. Indicate the seasonal indexes for each month, and comment on the high and low seasonal sales months. Do the seasonal indexes make intuitive sense? Discuss.
3. Deseasonalize the time series. Does there appear to be any trend in the deseasonalized time series?
4. Using the time series decomposition method, forecast sales for January through December of the fourth year.
5. Using the dummy variable regression approach, forecast sales for January through December of the fourth year.
6. Provide summary tables of your calculations and any graphs in the appendix of your report.

Food and Beverage Sales for the Vintage Restaurant (\$1000s)

Month	First Year	Second Year	Third Year
January	242	263	282
February	235	238	255
March	232	247	265
April	178	193	205
May	184	193	210
June	140	149	160
July	145	157	166
August	152	161	174
September	110	122	126
October	130	130	148
November	152	167	173
December	206	230	235

Assume that January sales for the fourth year turn out to be \$295,000. What was your forecast error? If this error is large, Karen may be puzzled about the difference between your forecast and the actual sales value. What can you do to resolve her uncertainty in the forecasting procedure?

CASE PROBLEM 2: FORECASTING LOST SALES

The Carlson Department Store suffered heavy damage when a hurricane struck on August 31. The store was closed for four months (September through December), and Carlson is now involved in a dispute with its insurance company about the amount of lost sales during the time the store was closed. Two key issues must be resolved: (1) the amount of sales Carlson would have made if the hurricane had not struck and (2) whether Carlson is entitled to any compensation for excess sales due to increased business activity after the storm. More than \$8 billion in federal disaster relief and insurance money came into the county, resulting in increased sales at department stores and numerous other businesses.

Table 17.26 gives Carlson's sales data for the 48 months preceding the storm. Table 17.27 reports total sales for the 48 months preceding the storm for all department stores in the county, as well as the total sales in the county for the four months the Carlson Department Store was closed. Carlson's managers asked you to analyze these data and develop estimates of the lost sales at the Carlson Department Store for the months of September through December. They also asked you to determine whether a case can be made for excess storm-related sales during the same period. If such a case can be made, Carlson is entitled to compensation for excess sales it would have earned in addition to ordinary sales.

Managerial Report

Prepare a report for the managers of the Carlson Department Store that summarizes your findings, forecasts, and recommendations. Include the following:

1. An estimate of sales for Carlson Department Store had there been no hurricane.
 2. An estimate of countywide department store sales had there been no hurricane.
 3. An estimate of lost sales for the Carlson Department Store for September through December.
2. Some says that "*Prediction is the process of estimating the outcomes of unseen data. Forecasting is a sub-discipline of prediction in which we use time-series data to make forecasts about the future.*" There are two techniques used in accounting forecasting: qualitative and quantitative.
- (a) Qualitative forecasting methods are subjective, based on the opinion and the judgment of consumers and experts. Give some examples of frequently used qualitative forecasting methods.
 - (b) Quantitative forecasting is different from qualitative forecasting because it is objective and based on statistics and mathematics. There are various quantitative strategies and provide some of your popular choices.