

Texas Service Sector Outlook Survey

Seasonal Adjustment for Texas Service Sector Outlook Survey

The Dallas Fed reports its Texas Service Sector Outlook Survey (TSSOS) on a seasonally adjusted basis. Seasonal adjustment enhances the survey's value by making it easier to discern underlying economic trends.

Time series can exhibit seasonal patterns that, if not accounted for, can lead to misinterpretations about real economic activity. Seasonality can be statistically identified with at least three years of data. The Dallas Fed began conducting TSSOS in January 2007, providing enough data to make precise seasonal adjustments.

The Dallas Fed uses the X12 seasonal-adjustment procedure, developed by the U.S. Census Bureau, to statistically remove seasonal effects. X12 requires a minimum of 36 months to seasonally adjust a time series, although 60 months is preferred for a high degree of confidence in the statistical tests.

TSSOS respondents are explicitly asked to take seasonal variations into account in assessing their firm's performance each month. However, the X12 results indicated that 39 of the 46 indexes tested^[1] contained statistically significant seasonality.

As a result, the following indexes have been seasonally adjusted:

- Current Revenue
- Future Revenue
- Current Employment
- Future Employment
- Current Part-Time Employment
- Future Part-Time Employment
- Current Hours Worked
- Future Hours Worked
- Current Wages and Benefits
- Future Wages and Benefits
- Current Input Prices
- Current Selling Prices
- Future Selling Prices
- Current Company Outlook
- Future Company Outlook
- Current General Business Activity
- Future General Business Activity

Each index is calculated by subtracting the percentage of respondents reporting decreases in activity from the percentage reporting increases.

Indexes were tested using the X12 procedure's F-test for seasonality assuming stable seasonal factors. When no seasonality was detected, the indexes and their components were not adjusted. For those series identified as seasonal, the increase, decrease and no change components were each adjusted. The index was then re-computed using the adjusted components. If the three adjusted component series didn't sum to 100 percent, they were normalized to add up to 100.

In January each year, the Dallas Fed will revise historical data for the Texas Service Sector Outlook Survey by recalculating the seasonal adjustments.

For a more detailed description of seasonal adjustment, see DataBasics "[Seasonally Adjusting Data](#)."

For reference purposes, the [nonseasonally adjusted data](#) will continue to be available.

Notes

1. The outlook uncertainty index, which was added to the survey in January 2018, has not been tested for seasonality because there are not yet enough observations to statistically identify seasonality.

Questions regarding the Texas Service Sector Outlook Survey can be addressed to [Isabel Brizuela](#).