

Seasonal Adjustments to the *Nonmanufacturing Business Outlook Survey*

January 19, 2021

The Federal Reserve Bank of Philadelphia seasonally adjusts the results of its *Nonmanufacturing Business Outlook Survey (NBOS)*. Revised seasonal adjustment factors (and results) are computed annually, prior to the January *NBOS* release. The full set of historical data — seasonally adjusted (SA) and not seasonally adjusted (NSA) — is available in an Excel spreadsheet on the Philadelphia Fed's website.

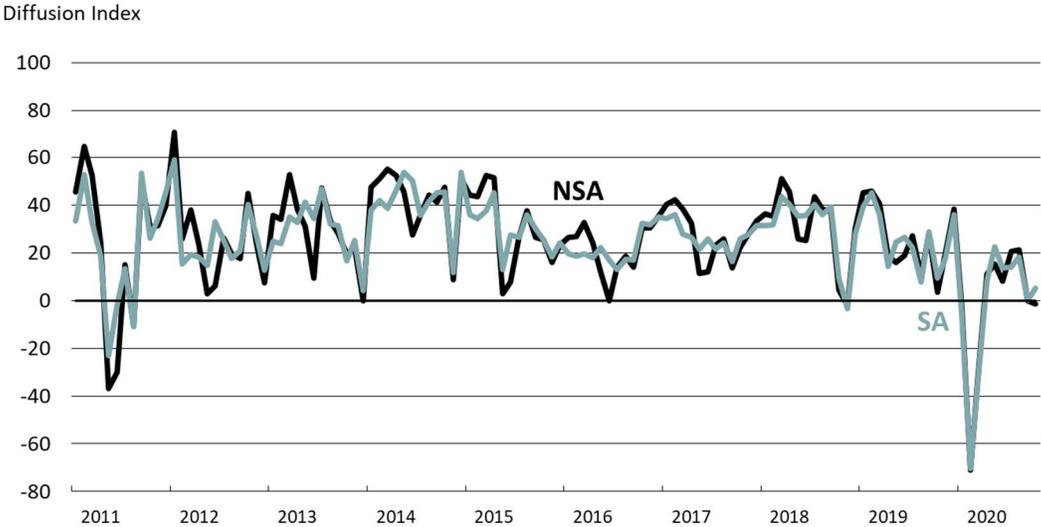
Computing Seasonally Adjusted Data

The Philadelphia Fed uses the U.S. Census Bureau's X-12 methodology with the additive seasonal factors option to adjust the *NBOS* data. Each question's components — increase, decrease, and no change — are seasonally adjusted. In the event a seasonal factor for a component series results in a negative percentage, the percentage is set to zero; if a result exceeds 100, the percentage is set to 100. If the sum of the three adjusted components exceeds 100 percent, the components are proportionally adjusted to equal 100 percent. The sum may fall short of 100 percent — typically representative of nonresponses — and is left as is. The diffusion index for each question is then recalculated using the adjusted component series and is computed as the difference between the percentage of increases and the percentage of decreases.

Results of the Seasonal Adjustment Process

The following chart compares the full history of the current SA series with the NSA series of the current activity diffusion index at the firm level.

NBOS Current General Activity at the Firm Level
March 2011 to December 2020



Note: The diffusion index is computed as the percentage of respondents indicating an increase minus the percentage indicating a decrease; the data are seasonally adjusted.