

## Why Seasonal Adjusting is Valuable



Dave Senf’s story illustrates some of the many industries where employment tends to fluctuate in somewhat typical and recurring patterns during the year. These seasonal patterns stem from calendar effects beyond just changing weather, even here in Minnesota. And the patterns shown in one industry may be quite different – in terms of timing, frequency and magnitude – from those of another. Consider construction, retail trade and education as examples. Even within an industry sector we may see components with very different seasonal tendencies – garden supply stores and department stores within retail, or ski areas and golf courses within arts and recreation for example.

Add to these complex seasonal variations the additional complications that come with the timing of events from year to year. The number of shopping days between Thanksgiving and Christmas, for example, or the timing of the start or end of the school year may cause dramatic shifts in the timing of hiring and downsizing in these areas. And overlaid with all these disparate changes is the fact that our economy is ever-evolving. The impact that highly seasonal sectors like farming and construction have on our overall economy is diminishing, while less volatile areas like health care and business services are growing in importance.

Despite the complex nature of seasonal fluctuations in most economic time series, including employment, a clear divining of the

condition of our labor markets requires some method of distinguishing what part of a change is typical “for this time of year” and how much might be atypical and therefore indicative of real change. The widely used method for accomplishing this and adjusting employment data goes by the somewhat unfortunate acronym X-13 ARIMA SEATS. This involves identifying, through application of any number of statistical packages, a purely mathematical relationship between a variable and its past values at various lags, and using these intertemporal relationships between current and past values to estimate and remove changes across time that are common and persistent. The result is then a series that reflects only the “uncommon” changes over time, those that are greater or less than what has been typical over the course of the historical data series used in the exercise.

It’s important to note, if only because this is often asked by those unfamiliar with the process, that seasonally adjusting a time series is a mathematical exercise. It does not involve analysts using their judgment to determine whether some seasonal event like a blizzard has affected the numbers. The past behavior of the data identifies what’s “typical” for a given indicator at a particular time of year. The remaining change is then identified as the “seasonally adjusted” change, or that part of the change that is irregular and perhaps indicative of changes in conditions that are out of the ordinary. These are what trackers of our economy are looking for, and why seasonally adjusting data is so valuable to that effort. ■