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Seasonality's Effect on Economic Data

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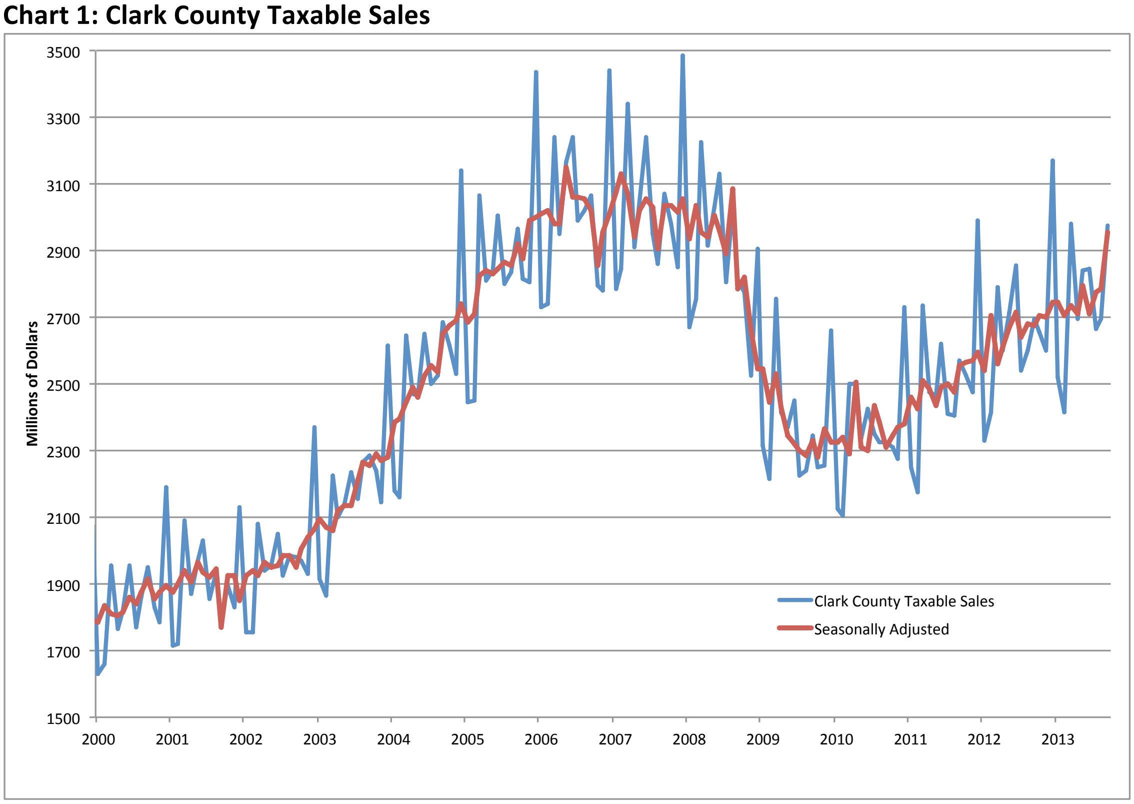
In general, economic activity in Southern Nevada, as throughout the nation, increases during the holiday season. Data show significant gains in economic variables, such as taxable sales and employment during November and December, and a significant falloff in January. Is the holiday spike a one-time boost, or is it part of an underlying trend? If it is a trend, how do economists uncover it?

Consumer Spending

Chart 1 contains taxable sales data for Clark County since 2000. Taxable sales can be thought of as a measure of consumer spending at the local level. Here at the Center for Business and Economic Research, we consistently look to taxable sales as an indicator of the overall health of our economy.

The first thing to note is that the raw data series (blue) is extremely volatile. Most of the biggest spikes fall in December of each respective year. In the last three years, taxable sales experienced an average of 20.9 percent growth from November to December. In January, however, there was an average decline of 20.0 percent. As such, it is difficult to tell if the December boost continued through the following year.

Chart 1: Clark County Taxable Sales



Source: Nevada Department of Taxation

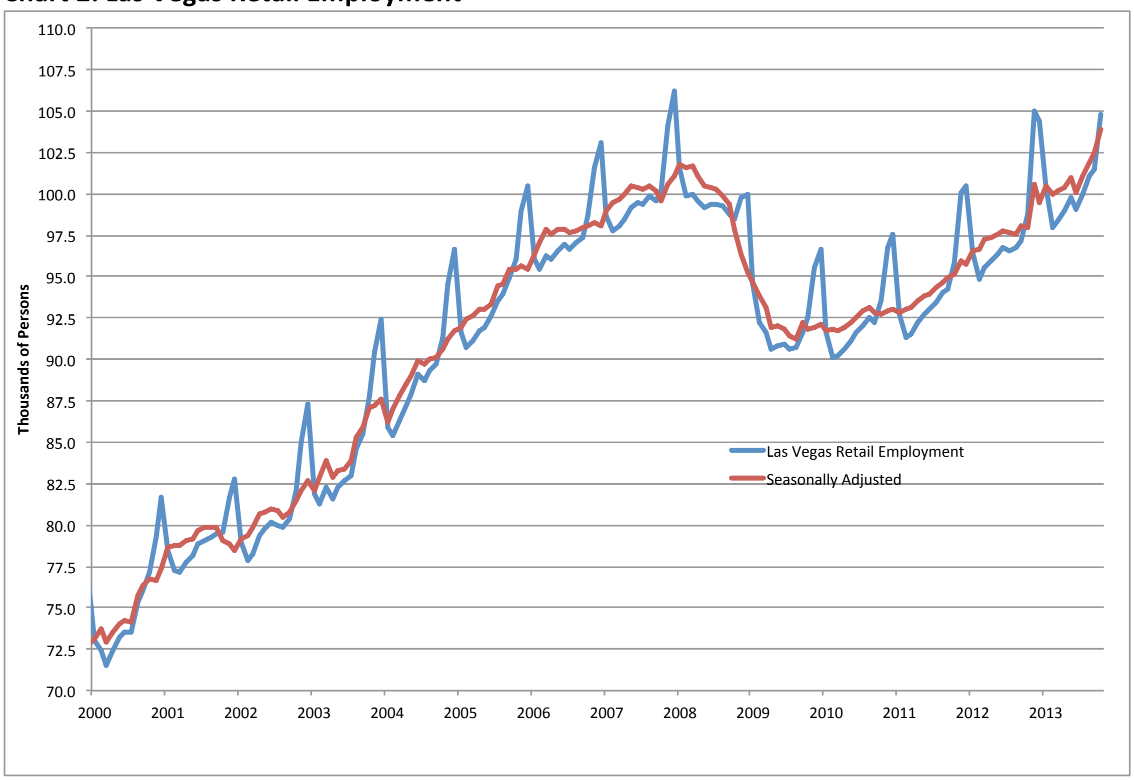
In order to determine overall trends, most economists make seasonal adjustments to the data. This is done by applying a statistical method[1] to the series that removes any seasonal components. Seasonal components are repetitive and predictable movements around the trend of a data series. Seasonal components can be daily, weekly, monthly (our case), or even quarterly. By removing the seasonality from a series, we are able to uncover underlying trends and accurately assess the market.

Chart 1 also contains the seasonally adjusted taxable sales data, which are significantly less volatile than their unadjusted counterpart. Revisiting the previous statistics, the average growth from November to December for the past three years is 1.0 percent. From December to January, the average growth is actually positive, at 0.3 percent. These figures suggest an underlying upward trend in the data.

Job Increases

In preparation for increased sales during the holiday season, businesses hire more employees . Retail employment in Las Vegas usually peaks in November/December (Chart 2). Using the raw data, retail employment increased by an average of 4.8 percent during November and December in the last three years, only to fall by an average of 4.3 percent in January.

Chart 2: Las Vegas Retail Employment



Source: Bureau of Labor Statistics

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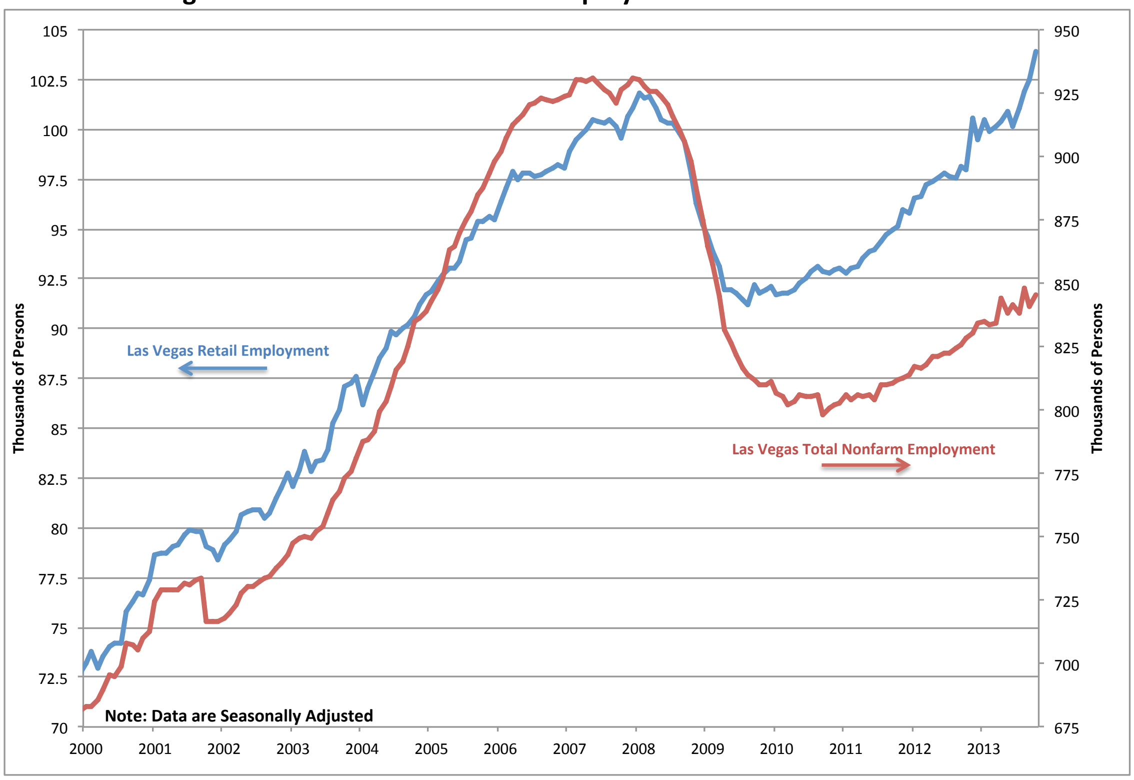
[1]CBER uses the X-12-ARIMA Seasonal Adjustment Program. For more information see: http://www.census.gov/srd/www/x12a/

After seasonally adjusting the data, we get a clear picture of an overall upward trend. Within the last three years, there was an average increase in retail employment of 1.0 percent in November/December and an average gain of 0.3 percent in January.

Retail employment, much like taxable sales, has been a strong point of Southern Nevada's recovery so far, outperforming total nonfarm employment in Las Vegas (Chart 3). Both seasonally adjusted total nonfarm and retail employment experienced large drops, 16.6 percent and 11.6 percent respectively, which were due to the Great Recession Since the bottoming out, retail employment has experienced much more robust growth, increasing by 13.69 and surpassing its prerecession peak.

Chart 3: Las Vegas Total Nonfarm and Retail Employment



Source: Bureau of Labor Statistics

The Holiday Season 2013

So far in 2013, taxable sales are up 4.7 percent when compared to 2012. Because most data lag a couple of months, what should we expect when the 2013 holiday season is over?. Based on the raw data, we should expect percent increases similar to years past for December, in the low to mid-twenties, with an almost equal percentage drop in January. Seasonally adjusted, look for increases in the low 1 percent range for December and a little below 0.5 percent for January. Because increases in taxable sales lead to gains in retail employment, expect slightly larger gains in November/December and January for the seasonally adjusted data.

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