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## Staffing Jobs as Economic And Employment Indicators

New research conducted by the American Staffing Association adds important nuance to the conventional wisdom that the temporary help industry is a coincident economic indicator and a leading employment indicator.

### Key Findings

- **Temporary Help Employment Is a Strong Coincident Economic Indicator When the Economy Is Emerging From a Recession**—A sustained upturn in staffing jobs would signal the end of the current recession.
- **Temporary Help Employment Is a Leading Indicator for Nonfarm Employment**—Staffing job trends lead nonfarm employment by three months when the economy is emerging from a recession and by six months during periods of normal economic growth.

### Background

The notion of temporary help employment as a coincident economic and leading employment indicator has been popular for decades.

In recent years, though, some staffing industry observers have suggested that these relationships may no longer exist.

In 2008, ASA commissioned its research partner, the Inavero Institute for Service Research, to statistically test the strength of the relationships. A regression analysis showed moderate strength in the coincident relationship between changes in temporary help employment and GDP ( $R^2=0.35$ ) during the period 1990–2002. But that relationship became virtually nonexistent during the period 2003–07 ( $R^2=0.06$ ). Regression analyses of 1990–2007 employment data also showed a very weak relationship between changes in temporary help jobs as a one-, two-, or three-month leading indicator of changes in nonfarm jobs ( $R^2<0.15$ ).

The weakness of the economic relationship seemed to be underscored in December 2007 when the current recession started without the precipitous decline in temporary help employment that had preceded previous recessions.

However, the 2008 regression analysis of temporary help employment and GDP was conducted on a relatively small set of data: 72 quarters in total, with the 2003–07 period having only 20 quarters. This is because the smallest unit of measurement for GDP, as provided by the U.S. Bureau of Economic Analysis, is calendar quarters. And temporary help employment data were also limited, as the U.S. Bureau of Labor Statistics currently measures the industry only back to 1990.

ASA commissioned the Inavero Institute again in 2009 to statistically analyze a substantially expanded set of data that covered a much longer period. ASA added previously published BLS figures for “help supply services” (the former Standard Industrial Classification for what is now called “temporary help services” under the North American Industrial Classification System) going back from 1972 to 1989. With the 1990 to 2008 temporary help services figures, the expanded set of data covers 148 quarters and more than five recessions (the current recession is the sixth, but it is not over yet).

Even though temporary help or help supply services jobs have historically accounted for less than 2% of nonfarm employment, figures for those staffing industry jobs were subtracted from nonfarm employment before any subsequent calculations were made, eliminating double-counting of staffing jobs. Hereafter, references to nonfarm employment exclude staffing jobs.

BLS monthly seasonally adjusted payroll employment figures for nonfarm jobs and temporary help or help supply services jobs were gathered into quarters to match BEA GDP periods.

The quarterly data were used to calculate correlations ( $p=0.05$ ) over time (by decades) and during economic cycles between temporary help employment and GDP, and temporary help employment and total nonfarm employment.

In addition to the Inavero Institute analysis, ASA computed simple linear regressions and conducted basic probability analyses of year-to-year changes in temporary and contract staffing employment and sales, as measured quarterly by the association since 1992 (not seasonally adjusted), and year-to-year changes in GDP (quarterly, annualized), through 2008 (68 quarters of data).

### **Coincident Economic Indicator**

In examining more than 35 years of government data, ASA confirmed that temporary help employment is a moderate coincident indicator of quarterly changes in gross domestic product ( $r=0.65$ ).

Temporary help employment also correlated with GDP as both one-quarter leading and lagging indicators, but the relationship was more modest ( $r=0.44$  and  $0.48$ , respectively). Correlations as two-quarter indicators were weak (leading  $r=0.20$  and lagging  $r=0.32$ ).

Because the coincident correlation coefficient was not particularly strong, ASA tested the data over time, by decades. The correlation weakened over time, however, meaning that it was a stronger coincident indicator in the 1970s and '80s (when  $r$  peaked at  $0.75$ ) than it has been in the past two decades (e.g., 2000–08  $r=0.51$ ).

The relative strength of the correlation in the 1980s, when there were two recessions, including—until now, at least—the longest and deepest one since the Great Depression, prompted an examination by economic cycle.

The 1972–2008 quarterly data were divided into four categories reflecting measurable phases of the economic cycle:

- Recession: quarters based on National Bureau of Economic Research cycle dating
- Emerging from recession: eight quarters immediately following the end of a recession
- High growth: quarters in which GDP grew one standard deviation above the mean, or more than 6.14%
- Normal: all quarters that did not meet the above criteria

Analysis shows that temporary help employment is a strong coincident economic indicator when the economy is emerging from a recession ( $r=0.76$ ). This suggests that **a sustained upturn in temporary help employment would signal the end of the current recession.**

Temporary help employment is also a moderate coincident indicator when the economy is in a high growth period ( $r=0.60$ ). Temporary help employment is poorly related to GDP during a recession ( $r=0.13$ ) and a very weak (though still statistically significant) indicator during periods of normal economic growth ( $r=0.28$ ).

Modeling of staffing employment and sales data from the ASA quarterly survey shows that GDP growth of about 1% is required for staffing industry growth. Based on 1992–2008 industry performance, quarterly GDP must grow at an annualized rate of 1.2% to increase temporary and contract staffing employment, and at a rate of 0.8% to increase staffing sales.

Both staffing employment and sales grew in 93% of the quarters in which GDP increased by 1.3% or more. With one exception—the fourth quarter of 2007, when the current recession started—both staffing employment and sales grew whenever GDP increased by 2% or more. Because of that sole exception, however, the probability of staffing growth with GDP at 2% or more is 97%.

### **Leading Employment Indicator**

From 1972 through 2008, changes in temporary help employment have been both coincident and leading indicators of changes in total nonfarm employment.

Over those 36 years, temporary help employment and nonfarm employment were highly correlated ( $r=0.80$ ) in the same quarter. This is not surprising, since jobs are jobs.

But the correlation for temporary help employment as a one-quarter leading indicator of nonfarm employment ( $r=0.78$ ) was almost as high as the correlation for coincidence. Even a two-quarter lead yielded a moderate correlation ( $r=0.65$ ).

Analyzing the data by decades showed that temporary help employment remained relatively stable as a strong coincident and one-quarter leading indicator of nonfarm employment over time ( $r$  range 0.68–0.83). But the correlation as a two-quarter leading indicator substantially strengthened over time, increasing sequentially from decade to decade (from  $r=0.46$  in the 1970s to  $r=0.77$  in the 2000s). In fact, in the current decade, temporary help employment has been stronger as both a one- and two-quarter leading indicator of nonfarm employment than as a coincident indicator (both one- and two-quarter leading  $r=0.77$ , coincident  $r=0.68$ ).

As had been done in the GDP analysis, quarters were categorized by phases of the economic cycle (recession, emerging from recession, high growth, and normal) and correlation coefficients were calculated for temporary help employment as a coincident, one-quarter leading, and two-quarter leading indicator of total nonfarm employment. Except for a weak correlation ( $r=0.33$ ) for temporary help employment as a two-quarter leading indicator of nonfarm employment during a recession, the other correlations remained relatively high ( $r$  range 0.56–0.86). To determine the relative strength of the one-quarter lead versus the two-quarter lead, regression analyses were conducted on all three indicators and the resulting coefficient of determination for each leading indicator was tested against that of the coincident indicator. The strongest relationship was the two-quarter leading indicator during normal economic periods (the coefficient of determination had 85% of the strength of the coefficient for the coincident indicator). The one-quarter leading indicator had a moderate relationship when the economy was emerging from a recession (the coefficient had 52% of the strength of that for the coincident indicator).

Accordingly, temporary help employment was deemed a strong two-quarter leading indicator of total nonfarm employment during periods of normal economic growth and a moderate one-quarter leading indicator of total nonfarm employment when the economy is recovering from a recession—in addition to being a moderate to strong coincident indicator of total nonfarm employment at all times.

## **Conclusion**

The results of this analysis suggest that a sustained upturn in temporary and contract staffing employment would signal the end of the current recession and suggest that total nonfarm employment would begin to grow about three months later.