New Seasonal Adjustment Factors for the Establishment Data Series

Kirk J. Mueller

Twice a year, the Bureau of Labor Statistics (BLS) computes and publishes projected seasonal adjustment factors used to seasonally adjust establishment-based employment, hours, and earnings data. Tables 1-6 present factors for all published series during the 8-month period, September 2000 through April 2001. Revised factors from this update have been used to seasonally adjust the September final, October second preliminary estimates, and November first preliminary estimates. As is usual practice, the annual revision of historical seasonally adjusted data will occur in June 2001, concurrent with the release of the new benchmarks and the next semi-annual update of seasonal adjustment factors (covering March-October 2001).

Seasonal factors in this issue of Employment and Earnings were derived using January 1990 through October 2000 data. The September and October factors replace those published in the June 2000 issue of Employment and Earnings. Seasonally adjusted data are not published for those series with small or irregular components or both. However, these series, shown in tables 1-4, are used in aggregations of broader seasonally adjusted levels.

For employment, seasonally adjusted factors are applied directly to the 2-digit levels with various seasonally adjusted totals up through total nonfarm employment derived through aggregation of the appropriate component series. Series below the 2-digit level are independently adjusted and not used in aggregations. Seasonally adjusted total private hours estimates are weighted averages of seasonally adjusted data at the 2-digit level in manufacturing and division level for other private industries. Seasonally adjusted total private earnings estimates are weighted averages of all divisions.

BLS uses X-12 ARIMA (Auto-Regressive Integrated Moving Average) software, developed by the U.S. Census Bureau, to seasonally adjust the establishment-based employment, hours, and earning series. All series are computed using multiplicative models. The X-12 ARIMA process enables BLS to refine its seasonal adjustment procedures to control for survey interval variations, sometimes referred to as the 4- versus 5-week effect.

A further refinement—the calendar effect—is made in the hours and earnings seasonal adjustment that corrects for changes in the number of weekdays in a month. This adjustment is made to all division-level hours' series in the service-producing sector and the division-level earnings' series for wholesale trade; finance, insurance, and real estate; and services. The series to which the length-of-pay period adjustment is applied are not subject to the 4- versus 5-week adjustment, since modeling cannot support the number of variables required in the regression equation to make both adjustments.

Special adjustments for average weekly hours and average weekly overtime series also are made to account for the presence or absence of religious holidays in the April survey reference period and Labor Day in the September reference period. The annual November special adjustment made for poll workers in the local government (except education) series is also part of this process.

Current seasonal adjustment factors are available on the Internet at: http://stats.bls.gov/ceshome.htm.

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1 For a more detailed discussion of the seasonal adjustment procedure, see "BLS Establishment Estimates Revised to Incorporate March 1999 Benchmarks" in the June 2000 issue of Employment and Earnings. Additional articles in this series appear in previous June issues.
New Seasonal Adjustment Factors for the Establishment Data Series

Christopher D. Manning

Twice a year, the Bureau of Labor Statistics (BLS) computes and publishes projected seasonal adjustment factors used to seasonally adjust establishment-based employment, hours, and earnings data. Tables 1-6 present factors for all published series during the 8-month period, September 2001 through April 2002. Revised factors from this update have been used to seasonally adjust the September final, October second preliminary estimates, and November first preliminary estimates. As is usual practice, the annual revision of historical seasonally adjusted data will occur in June 2002, concurrent with the release of the new benchmarks and the next semiannual update of seasonal adjustment factors (covering March-October 2002).

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For employment, seasonally adjusted factors are applied directly to the 2-digit levels with various seasonally adjusted totals up through total nonfarm employment derived through aggregation of the appropriate component series. Series below the 2-digit level are independently adjusted and not used in aggregations. Seasonally adjusted total private hours estimates are weighted averages of seasonally adjusted data at the 2-digit level in manufacturing and division level for other private industries. Seasonally adjusted total private earnings estimates are weighted averages of all divisions.

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Special adjustments for average weekly hours and average weekly overtime series also are made to account for the presence or absence of religious holidays in the April survey reference period and Labor Day in the September reference period. The annual November special adjustment made for poll workers in the local government (except education) series is also part of this process.

Current seasonal adjustment factors are available on the Internet at: http://www.bls.gov/ces/cessfin.htm.

New Seasonal Adjustment Factors for the Establishment Data Series

Twice a year, the Bureau of Labor Statistics (BLS) computes and publishes projected seasonal adjustment factors used to seasonally adjust establishment-based employment, hours, and earnings data produced by the Current Employment Statistics (CES) program. Tables 1-6 present factors for all published series during the 8-month period, September 2002 through April 2003. Revised factors from this update have been used to seasonally adjust the September final, October second preliminary estimates, and November first preliminary estimates. As is usual practice, the annual revision of historical seasonally adjusted data will occur in June 2003, concurrent with the release of the new benchmarks. At that time, the CES program will convert to the use of concurrent seasonal adjustment. Concurrent seasonal adjustment uses all available monthly estimates, including those for the current month, in developing seasonal factors. As noted above, the CES program currently projects and publishes seasonal factors twice a year. With the introduction of concurrent seasonal adjustment, BLS will no longer publish projected seasonal factors for CES national series. In addition, June 2003 will mark the conversion of national nonfarm payroll series from the 1987 Standard Industrial Classification System to the 2002 North American Industry Classification System.

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