Local Area Unemployment Statistics (LAUS) Program – Technical Notes

Labor Force
The Labor Market Information Center produces monthly labor force statistics through a federal/state cooperative program. The program is known as Local Area Unemployment Statistics (LAUS). The LAUS program is administered and overseen at the national level by the U.S. Department of Labor. Each of the 50 states follows the same methodology to produce employment and unemployment estimates. Common methodology is critical in the production of these estimates as they are used in the distribution of federal dollars to states, and these common methods allow accurate and valid comparisons between states' labor force statistics.

Federal Agencies
The Bureau of Labor Statistics -- a division of the U.S. Department of Labor -- is responsible for methodology development, program oversight, data collection (along with the U.S. Census Bureau), and program funding.

Methodology Development
Econometric models for estimation are developed by economists and statisticians at the Bureau of Labor Statistics. The same mathematical models are provided to state level economists for use in their estimates. The Bureau of Labor Statistics provides model updates as well as training for state economists.

Program Oversight
The Bureau of Labor Statistics is responsible for checking estimates produced by the states. The oversight process includes comparing state and local estimates for consistency, ensuring correct data was used, and being sure all states used the proper methodology. Final estimates are checked multiple times at the federal level before being published.

Data Collection
The Current Population Survey (CPS) is the instrument for data collection. This national survey is conducted monthly for a probability sample of approximately 60,000 households and reflects the same calendar week every month, known as the reference week, generally the week that includes the 12th day of the month. The professional Census Bureau interviewers ask the specific survey questions that determine the labor force status of all household members 16 years of age and over.

National Estimates
The national unemployment estimates are taken directly from the Current Population Survey.

Statewide Estimates
State CPS samples are not large enough to directly produce statistically significant monthly estimates. Instead, the CPS is used in conjunction with other data sources including:
- Payroll employment data from the Current Employment Statistics (CES) survey of businesses.

- Unemployment insurance claimant information.
- Decennial Census data.
- Data on workers involved in labor disputes.

Such sources act as inputs in a time-series regression model used to produce statewide monthly estimates on employment, unemployment, and labor force. In order to ensure full comparability, all states use the same econometric model to estimate their monthly labor force statistics.

Local Area Unemployment Statistics (Substate Estimates)
While it might make intuitive sense that substate level unemployment statistics are simply disaggregated from statewide estimates, this is not the case. Local area unemployment statistics (LAUS) are instead produced using a different methodology, and are eventually controlled to the more reliable statewide estimates. LAUS estimates are conducted using the "handbook" or "building-block" method. That is, many components, or data sources, are summed to find an area's employment and unemployment total, and these are then added together to get the area's labor force total. Once these "handbook" totals are attained, they are forced to the independently estimated statewide statistics to get the final official estimates. This method allows accurate estimates for smaller labor market areas without the necessity of expanding an expensive labor-intensive survey like the CPS.
The handbook method starts with area employment estimation, obtained by summarizing the following data sources:
- Payroll employment estimates(establishment based) adjusted to reflect place of residence using Census commuting patterns.
- Self-employed workers including unpaid family and private household workers, which are excluded from the place-of-work payroll employment estimates.
- Agricultural employment estimates developed from CPS employment ratios.

The next step in the process is the estimation of an area's unemployment, which is gathered from the addition of:
- The number of persons receiving unemployment benefits, coded by their place of residence.
- An estimate of unemployment exhaustees, which are those individuals who have used up all of their unemployment benefits but are still estimated to be unemployed. To account for these, a formula is created using the relationship between the unemployment rate and the duration of unemployment, which renders survival rates for particular areas depending on current labor market conditions. Therefore, an area with low unemployment will have a smaller percentage of its unemployment exhaustees included in its jobless total than will an area with high unemployment.
- Entrants and re-entrants are created using a five year weighted average estimate from monthly CPS data. Handbook and disaggregation calculations are used to distribute the statewide entrants to the substate level. This is done by creating population ratios for specific age groups in each substate area. The new entrants are distributed using the 16-19 population ratios, while reentrants are distributed using the age 20 or more years population ratios.

Once the handbook totals for all counties are obtained, their sum is forced to match statewide totals. Additivity ratios are extracted from the differences between handbook totals and independently estimated totals, and are then multiplied by each sub-state area's labor force totals to get the final and official estimates for each area.

Areas for Which Data is Available

Through the LAUS program, monthly estimates of total employment and unemployment are prepared for approximately 7,300 areas:
- Census regions and divisions
- States
- Metropolitan Statistical Areas and Metropolitan NECTAS (New England City and Town Areas [NECTAs])
- Metropolitan Divisions and NECTA Divisions
- Micropolitan Statistical Areas and Micropolitan NECTAs
- Combined Metropolitan Statistical Areas and Combined NECTAs
- Small Labor Market Areas
- Counties and county equivalents
- Cities of 25,000 population or more
- Cities and towns in New England regardless of population

Over time the number of areas for which LAUS data is prepared by Bureau of Labor Statistics (BLS) has grown as cities have increased their populations and the Office of Management and Budget, in its recurring efforts to define geo-political entities for statistical purposes, has expanded the scope. If a Native American reservation falls within any of the above categories, then a set of labor force estimates is created. Due to a lack of resources, the BLS is limited in what it can do on a recurring basis. An additional constraint would be the inability to derive certain needed inputs required of the LAUS program, such as unemployment claims identified with a reservation. The BLS has neither UI claims data nor intercensal population estimates to use as a basis for disaggregating data for reservation areas.

Related Labor Force Definitions

The Civilian Non-Institutional Population--consists of all individuals who are:
- 16 years of age or older.
- Not living in institutions.
- Not members of the Armed Forces.

The entire Civilian Non-Institutional Population can be divided into three categories:
- Employed.
- Unemployed.
- Not in the Labor Force.

Employed--a person will be counted as employed if one of the following is true:
- Worked at least one hour during the reference week, (the week that includes the 12th of the month) for pay or profit.

- Worked without pay at least 15 hours for a family business.
- Were temporarily absent from work due to illness, vacation, labor dispute, bad weather, or personal reasons (such as maternity leave or childcare problems).

Unemployed--a person will be counted as unemployed if all of the following are true:
- Had no earnings due to employment during the reference week.
- Made specific efforts to find employment some time during the four-week period ending with the reference week.
- Were able and available to accept a job if it had been offered.

Civilian Labor Force--the civilian labor force is the sum of employed individuals and unemployed individuals.

- Civilian Labor Force = Employed + Unemployed

Unemployment Rate--the unemployment rate represents the number of unemployed individuals as a percent of the civilian labor force.
- (Unemployment / Civilian Labor Force) X 100 = Unemployment Rate

These relationships can be seen in the diagram below.
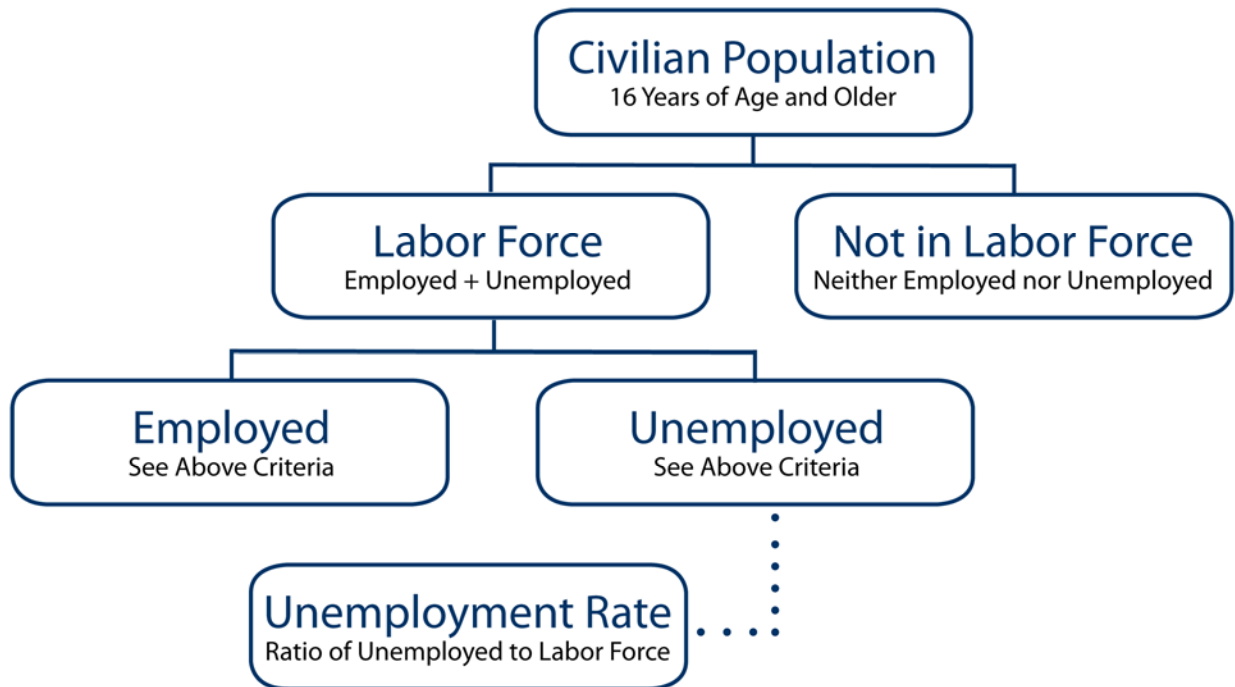
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Benchmarking

Once each year, statewide labor force estimates are revised to reflect updated input data and new Census Bureau population controls. As part of this procedure, all of the state and substate data are reviewed and revised as necessary. Other substate estimates for previous years are also revised on an annual basis. The updates incorporate any changes in the inputs, such as revisions to establishment-based employment estimates or claims data and updated historical relationships. The revised estimates are then readjusted to the latest statewide estimates of employment and unemployment.

A wide variety of customers use the resident labor force estimates. Private industry, researchers, the media, and other individuals use the data to assess localized labor market trends and make comparisons across areas. The resident employed and unemployed are used in hundreds of government programs to allocate federal funds states and areas. State and local governments use the estimates for planning and budgetary purposes to determine the need for local employment and training services.

Seasonal Adjustment

Over the course of a year, employment levels undergo sharp fluctuations due to such seasonal events as changes in weather, reduced or expanded production, harvests, major holidays and the opening and closing of schools. Because these seasonal events follow a more or less regular pattern each year, their influence on statistical trends can be eliminated by adjusting the statistics from month-to-month. It is important to note that seasonal adjustment is merely an approximation based on past experience. Seasonally adjusted estimates have a broader margin of possible error than the original data on which they are based, because they are subject to not only to sampling and other errors but are also affected by the uncertainties of the seasonal adjustment process itself. Employment data are seasonally adjusted with a procedure called X-12-ARIMA. For more information on seasonal adjustment of labor force data, see the U.S. Bureau of Labor Statistics (http://www.bls.gov/lau/lauseas.htm) website.

For More Information

An overview of the LAUS program is available on the BLS website (http://www.bls.gov/lau/lauov.htm) website, as well as LAUS methodology (http://www.bls.gov/lau/laumthd.htm).